

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

NEWSLETTER No 28 – APRIL 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, Sweden, Switzerland and the United Kingdom

Mission:

- 1. To evaluate the world's endowment of oil and gas;***
- 2. To model depletion, taking due account of economics, 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

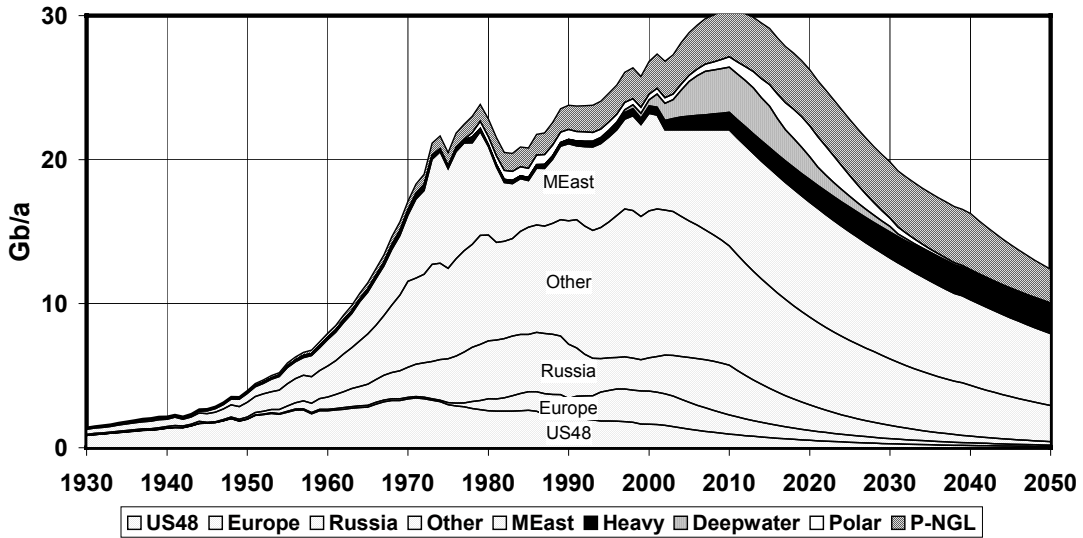
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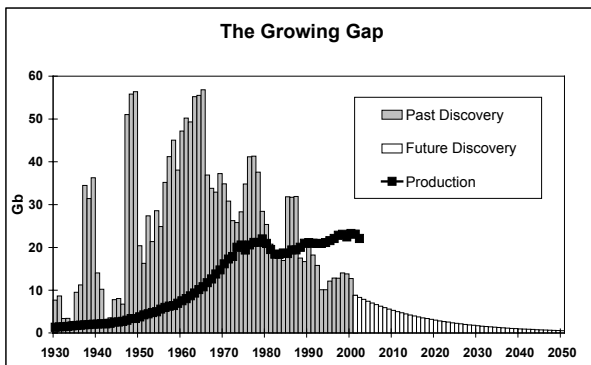
The Newsletter's e-mail address is aspoone@eircom.net

The General Depletion Picture

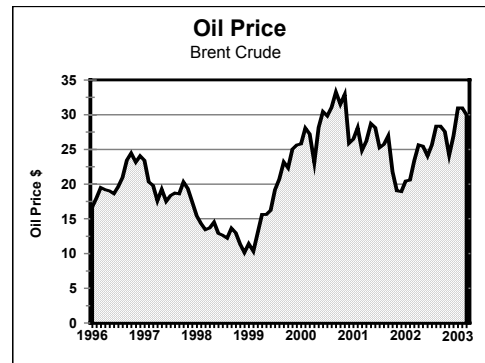
Oil & Natural Gas Liquids 2003 Base Case Scenario



PRODUCTION to 2075									
Amount			Gb	Annual Rate - Regular				Mb/d	
Regular Oil				Category	2005	2010	2020	2050	Total
Past	Future	Total		US-48	3.5	2.6	1.4	0.2	195
Known Fields	New Fields			Europe	5.1	3.7	1.9	0.3	76
896	871	133	1900	Russia	8.6	9.4	4.9	0.7	200
All Liquids				M.E.Gulf	17	22	22	13	749
986	1714	2700		Other	26	22	17	8	680
Status end 2002				Total	60	60	47	22	1900
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	2.8	4	5	6	300
Regular Oil includes condensate but excludes liquids from gas plants				Deepwater	6.6	9	4	0	63
				Polar	1.2	2	6	0	30
				Gas Liquid	8.2	9	11	6	400
				TOTAL	78	83	72	33	2700



The growing gap between oil discovery and production



164. ASPO Meeting in Paris

The programme for the Second International Workshop on Oil Depletion is as follows

Meeting Place : IFP Conference Centre, Rueil Malmaison, Paris

Monday 26th May

- 08:00 – 09:00 Registration
- 09:00 – 09:30 Opening Address: **Claude Mandil**
(Executive Director, International Energy Agency)
- 09:35 – 10:05 **Michael Klare** (Hampshire College, USA)
Resource Wars
- 10:10 – 10:40 **Pierre-René Bauquis** (IFP-School, France)
What Energy Sources for Transportation in the 21st Century?
- 11:05 – 11:35 **Ali Bakhtiari** (National Iranian Oil Company, Tehran)
A Realistic View of Long-term Middle East Production Capacity
- 11:40 – 12:10 **Ray Leonard** (Yukos Oil, Moscow)
Can Russia make up the Difference and for how long?
- 12:15 – 12:45 **Chris Skrebowski** (Institute of Petroleum, London)
The North Sea – Victim of Depletion
- 14:00 – 14:30 **Peter Gerling** (BGR, Hannover)
The World's Endowment of Natural Gas – The BGR's new energy study
- 14:35 – 15:05 **Jean Laherrère** (AFTP, France)
Modelling future Oil Production, Population and the Economy
- 15:10 - 15:40 **Malcolm Slessor** (Edinburgh University, Scotland)
World Energy Supply and Demand to 2050
- 16:05 – 16:35 **Colin Campbell & Anders Sivertsson** (ASPO & Uppsala University)
The 2003 Update of the ASPO Oil & Gas Depletion Model
- 16:40 – 17:10 **Vincent Lepez** ((Institut Francais de Petrole, France)
The Modelling of Remaining Reserves in a Mature Basin
- 17:15 –17:45 **Steve Andrews** (Energy Consultant, USA)
Oil Prophets: Looking at World Oil Studies Over Time

20:00 Conference Dinner

Tuesday 27th May

- 09:00 – 09:30 **Matt Simmons** (Simmons & Co., USA)
The US Reaction to World Oil and Gas Depletion
- 09:35 –10:05 **Kenneth Deffeyes** (Princeton University, USA)
Will 2000 turn out to be Peak followed by wildly oscillating Oil Prices?
- 10:10 – 10:40 **Jean-Marie Bourdairé** (World Energy Council)
Energy supply conditions and oil price regime
- 11:10 – 11:40 To be announced
- 11:45 – 12:15 To be announced
- 12:20 – 12:55 **Maarten van Mourik & Richard Shepherd** (Consultants, France)
The economic drivers of peak production and the economic obstacles to renewables
- 14:00 –14:30 **Gerard Freis** (IFP, France)
The contribution of technology: accelerating depletion or «creating » reserves (including GTL, biomass, etc ...)?
- 14:35 – 15:05 **François Cupcic** (TFE, France)
The ultra-heavy oil (tarsands) of Athabasca and Orinoco : what technologies? and what recovery rate ?
- 15:10 – 15:40 **Werner Zittel** (LBS, Germany)
Renewable energy possibilities
- 15:45 – 16:15 **Paul Metz** (Inter-ger, Netherlands)
The contribution of renewable energy, energy efficiency and the political framework
- 16:30 – 17:00 **Ian Fells** (Newcastle University, United Kingdom),
Energy Options in the United Kingdom
- 17:05 – 17:35 **Kjell Aleklett** (Uppsala University, Sweden)
Sweden's Experience in waking up Europe to Future Energy Issues
- 17: 40 – 18:10 **Panel Discussion**
- 18:10 – 18:20 **Colin Campbell**
Closing remarks
- 19:00 Reception and press conference by speakers
- 20:00 Conference Dinner

According to the Michelin Guide, there are many hotels in the vicinity, including the following (with phone number and approximate price):

Bougival -	Hotel Marechaux	(+331 3082 7711)
Puteaux -	Princesse Isabelle	(+331 4778 8006)
St Cloud -	Villa Henri IV	(+331 4602 5930)

Special Conference rates are available (by quoting IFP) at

Malmaison -	Novotel Atria	(+331 4716 6060)
	Cardinal	(+331 4708 2020)
	Quality Hôtel	(+331 4732 2092)
	Les Arts	(+331 4752 1500)
	Ibis	(+331 4732 9696)

Those looking for an imaginative travel agent, who works wonders with ticketing, could do worse than contact

Andry Sophocles at Travel 2001, London. tel: +44207 431 2525
e-address : mail@2001travelandbeyond.com

Important : For security and other reasons, it is necessary for us to know in advance who are coming. Please therefore confirm by e-mail to C.J.Campbell (aspoone@eircom.net) if you have not already done so. Formal registration will be on arrival when the conference fee of €100 (€25 for students & the retired) will be collected to defray some of the costs. About 50 participants have registered already.

Those who are in a position to do so are asked to publicise the event within their own circles.

165. A new ASPO website

Professor Aleklett in Uppsala has opened a new ASPO website www.peakoil.net

166 A New Book on Oil Depletion

A new book, entitled *The Essence of Oil and Gas Depletion*, compiled by C.J.Campbell, is now available from the publishers:

Multi-Science Publishing Co. (Sciencem@hotmail.com)

5, Wates Way, Brentwood, Essex CM15 9TB, England (Tel +4412 7722 4632).

It is a collection of items from the ASPO newsletters, graphs, the latest resource assessment and depletion model, and a synthesis, which covers wider issues, including Middle East war.

167. ASPO Papers published

Papers from the ASPO First International Workshop on Oil Depletion at Uppsala in May 2002 will be published as a special double issue in Energy Exploration and Exploitation (v20/6 v21/1)

168. A new ASPO Member for Switzerland

We are pleased to welcome Dr Dieter Kuhn, representing the Swiss Energy Foundation (SES), as a new member of ASPO, and look forward to the interchange of ideas and research results.

169 New Study by BGR (The German Resources Institute)

A new study of the world's energy resources is available at 49.80 Euros from Bundesanstalt für Geowissenschaften und Rohstoffe, Stilleweg 2, 30655 Hannover.

170. Saudi Capacity Limit and Soaring Prices

The Dow Jones Newswires report that Saudi Arabia has announced that its production can not be raised, as we have long suspected

DOW JONES NEWSWIRE

NEW YORK -- Saudi Arabia has told Western government and oil officials that the kingdom's crude oil output has reached its limit at around 9.2 million barrels a day and won't rise further, even with a war looming in Iraq, Dow Jones Newswires has learned.

According to Western officials who have spoken with Saudi officials in recent days, there is an understanding that because Saudi output can't rise further, a release of oil from consumer governments' emergency stockpiles is

inevitable, if and when, a U.S.-led war is launched on Iraq.

One Saudi Arabian oil ministry official refused to comment on what the Western sources said, and others were unavailable for comment. Saudi Arabia has maintained that it has about 10.5 million b/d of oil production capacity and that output could be raised to that level within weeks or months, after considerable investment. But the Saudis haven't pumped at that level in more than a decade. However, top Saudi officials have let it be known in recent days that they don't intend to take steps to push output to that level, because they don't think the oil will be needed. The Western officials said the Saudis have expressed the view that the release of oil from consumer stockpiles held by member nations of the International Energy Agency, and already high output from other OPEC members, will be sufficient to cool soaring oil prices, to meet demand and to top-up low global inventories. The Saudis also have expressed the view that any U.S.-led war on Iraq would be relatively brief and isn't expected to disrupt operations in neighboring oil exporting countries.

Prices Now Hyper-Inflated

The Saudis, and others in OPEC, have said that current oil prices, which soared to \$39.99 a barrel last week in the U.S. - the highest level since autumn 1990 - are hyper-inflated by war fears. They say prices will return to more normal levels once the Iraqi situation becomes clear. Still, a brief price spike into the mid-\$40 level, topping the 1990-91 Gulf Crisis high of \$41.15 is expected if war breaks out. In January 1991, when the IEA offered 2.5 million b/d of oil from strategic stocks, crude oil futures prices on the New York Mercantile Exchange fell by one-third, or more than \$10.50 a barrel, in the biggest-ever single-day price decline. OPEC is set to meet On March 11 in Vienna to review output policy. It is expected to agree to suspend output restraints in the event of a war. But, in practice, due to rampant quota-busting in response to sky-high prices, OPEC already has dropped restraints and is essentially pumping at maximum levels.

Saudi Arabian Oil Minister Ali Naimi has repeatedly pledged in recent weeks that the kingdom, and other OPEC members, will ensure adequate supply to the market and produce at the group's 24.5 million b/d output ceiling, despite strike-related output problems in Venezuela. The 24.5 million b/d level, matches on average, the expected demand for oil from OPEC and movements from stocks in the first half of 2003. Industry surveys have put February output by OPEC's 10 members, excluding Iraq, at above the 24.5 million b/d level in the month, even with Saudi output estimated below 9 million b/d.

Dow Jones Newswires' survey, published Tuesday, put OPEC-10 February output at 24.701 million b/d, with the Saudis estimated at 8.733 million b/d in the month. The Kingdom's official quota now stands at just below 8 million b/d. Venezuelan officials maintain that the country's crippled oil production is back over 2 million b/d and rising, while independent estimates and those from dissident workers who led the strike at the state oil company, put the figure at below 1.7 million b/d. In any case, the recovery in the past several weeks in Venezuela's output is helping offset the need for more oil from others in OPEC. Western officials note that standard industry practice requires producers to keep about 10% of output capacity idle to ensure operational flexibility, and on this basis, too, the Saudis don't find it possible to go beyond output of about 9.2 million b/d. The Saudis also don't want to make the investment to maintain output readiness at 10.5 million b/d only to have to keep output well below that level, the Western officials said.

No Significant OPEC Output Hike

Apart from a potential uptick from Venezuela and a slight gain of no more than 200,000 b/d from the UAE, OPEC's output won't rise much with the start of a war, the Western officials said. Kuwait has said that, as a precaution, it will shut in about one-third of its output, or around 700,000 b/d with the start of a war. But the officials said this is expected to be off-line only briefly during the first days or weeks of a war. The Western officials said that while Saudi Arabia has expressed strong support for reining-in runaway oil prices, there is also concern about a considerable drop-off in oil demand in the second quarter 2003. The IEA, in its February oil report, forecasts that demand for OPEC oil and required movements from inventories will fall by 2 million b/d with the end of the high-demand winter season in the Northern Hemisphere. As reported, Naimi met Wednesday in Riyadh with the new head of the IEA, Claude Mandil, and pledged to keep oil markets supplied in the event of war in Iraq.

In the meeting, Mandil welcomed the commitment from OPEC to meet "any further loss of supplies to oil markets in a swift and timely manner," IEA said in a statement.

The IEA, which holds huge reserves of oil in emergency stockpiles, is committed and prepared "to respond convincingly to any loss of oil supplies by making additional oil available to the market when needed," Mandil said. According to the official Saudi Press Agency, Naimi said the two discussed "the importance and the role of OPEC, in general, and Saudi Arabia, in particular, to make up any shortage in the oil supply as a result of discontinuation of oil production of any country for any reasons."

"In this situation, IEA agreed with OPEC opinion that the producers should utilize their spare capacity before resorting to the oil available in the strategic reserves by consumers," the SPA report said. The IEA statement doesn't refer to any agreement or understanding that OPEC would use its spare capacity before consumer countries would open their reserves. The agency said after a Feb. 20 Paris meeting of its governing board that it would open its reserves to supplement OPEC's efforts if needed. IEA Can Provide Near 13M B/D Member countries of the IEA, which is the oil-market watchdog of the Organization for Economic Cooperation and Development, hold about 4 billion barrels worth of crude and petroleum products in government and industry stockpiles. This is enough to cover 115 days of their total net imports.

In the January 1991 Gulf War, the IEA activated a plan to release 2.5 million b/d of oil into the market, with 45% of that coming from the U.S. IEA countries can release about 13 million b/d of stocks from strategic reserves, hugely in excess of Iraq's current output of around 2.4 million b/d. The U.S. Strategic Petroleum Reserve, at a record level of just under 600 million barrels, is the single biggest chunk of this reserve inventory.-
By David Bird, Dow Jones Newswires; 201-938-4423

171 Failure of the UK Energy Policy

ASPO made a submission to the UK Government consultation process, which was evidently ignored by its flat-earth advisers. Dr Fleming comments on the issue as follows

To The Editor, ASPO Newsletter
Sir:

ENERGY WHITE PAPER

The U.K. Government's Energy White Paper, *Our Energy Future*, is flawed in two ways which, if not corrected, could have serious consequences. First, it exaggerates the quantity of oil that will be available in the future, claiming that conventional oil reserves are sufficient to meet projected demand for 30 years. In fact, the consensus of the reputable studies is that, by the mid thirties, total worldwide oil supplies, including non-conventional oil and natural gas liquids, will be down more than 30 percent from the present level.

Secondly, it places a great deal of confidence in gas supplies from Norway and, later, Russia. Norway's gas production can be expected to peak and start to decline around 2018; unfortunately, it is highly uncertain that Russia will be able to take over. The giant Russian Urengoy field is declining rapidly; the new fields such as Shtokmanovskoye are tiny by comparison, and it seems likely that Russian gas production (excluding the Asian fields such as Sakhalin) will be well on the way down from its peak by 2020.

It is clear that the target of a 60 percent cut in emissions by 2050 will be met quite easily, but not because of climate policy. Consumption of oil and gas will have fallen because the fuels themselves will be in deep decline. Indeed, we do not need to look so far ahead, for disruptions in the supply of oil can be expected to occur with increasing frequency after 2010, when world oil production turns down and the only thing on the way up is the dominance of producers in the Middle East.

There is, of course, room for debate about the detail and timing. However, the extraordinary thing about the White Paper is that, on the question of supply it has relied largely on information from the International Energy Agency (IEA). The IEA is not a primary source; all it can do is survey opinion in the field of energy supply, and it is, in any case, under tremendous political pressures of its own. The overwhelming urgency now is for the UK government to commission its own comprehensive study of energy security. The government has ducked this issue time after time, for reasons which are unclear. There is now good, solid research about prospects for oil and gas, widely shared in the literature and conferences around the world, as well as on the Internet. It is really not good enough that the government should insist on being the only kid on the block not to know about it.

Yours faithfully,

David Fleming, Director

The Lean Economy Institute, 104 South Hill Park, Hampstead, London NW3 2SN

172. Arctic Gas

US gas prices are up four-fold on last year reflecting the combination of cold weather and the onset of the steep production decline, which marks the end of the depletion plateau. Canada, whose own stocks are being rapidly depleted by exports, now plans a new pipeline to the McKenzie Delta to be operational by 2008. Another to Alaska is planned, but not before 2011 at the earliest. The costs of the two lines are respectively \$4 and \$20 billion.

173. Progress Report

Mr Anders Sivertsson of Uppsala University has been updating the ASPO model. He has produced some interesting graphs, which tell the story well. The first shows the growing gap between discovery and production (see p2). The relentless fall in discovery, despite all the technology and a worldwide

search, is compelling. The spikes of discovery, which represent new areas, are getting smaller. It is difficult to argue with the extrapolation for future discovery.

The second plot shows world production under various scenarios. The High and Very High Scenarios assume growth in consumption at

respectively 2% and 1% until the Middle East is required to supply 40% of the world's needs, which is considered the practical maximum for these scenarios.

The Base Case assumes flat consumption, due to recession, until the call on the Middle East exceeds 24 Mb/d in 2010, which is the practical limit of this scenario. The Low and Very Low Scenarios assume falling consumption at respectively 1% and 2% a year from deeper recession.

It is noteworthy that by 2025 the iron grip of depletion has brought all the scenarios together for the simple reason that more today leaves less for tomorrow.

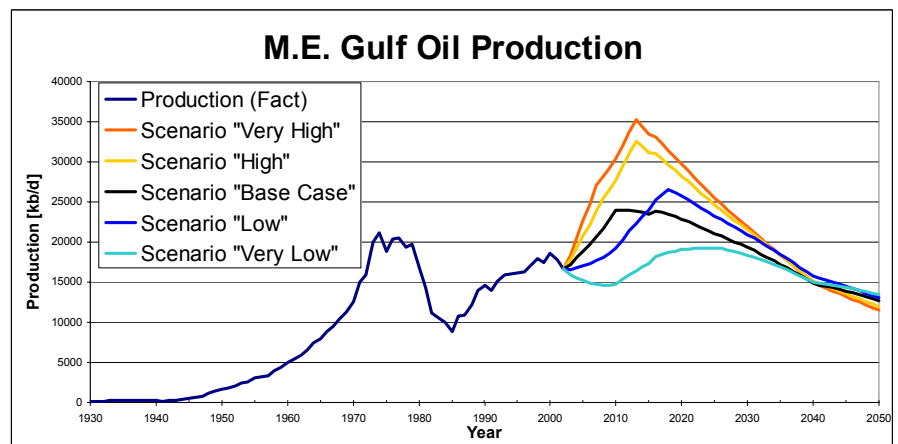
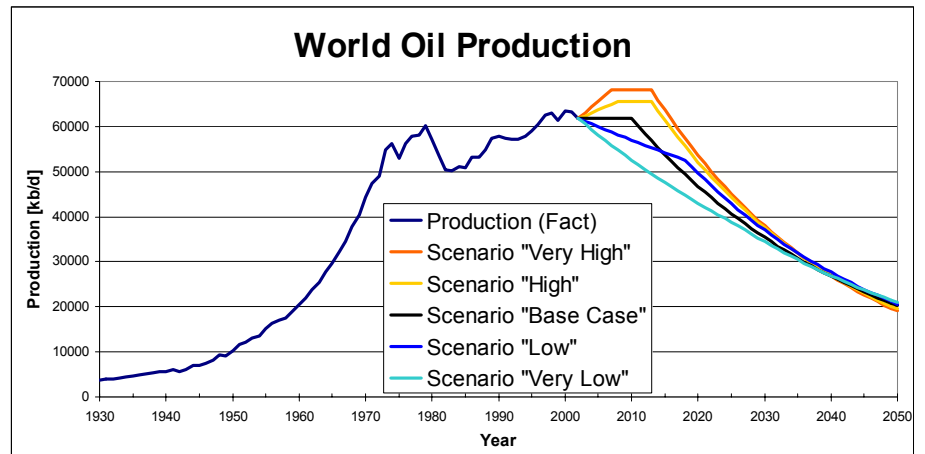
The third plot shows the impact on Middle East production. It makes the Low and Very Low Scenarios look rather plausible. In all cases, the plots refer to *Regular Oil* only.

174. Country Assessment - Australia

Australia is a remote continent in the southern hemisphere, covering an area of about 7.6 M km². It formed part of the Permian super-continent, known as Pangea, before it began drifting southeastwards in the Triassic, about 180 million years ago. It reached its present position some 50 million years ago, when Antarctica split off to continue its geotectonic voyage to the South Pole. The early separation has given the continent a unique flora and fauna.

Much of the continent is made up of ancient shield rocks, generally of mild relief. A low range of mountains, rising to about 1200 m, separates the eastern seaboard from the vast plains and deserts of the interior. Off the East coast lies the Great Barrier Reef, while to the south is the island of Tasmania.

Aboriginal people have lived in Australia for over 40 000 years. They developed a system of land use and management that used all parts of the continent sustainably. They had a complicated ceremonial style of life before contact and conflict with European settlers decimated their population and cultures. It was not until 1606 that Dutch navigators started to put Australia on European maps. Unlike the land-use patterns of the Aboriginal people, many of Australia's European-derived farming systems are inherently unsustainable, as they do not work in harmony with the local ecosystems. Australia's rural producers are now experiencing serious and increasing problems that signal the degradation of their natural resources: soil erosion, declining water quality, loss of biodiversity and salinity.



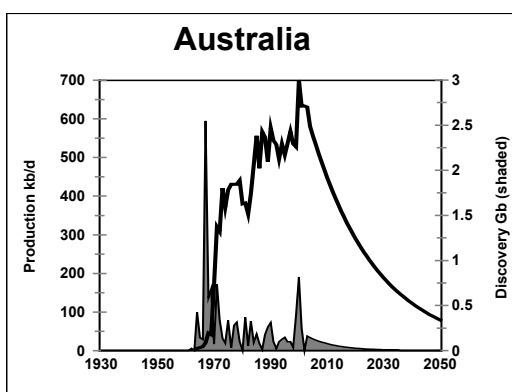
The British explorer, James Cook, reached Australia in 1770, which effectively brought the territory into the British Empire. When Britain was no longer able to ship convicts to America after independence, it began to establish penal colonies in Australia, the first convoy of eleven ships with 759 convicts arriving in Botany Bay in 1788. Life was harsh but in 1810 came the introduction of merino sheep with its long staple wool that was to grow into a major industry. Freed convicts and new settlers began to build a new society during the 19th Century, encouraged in part by the discovery of substantial gold deposits in 1851. The discrete early colonies were brought together as a Commonwealth in 1901.

Immigration continued during the 20th Century, predominantly from Britain, such that Australia became a loyal member of the British Commonwealth making major military contributions to the allied cause in two world wars. Its population is now close to 20 million, which is concentrated in the principal cities, leaving an empty harsh interior. Politically, the country seems to be moving towards a republican status, as its population gradually loses its ties with their original homelands.

Exploration for oil began early, with a reported small discovery being made in 1900. As many as a 157 wildcat wells had been drilled onshore by 1930 despite very little encouragement. A new chapter opened in the 1960s when important discoveries were made in a Tertiary basin in the Bass Strait between Australia and Tasmania and on Barrow Island off Western Australia. The three largest fields were Kingfish (1967) with 1200 Mb, Halibut (1967) with 850 Mb and Mackerel (1969) with 450 Mb. They stimulated renewed interest in exploration generally, resulting in a number of finds both in onshore Palaeozoic basins and in other marginal basins.

The last campaign came with the opening of the huge NW Shelf. It forms the passive margin of the continent facing the contact with the Eurasian Plate, bordering Indonesia. It is made up of a thick sequence of Mesozoic and Tertiary sediments. The former contains several rather lean source-rock intervals, which in many areas lie below the oil-generating window, explaining the preponderance of gas-condensate finds. Australia and Indonesia have also agreed to share the so-called Timor Gap, where discoveries have been made.

Exploration is now at a mature stage, and, to judge from the discovery trend and field size distribution, is unlikely to deliver more than about 1.4 Gb in new finds. A total of 4200 wildcats have been drilled so far. Peak exploration was in 1985 when 184 wildcats were drilled. The number has since declined to about 80, and is expected to continue to do so as the list of viable prospects dwindles, coming to an estimated end around 2035 after another 650 wildcats have been drilled. Australia may have some deepwater potential, but that is most uncertain.



Production peaked in 2000, some thirty-three years after peak discovery. It is now set to fall steeply, as is recognised in Australia itself, having been confirmed with surprising frankness by the industry (Akehurst, 2002).

About 178 Tcf of gas has been discovered, of which 18 Tcf have been produced. Production

AUSTRALIA		<i>Regular Oil</i>
Rates Mb/d		
Consumption	2002	0.84
per person b/a		0.042
Production	2002	0.63
	Forecast 2010	0.45
	Forecast 2020	0.29
Discovery 5-yr average Gb		0.3
Amounts Gb		
Past Production		5.8
Reported <i>Proved Reserves</i> *		3.5
Future Production		5.2
	From Known Fields	3.9
	From New Fields	1.4
Past and Future Production		11
Current Depletion Rate		4.2%
Depletion Midpoint Date		2001
Peak Discovery Date		1967
Peak Production Date		2000

*Oil & Gas Journal

stands at about 1 Tcf/a. Assuming that production rises at 10% a year, it could reach a plateau of, say, 6 Tcf/a lasting from 2020 to 2040 before a final fall. Such a depletion profile would give a total of 218 Tcf with a future discovery of 40 Tcf. The gas also yields a substantial amount of gas-liquids, contributing about half the total liquid production by 2010. Australia has large coal deposits offering good prospects for the production of substantial amounts of coalbed methane. But an attempt to develop oil shale in Queensland has proved uneconomic. A large-scale project to produce solar hydrogen in the Stoney Desert, which has an exceptionally high level of radiation, is in the planning stage.

Australia already imports about 25% of its oil, but with even static consumption, the percentage is set to pass 50% by around 2015. The cost of imports will rise steeply following the now near certain surges in price from Middle East wars and the conflicting demands from the other countries for scarce supplies. Sensibly, Australia is now considering its immigration policy in relation to its sustainable energy future.

Useful references:

Akehurst J., 2002, World oil markets and the challenges for Australia :ABARE Outlook 2002, 6 March

Fleay, B., 2002 Natural Gas – “magic pudding “ or depleting resources; bfleay@inet.net.au

Powell T.G., 2001, Understanding Australia’s petroleum resources, future production trends and the role of the frontiers; APPEA Journ. 2001.

Robinson B, 2002, Australia’s growing oil vulnerability: www.bml.csiro.au/bigrol.htm

175. A Minister recognises the depletion situation

The Hon. Alannah MacTiernan, the Western Australian Minister for Planning and Infrastructure (which includes transport), opened the *Beyond Oil Conference* on 21st February, with a brilliant speech that drew attention to the impact of oil depletion and the need for a fundamental review of policy. A few key points from the speech follow:

- Western Australia has one of the highest rates of car ownership in the world: 526 cars per 1000 people.
- Perth has the highest ratio of road per resident of any Australian city.
- 32 percent of total energy consumption in the state is by transport.
- Our increasing reliance on private transport means that public transport usage has dropped from around 20 percent of all trips 40 years ago to around 5 percent today.
- There is, of course, widespread acceptance of the environmental harm arising from the scale of fossil fuel burning.
- The problem of the readily availability of the product – particularly oil – has been less widely accepted. People like Brian Fleay, WA, - John the Baptists – have been warning for years that the availability of easily extracted oil was moving to an end – but I believe this is now being more widely recognised.
- The debate now seems to focus on how long – crucial because the longer it is, the more the reliance on ‘science’ providing a miraculous answer – the less on changing behaviour and structures.
- Making predictions about price and availability is made more difficult by geo-political overlays, which see oil pricing and supply, part of an international political power play.
- What then can we do – how can we make our community more sustainable?

176. The Party’s Over

A new book, aptly named *The Party’s Over: Oil, War, and the Fate of Industrial Societies* (New Society Publishers, www.newsociety.com) by Richard Heinberg has just been published. It is a brilliant book, explaining imperialism, eternal resource wars, the hidden benefits of a dominant currency, and the deep conflict between the new and old world. It really is penetrating essential reading for anyone interested in understanding the current situation in a global and historical context. It explains how apparent military supremacy and the quest for world domination covers an underlying weakness of a debt-ridden country whose economy is sustained by the imaginary strength of its largely artificial currency.

It is another indication that at long last the implications of peak oil are being perceived by people around the world. If governments understand, they are reluctant to admit it, finding other pretexts for their actions.

177. Article on peak oil in a French-Canadian journal

An article on peak oil by J-F. Begin appeared in *L'Actualité* of 1st April (www.lacualite.com)

178. Consequences for Africa

The Mbendi Newsletter comments on the consequences of the war on Africa:

In a previous newsletter, we speculated on the possible impact a Middle East war might have on Africa. We focused then on the oil sector and how disruption of oil supplies from the Gulf could lead to high oil prices in the short term, accelerated efforts to boost supplies from West and North Africa in the medium term and, in the long term, early depletion of Africa's oil reserves and a greater dependency than ever on the Middle East for oil. Africa will be impacted in other ways.

In the aftermath of a devastating war, a huge chunk of the world's aid budget is likely to be focused on Iraq, just as it was, to a lesser extent, on the now almost forgotten Afghans. Aid to Africa is likely to be cut back and African and other suppliers of goods and services to the aid agencies will need to focus on replacing their African contracts with Middle East ones. Although still a few months hence the conference and exhibition, which takes place in Nairobi in June, provides an opportunity for aid agencies and suppliers to meet and discuss changing priorities and requirements.

A figure of US\$ 20 billion per year is being bandied about as the possible annual investment that will be needed in Iraq after a war. Again, some of this FDI comes from funds which might otherwise have been invested in Africa. Although much is made of the amounts of FDI attracted by each country, we believe that FDI is not the panacea some believe it to be. The downsides of FDI are the ongoing outflow of dividends, interest, royalties and management fees and the transfer of head office functions to an overseas parent office. Because Africa is considered high risk, investors expect higher returns than elsewhere and so pay lower prices than they would in, for instance, the developed world. Although not specifically on the agenda, this is a subject that is likely to arise in various guises during the upcoming from April 7th to 9th in Johannesburg.

Moving away from the business sphere to politics, the spotlight on Saddam Hussein has meant that African despots and warlords can operate with greater freedom. In fact, one of our concerns about the desperate battle for votes in the UN Security Council is that developed countries would increasingly turn a blind eye to mis-governance in Africa in exchange for support in the global political arena. There is also a danger that Africa's slow moving Nepad initiative could come to nought as FDI dries up and the developed world takes an increasingly cynical and hypocritical stance on ethical governance and democracy.

The end result of a Middle East war could thus well be that Africa finally has to find a way to stand on its own two feet, not a bad silver lining to the dark Middle East war clouds. We are just not certain that Africa's leaders are ready for the challenge

179 Nemesis Report

After an absence of several months, our key anonymous analyst from the heart of the oil industry returns with a telling review

Oil Flows

When I last wrote nearly a year ago, I stressed that it was the flows of oil rather than the stocks that mattered when evaluating depletion. The flow of discovery adds to the reserve base and the flow into consumption depletes it. That analysis showed that the difference between the so-called great optimists and the great pessimists is surprisingly small. Essentially it amounted to whether the existing stock of undeveloped and underdeveloped oil reserves are being eaten into at 11 Gb/year or 17 Gb/year or 21 Gb/year; and whether demand for oil was likely to exceed supply by 2005, 2010 or 2015.

In short, the crisis is imminent on any sort of historical time-scale, as is confirmed by a number of developments over the past year. Somewhat less than 10 Gb of oil was discovered (broadly in line with the 10 year average); and just over 27 Gb of oil were consumed. It has finally become socially acceptable to talk about depletion, even ExxonMobil is talking about it. However, just as some companies are facing up to reality, others, together with some of the main consultants and analysts, have begun to confidently predict excess supplies and lower prices. Is it too cynical to say that it's easier to add up all the claimed new capacities than to calculate the likely decline rate realistically?

The so-called coalition of the willing (the USA, UK and some Australians) have decided to confront Iraq, declaring that the war itself is not about oil, but agreeing that the aftermath is all about oil. So far, they have

been too polite to mention the way it could also facilitate the creation of the East-West energy corridor to get oil and gas out of the Caspian region in line with US policy over the last ten years. The stated policy has been to avoid transiting Russia and preferably to avoid Iran.

A quick look at the map shows that the easiest way to get from the Caspian to Ceyhan is across southeast Azerbaijan, up the Araks valley into northeast Iran, and then around Lake Urmia (with a spur to Tabriz refinery), up another valley ending up in Iraq north of Arbil, where it could then be joined to the existing Kirkuk to Ceyhan pipelines, which don't really have enough oil to fill them. Apart from being easier than the currently planned pipeline route, which appears to cross all the highest mountains while taking in the maximum number of badlands, warlords, fiefdoms and contested regions, the route described above is much shorter, and half the pipeline is already built. A low-cost and defensible pipeline route out of the Caspian would make all those Caspian assets so much more valuable, and Siberian crude production could also move out the same way. Coincidence?

War is, of course, a particularly violent solution to a projected supply shortfall, but if people are resorting to a war that is even partially about oil supply, the protagonists must be pretty convinced that the supply shortfall is close. This is a slightly scary thought for all those who thought the ASPO depletion calculations as a gentle academic diversion.

However, I believe that there are clear signs that the problem is coming up fast. Limited brownouts, even blackouts, do not mean you have run out of generating capacity: only that immediate demand has run ahead of immediate supply. But when the shortfalls become sustained, you soon conclude that there is a fundamental shortage of capacity. It is the same with oil and gas production capacity.

ASPO, and virtually all others who look at resource depletion, tend to look for the year when their best estimate of supply falls short of their best estimate of demand. But, this is to wait for the crisis before concluding you have a problem. Seasonal demand variation is currently over 2 million barrels/day between the high demand of winter and the slack second quarter. This year, the spring downturn in demand is being promoted as our salvation. All production in Opec and non-Opec countries alike may be flat out in March, and stocks may now be close to operational minima, but we're urged not to worry because the seasonal downturn will take the pressure off the system. Stocks can then be replenished, prices can fall and we can even have a war with Iraq without digging too far into strategic stocks. Hmm.

The conclusion is simple enough. Supply shortfalls will first manifest themselves as price spikes and supply tightness in the winter season. Then they will become more frequent and more severe, eventually reaching the point where only very high prices can align demand with the available supply. By which point, of course, most economies will be in terminal decline. Now this is no idle speculation about some distant prospect. I suggest we should examine the proposition as we are already seeing the first signs of it. Care is needed because price spikes, shortfalls - even shortages - are nothing new, and often there are good short-term reasons for them. However, some good reasons are better than others.

The prime candidate for 'brownouts' is not oil but North American gas. In late 2000, supply became so tight on winter demand that spot prices spiked to a spectacular \$10/million Btu, compared with the 1990s average of around \$2/million Btu. In the event, the price spike had rather more to do with profitable market manipulation by the likes of Enron capitalising on market decontrol, and a misconceived part-privatisation of the Californian gas market. As supply tightness was only a minor part of the problem, the price spike was relatively short-lived, being deflated by administrative action, fuel switching and economising. The size of the price spike and the profits it made for some triggered a drilling boom, and prices moved back down to the \$2-3 range, apparently confirming all the traditional expectations of classical economics. However, the apparent success of the market was, and is, an illusion. The drilling boom has added little new gas, the additional supply having come from the more rapid than ever depletion of the existing fields, along with rising imports from Canada. Most new wells are now being depleted in as little as two years. The situation is rapidly approaching the point where, even if you know of new accumulations, you can barely drill and connect the wells in time to replace the freshly depleted ones.

The consequences of this high stakes gambling have really made themselves felt this winter. Unlike in 2000, it has not been a price spike but a remorseless rise in price as supply tightens and stocks deplete. From under \$3 in the summer, \$4 was passed in the autumn, \$6 in January, and spot prices are now in the \$8-9 region. It is already clear that gas stocks will be at record lows by the end of the heating season in April.

But how will US gas storage be replenished by next winter? Discovery is low, production is declining at a spectacular 5%/year, the Canadians are saying they have no additional supplies to send south and the Alaskan and Mackenzie Delta pipelines are un-built and many years away. The pat answer of LNG imports runs into two

problems. Although all four US LNG import terminals are being expanded and/or reactivated, overall capacity is still small relative to demand. Although there is spare LNG production capacity, the real bottleneck is lack of LNG carriers. Many new ones are on the stocks or being ordered – but they take time to build.

Now if we turn to oil (which is a truly global market unlike gas), we are starting to see the same pattern. By mid March, the International Energy Agency was confirming record high production with both Opec and non-Opec producers all flat out, US oil stocks at 27-year lows and nudging operational minima, while stocks in the rest of the world were low if not quite as low as in the United States.

However, oil prices are currently falling on the grounds that we are moving into the slack second quarter when demand declines by 2 million barrels/day, and anyway there are plans to release oil from strategic storage. It is said, starting a war in Iraq isn't really a problem, or so the market appears to believe. Presumably it also believes that replenishing stocks isn't really a problem either.

I wish I had more faith in this market.

180. The Invasion of Iraq



We can do no more at this stage than record with a sense of sombre foreboding that the long feared and unprovoked Anglo-American invasion of Iraq commenced on March 20th, despite many calls for restraint, worldwide popular opposition and the absence of a UN mandate. Massive fire-power is causing death and destruction, but faces stiff resistance. The oilfields are already alight.

181 BBC on Iraq for Oil

BBC-2 broadcast a brilliant programme on May 26th (in the Money Programme Series), which left no doubt that the current Middle East war is a bid to control its oil, referring to the ASPO assessment of the status of depletion and the date of peak production. The programme demonstrated the desperate need for the United States to control foreign oil supply as its own continues to decline, also pointing out that its ally, Britain, is in the same boat as its own North Sea production falls fast.

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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Compiled by C.J.Campbell, Staball Hill, Ballydehob, Co. Cork, Ireland