

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

NEWSLETTER No. 92 – AUGUST 2008

ASPO started as a European network of scientists and others, having an interest in determining the date and impact of the peak and decline of the world’s production of oil and gas, due to resource constraints. Now, associates are active in Australia, Austria, Belgium, **Canada, China**, Croatia, Denmark, Egypt, Finland, **France, Germany**, Hong Kong, **Ireland**, Isle of Man, Israel, **Italy**, Luxembourg, **Japan, Korea**, Kuwait, Malaysia, **Mexico, Netherlands, New Zealand**, Norway, **Portugal**, Russia, Singapore, Slovenia, **South Africa, Spain, Sweden, Switzerland, United Kingdom, USA** and Venezuela.

(Formally constituted entities are shown in bold face)

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 of oil and gas decline for Mankind.**

Foreign language editions are available as follows:

Spanish: www.crisisenergetica.org

French: www.oleocene.org (press “Newsletter”)

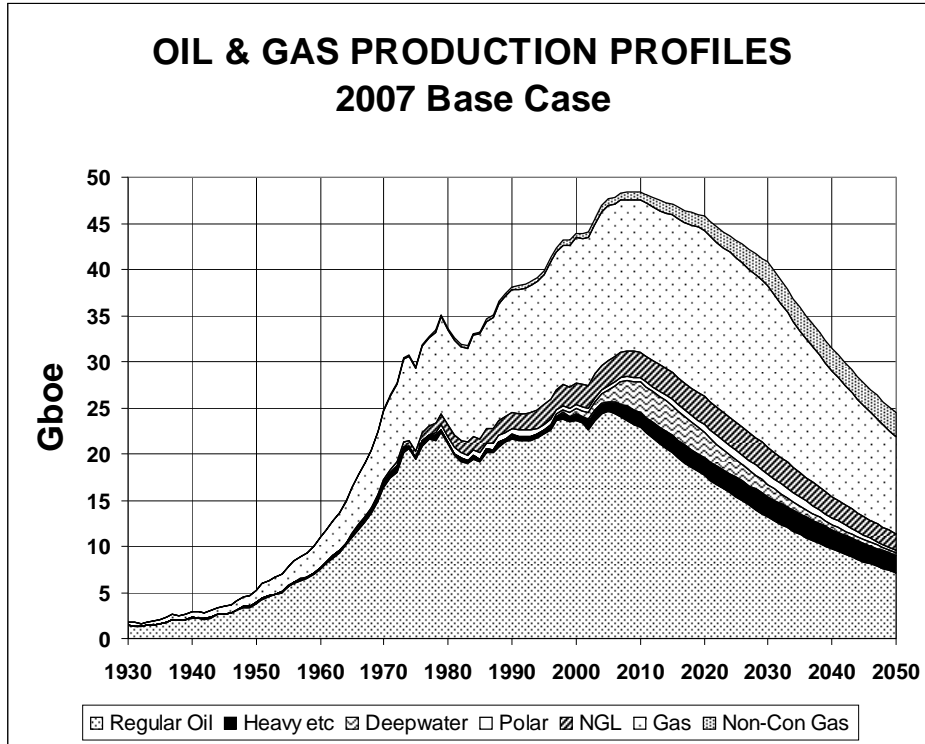
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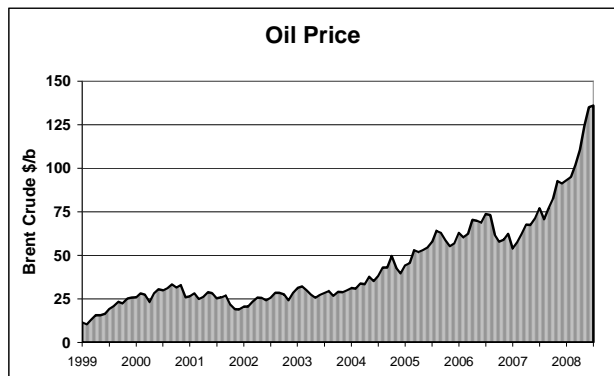
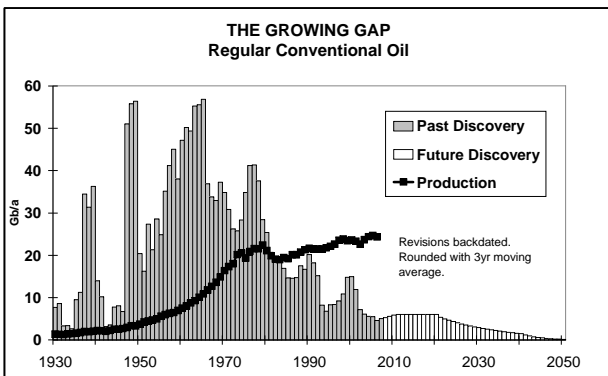
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The General Depletion Picture



ESTIMATED PRODUCTION TO 2100								End 2007			
Amount			Gb	Annual Rate - Regular Oil					Gb	Peak	
Regular Oil				Mb/d	2007	2010	2015	2020	2030	Total	Date
Past	Future	Total		US-48	3.7	3.1	2.4	1.8	1.0	200	1970
Known Fields	New			Europe	4.3	3.5	2.5	1.7	0.9	76	2000
1009	725	141	1875	Russia	9.7	9.7	7.8	6.2	3.9	230	1987
	866			ME Gulf	19	19	20	20	17	663	2015
All Liquids				Other	29	27	23	19	13	706	2005
1151	1299	2450		World	66	63	55	48	36	1875	2005
2007 Base Scenario				Annual Rate - Other							
M.East producing at capacity (anomalous reporting corrected)				Heavy etc.	3.9	4.6	5.2	5.5	6.2	184	2030
Regular Oil excludes Heavy Oils (inc. tarsands, oilshales); Polar & Deepwater Oil; & gasplant NGL				Deepwater	6.7	8.8	9.1	7.5	3.6	85	2013
Revised 06/05/2008				Polar	1.2	1.3	1.7	2.2	3.0	52	2030
				Gas Liquid	7.7	7.7	8.0	8.4	8.2	228	2027
				<i>Rounding</i>			1	-2	-2	26	
				ALL	85	85	80	70	55	2450	2008



1067. Ireland's Response to Peak Oil

Eamon Ryan, Ireland's Minister of Energy, has outlined his Government's response to Peak Oil. His statement opens with some perceptive comments

Our future depends on becoming *energy clever*

We have always known that oil is a finite resource. It seems we only focus on a problem, however, when there is a looming crisis. We did this in the 1970s, when we changed our behaviour for a while. More recently, thankfully, we're turning our heads to energy issues as we approach a peak and subsequent decline in the production of oil around the world.

Ireland is utterly dependent on imported fuel to power our daily lives. Geopolitical factors and geological facts will determine the price and supply of this fuel source. We cannot alter this reality and wishing will not make it so.

He goes on to outline the country's policy with the following key measures:

1. Tap renewable energy, especially from wind and ocean, of which the country is well endowed;
2. Co-operate closely with the long-established Electricity Supply Board to secure a national solution;
3. Facilitate the sale of electricity from small scale producers of wind and other energy to the grid;
4. Install smart meters in every home to reduce wastage;
5. Provide tax incentives for improved commercial and household insulation and efficiency.

1068. New Books

The library of new books on Peak Oil and its impact grows by the hour. A valuable addition is the second edition of *The Final Energy Crisis*, edited by Sheila Newman (Pluto Press ISBN 978-0-7453-2717-4)

It includes an interesting graph relating population to energy supply as reproduced above. A mirror image of future decline, as imposed by the depletion of fossil fuels, can be readily imagined.

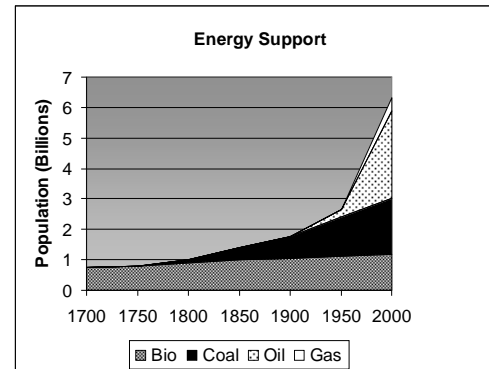
The book quotes Clive Hamilton, who writes of the *Growth Fetish*, recommending moves to limit overwork and directly confront the obsession with growth at all costs. He proposes that advertising should be taxed and removed from the public domain, and that television broadcasting reduced. These sound like splendid ideas.

The book also covers the issue of *Peak Soil* pointing out that it takes 100 years for Nature to provide an inch of top soil. The natural soil stock of the world is being rapidly depleted by industrial agriculture, itself heavily oil dependent.

Another interesting volume is *The Carbon-Free Home* by Stephen & Rebekah Hren, which provides useful practical steps that homeowners can take to reduce their energy requirements. It concludes with the following perceptive words:

Fossil fuels waited like buried treasure for millions of years until humanity had the technological capacity to exploit them. They allowed for the creation and use of countless gadgets and labour-saving devices and the proliferation of the automobile. First we marvelled at these objects, then we bought and used them with wonder, then we took them for granted, and then we became dependent on them for everything. For our food and mobility, our health and entertainment, even our very own identities. We became what we bought and what we had, a commodity amongst heaps and piles of other commodities.

It's fall in the year 2007, as we write this, and the sun is setting on these stranded pools and piles of long-ago sunshine. Like rich, spoiled children who have gorged themselves on an excessive inheritance, we have no idea what to do.....



1069. ASPO-6 Conference Presentations

The presentations made at the ASPO-6 International Conference in Cork, Ireland in September 2007 can now be seen on line at www.aspo-ireland.org/index.cfm/page/watch

1070. ASPO-7 International Conference, Barcelona, Spain

ASPO-Spain is pleased to confirm that the necessary sponsorship has now been provided by generous benefactors to mount a major international conference on Peak Oil and related topics on October 20th and 21st at the World Trade Center in Barcelona. Early registration is recommended. More details are available on the official webpage (<http://www.aspo-spain.org/aspo7/home.php?idioma=en>)

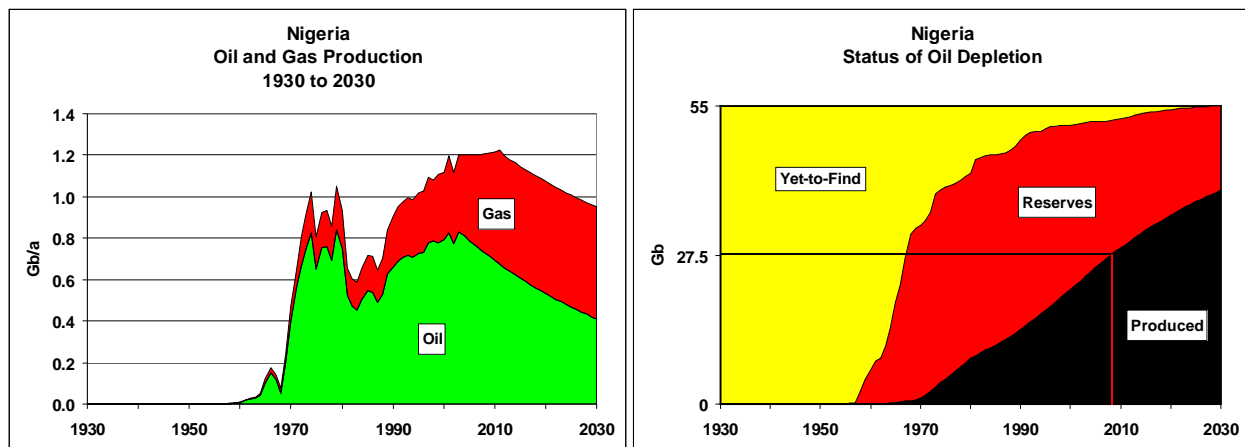
1071. Nigeria re-examined

Nigeria was described in Newsletter 27 of 2003, and it is perhaps time to revise the assessment in view of recent developments which approach civil war involving attacks upon oil installations and pipelines. The following is based on the about to be published *Atlas of Oil and Gas Depletion* (see Item 1076).

NIGERIA						AFRICA			2007	
Production						Peak Dates			Area	
Amount			Rate			Discovery	Oil	Gas	‘000 km ²	
	Gb	Tcf	Date	Mb/a	Gcf/a		1968	1967	Onshore	Offshore
PAST	27	52	2000	790	1812	Production	2005	2025	924	800
FUTURE	28	158	2005	788	2289	Exploration	1966		Population	
Known	25	151	2010	692	2922	Consumption	Mb/a	Gcf/a	1900	16
Yet-to-Find	3	8	2020	533	3000	2006	111	375	2006	144
DISCOVERED	52	202	2030	411	3000		b/a	kcf/a	Growth	9
TOTAL	55	210	Trade	+638	+2149	Per capita	0.8	2.8	Density	156

Note: Excludes Non-conventional deepwater areas

(Note : Graphs refer to Regular Conventional Oil and Gas only)



Essential Features

The Nigeria covers 924,000 km², extending from the deserts of the north, which border the Sahara, to tropical rain forests of the south. Most of the country is relatively flat-lying with rivers flowing through shallow valleys in extensive plains, although more mountainous terrain builds in the south on the border with the Cameroons. The country is drained by the Niger and Benue Rivers, which converge in an extensive delta of freshwater swamps and mangroves. With 144 million inhabitants, it is the most populous country in Africa, also having one of the highest population densities. Lagos, the capital, is home to some 8 million people. Nigeria joined OPEC in 1971, and has played a prominent part in the organisation.

Geology and Prime Petroleum Systems

In geological terms, Nigeria lies on a suture cutting the African Shield. It was responsible for the *bulge of Africa* and for a line of weakness, caused by faulting, which is followed by the Niger River that has built up a large delta in the south of the country. A Mesozoic trough, known as the Benue Trough, underlies the delta running inland.

The prospective part of the delta covers an area of about 120,000 km², distributed equally onshore and offshore, and is made up of about 10,000m of Eocene to Recent clastic sediments. Paralic shales near the base of the sequence comprise the principal source-rock. Low thermal conductivity means that the oil window is deeper than normal, with generation starting at a depth of about 3,000m. Migration commenced during the Miocene, mainly following extensional faults. Reservoirs are provided by multiple deltaic sands with excellent characteristics. Growth faults and rollover anticlines form the principal traps.

Exploration and Discovery

Shell and BP commenced pioneering exploration for oil in the Niger Delta in 1937 but operations were suspended during the Second World War, so that the first discovery was not made until 1957. Progress was slow as exploration relied on seismic surveys through the difficult swamps of the delta, but gradually the potential was recognised.

It is a prolific basin with about 250 producing fields, including thirteen giant fields. The first was found in 1958, and the last onshore was in 1990. It is a dispersed distribution with an almost perfect fit with the theoretical parabolic fractal.

Exploration is now at a very mature stage. Almost 1350 exploration boreholes have been drilled but the pace of exploration is dwindling as fewer and fewer prospects remain to be tested. Exploration will likely end around 2035, after another 160 boreholes have been drilled.

In recent years, attention has turned to the delta-front lying in deepwater, where some large finds have been made, adding about 6 Gb of reserves. The source rocks in this domain reach the generating window only in areas of high heat flow in the proximity of major faults. Deepwater production is now starting, and is expected to peak at around 1.8 Mb/d in 2015.

Some sixteen giant fields have been found, totalling about 13 Gb, or one-fifth of the total endowment, but it is generally a dispersed geological environment with a large number of small to moderately sized fields as is typical of a deltaic environment.

Nigeria remains an important element in Shell's global portfolio, but BP was less fortunate having had its rights sequestered in 1979 for allegedly supplying South Africa when that country was embargoed. Its production became a foundation for a newly created State company. BP did later return in partnership with Statoil. Most of the other international companies are represented in the country.

About 200 Tcf of gas has been discovered, but much has been flared in the absence of a market.

Production and Consumption

Oil production commenced in 1958, rising to pass a million barrels a day by 1970 before reaching an overall peak in 1979 at 2.3 Mb/d, of which about 40% was offshore. It then declined, partly in response to OPEC constraints, to a low of 1.2 Mb/d in 1983, before recovering in recent years. The profile accordingly diverges from the unconstrained model. Approximately half the endowment has now been produced suggesting that production is set to decline in the years ahead albeit at a low depletion rate of 2.6%, reflecting perhaps the constraints of operating a large number of small fields in a difficult environment. Consumption is running at 111 Mb/a, making the country a substantial exporter.

Associated gas production rose in parallel with oil, much being flared. There are now plans to build a gas export pipeline to connect with the Algerian system to eventually supply Europe.

The Oil Age in Perspective

Nigeria was previously tribal territory dominated by the Muslim Hausas in the north and the Ibo in the south. Portuguese and British slave-trading stations were established in the 17th and 18th Centuries, before Britain brought the territory under relatively benign colonial rule in 1906, which led to an epoch of progress and stability.

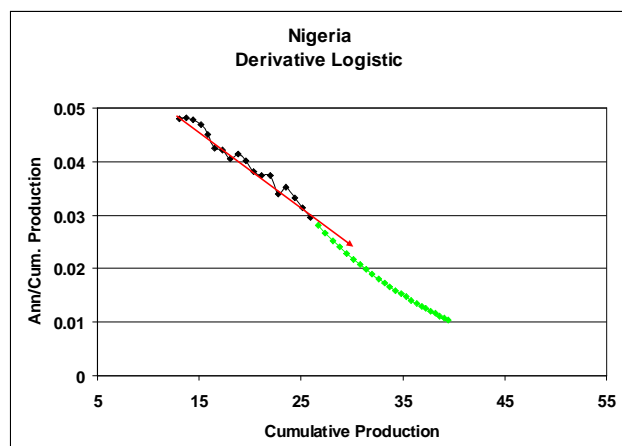
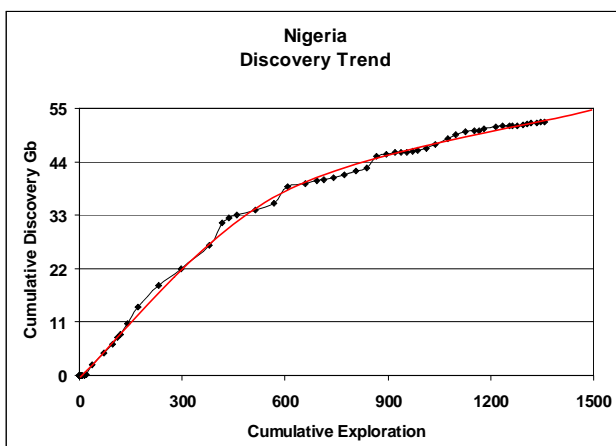
Independence was granted, or it could almost be said, imposed, in 1960, as part of Britain's withdrawal from Empire, whereupon ancient tribal rivalries erupted, leading to a military government from 1966 to 1979. It was dominated by Islamic Hausa and Fulani people, who were responsible for a massacre of up to 30,000 Ibo Christians in the southeastern part of the country. That prompted the development of a separatist movement under Lt.Col. Ojukwu, who declared the independent Republic of Biafra in May 1967, plunging the country into a civil war in which millions died, partly from starvation. This conflict was fuelled to some extent by the rising oil revenues from the Niger Delta region to which the indigenous people felt entitled to a preferential claim.

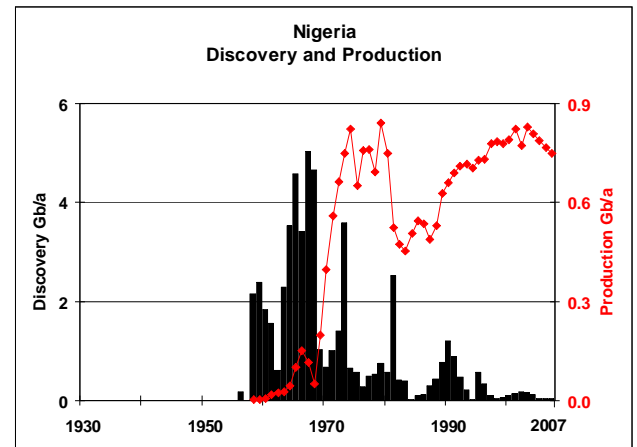
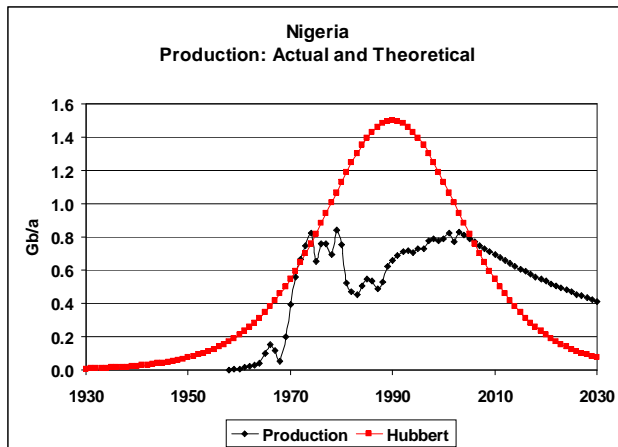
A brief period of civilian government followed from 1979 to 1983 when a new military government took control, following a coup. There have been several subsequent attempts at democratic government, but they were short-lived. General Abacha came to power in 1993 imposing a particularly brutal and corrupt regime but met his end in somewhat mysterious circumstances five years later. He was succeeded by General Obasanjo following a form of election.

Nigeria is well known for the high level of government corruption. Even the internet abounds with offers of oil supply contracts and requests to foreigners to facilitate the transfer of funds to overseas accounts. Ethnic and religious tensions within the country continue, partly exacerbated by the distribution of oil revenues between the different communities. The situation appears to be deteriorating with increased strife, including the abduction of foreign oil workers.

There have been some hints that the United States seeks a special relationship with Nigeria for access to its oil, possibly encouraging it to withdraw from OPEC.

Nigeria will continue to be an important source of world oil for the next two decades, especially as its deepwater production comes in. It will also earn high revenues as oil prices rise higher. Further strife and violence will likely erupt when it is found that falling oil revenue can no longer support the large population. The country is already a substantial net food importer. In fifty years or so, the daily life for the survivors may be little different from the sustainable patterns the country knew in the 19th Century.





The above graphs refer to *Regular Conventional Oil and Gas* only. A preliminary oil profile, including the deepwater, follows.

1072. Nationalism

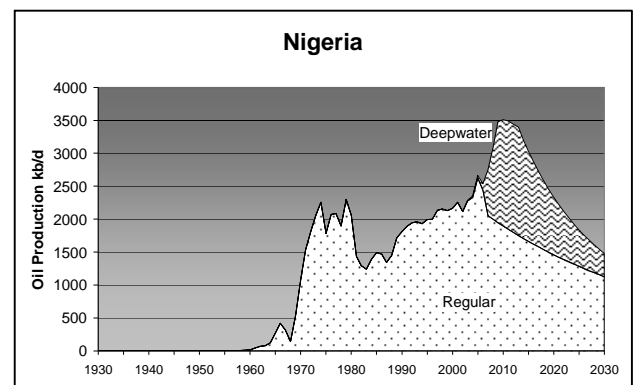
People in early tribes came together for their mutual protection, and somehow found leaders to run their affairs. The concept of tribal identity prompted the need to define frontiers, giving rise to the notion of nationhood, which in turn led to empires by the more successful. The key-factor was land control by which to feed the people. As the well-known demographer, Malthus (1766-1834), explained during the early years of the Industrial Revolution, population and resources have been linked, giving rise to cycles of expansion and contraction with the transition being marked by political and social tensions, often accompanied by war.

The Industrial Revolution was fuelled by the new rich sources of energy provided by coal followed by oil and gas, with land-ownership becoming a less significant, although still important, factor as nations still had to be fed from agriculture. The last century saw the growth of financial empires, as banks lent more than they had on deposit, and stock-market speculation became a mechanism for so-called investment. Attitudes changed such that people counted success in financial terms, even if their money brought them little happiness. Britain led the Industrial Revolution and the new addiction to money. The French philosopher, Stendhal, visiting London in 1831, joked that the ceaseless work to which the English were condemned *avenged us for Waterloo*. Later, the US dollar and the Euro became the fabric of new empires, replacing the pound sterling that formerly held dominion over world trade.

The Second Half of the Oil Age now dawns, as the supply of this critical resource, upon which the politico-economic and social world order was built, declines, leading to economic contraction, and in all probability a Malthusian fall in population. The transition is likely to be accompanied by more resource wars as importers turn to military power to secure their needs, especially from the Middle East, whose governments have come to profiteer from shortage on a massive scale. That in turn is being accompanied by an equally Malthusian population explosion in these countries fuelled largely by immigrants, with spectacular new cities being constructed in the barren deserts and new financial empires built. Yet it is but a fleeting epoch in history, which will be well and truly over by the end of the Century, only a few generations away.

Resource nationalism, which conflicts with the principles of globalism whereby the resources of any nation are deemed to belong to the highest bidder, is likely to grow as countries sensibly try to preserve their remaining critical oil and gas resources for their own use. Russia leads in this direction, moving to oust the foreign oil companies that were let in on the fall of the Soviets. The first to come under severe pressure is BP which has been in serious conflict with its Russian partners, and may face the consequential loss of what amounts to about a quarter of its world production.

Probably these moves herald the demise of the major oil companies more generally, with the so-called *Seven Sisters* being already reduced to four by merger. They now control no more than a relatively small



fraction of the world's production and reserves. They are selling off secondary refineries and marketing chains in recognition of the pending shortfall in supply. Importing countries will likely have to move to some form of rationing, possibly administered by new State agencies.

While the details of the unfolding situation remain unsure, the scale of change can hardly be exaggerated, as energy costs soar around the world.

1073. Signs of the Times

As household energy costs in Britain soar to unprecedented levels with a 38% increase in gas price, and the Government party faces a major defeat in a bye-election, French wine-growers have chartered a 108 year old, three-masted topsail schooner to deliver 50 000 bottles of wine to Dublin.

1074. Turkey's Renewed Importance

The Ottoman Empire of Turkey previously controlled much of the Middle East, apart from Iran, but found itself on the losing side in the First World War. The empire was then broken with the establishment of various Middle East countries with somewhat arbitrary frontiers, partly drawn on the advice of Gertrude Bell, an aristocratic British lady, who enjoyed travelling the tribal lands on camel back. The victors divided the oil rights of the former Turkish empire amongst themselves as one of the spoils of war (see table), although the brave Russians were left out.

	British	French	US	National
Iraq (IPC)	BP	CFP	Exxon, Mobil	Gulbenkian
Kuwait (KOC)	BP		Gulf	
Saudi Arabia (ARAMCO)			Chevron Texaco	
Neutral Zone			Exxon Mobil	
			Getty, Aminoil	

The political division did not however recognise the rights of the Kurds, an ancient people descended from the Medes, who occupy a swath of country from Syria, through S.E. Turkey and northern Iraq, into Iran. They have long sought independence and have been successively suppressed by various regimes, being bombed by Britain in 1920's, Saddam Hussein more recently, and now the Turks.

While Turkey has very little oil itself, it does assume a new importance as a transit country for oil from both the Caspian and Iraq, which are exported from a terminal at Ceyhan on its Mediterranean coast, as well as for the proposed new Nabucco pipeline to transport Middle East gas to Europe.

Turkey joined NATO and furnishes an important US air base at Incirlik, though which pass some 70% of the cargo flights sustaining the military occupation of Iraq.

The Justice and Development Party (AKP) came to power in 2002 and began to exert greater regional influence over a wide area from the Mediterranean to Central Asia including the Caspian and Middle East, with a view to fostering trade. It has strengthened its ties with Iran with which trade has increased eight-fold in recent years and includes an important gas supply contract from the South Pars Field. This has somewhat alienated influential elements in Washington, who would prefer the country to align itself with Israel and oppose Iran. Meanwhile, Europe eyes it as a possible new member of the European Union empire.

It is not yet clear if the recent bombings, with resultant loss of life in Istanbul, were the work of the Kurdish nationalists or other elements with foreign-backing, wishing to see a change of government in the country. But in any event, it is evident that Turkey begins to assume a greater role on the world stage, becoming a candidate for a place on the UN Security Council in 2009-2010.

1075. News from ASPO Australia

Bruce Robinson has submitted the following report on ASPO-AUSTRALIA, which is certainly one of the more active and successful members of the ASPO fraternity. (see www.ASPO-Australia.org.au)

\$8/litre, CSIRO's five-fold petrol price increase scenario.

The release of CSIRO's Future Fuels Forum report on 11th July captured headlines round Australia, with one of its scenarios, the Peak Oil scenario with steep post-peak decline and slow arrival of alternative fuels and technologies, seeing fuel prices rise five-fold by 2018. CSIRO is Australia's highly respected government research organisation.

The release of the economic modelling study finalised many months of work headed by Paul Graham, of CSIRO's Energy Transformed Flagship, involving collaboration with many organisations, including a major oil refiner and fuel distributor, the car manufacturer, General Motors Holden, a national supermarket chain, automobile clubs, biofuel producers, State governments, the Australian Engineers professional body, conservation organisations, and ASPO-Australia. Several ASPO-Australia members attended the forum meetings. Phil Hart of ASPO-Melbourne was the prime contributor, and faced the media at the launch at the GM car factory in Melbourne, having a lot of coverage on TV, press and radio.

Phil welcomed the constructive dialogue that led to this report. *"We have all learnt new things along the way. I have been personally encouraged to hear of the many changes businesses have been making – there are more pro-active changes under way than even I realised. Many forum participants would have choked on a prediction of \$8/litre early last year, but tight supply and the rapid increase in prices since then have given them courage to accept these dramatic model outcomes now. No one can know the precise future of oil prices, but such high figures reflect how hard it is to transform our cities and economies built on cheap oil when we are faced with declining oil production"*

Queensland Oil Vulnerability Task Force Report by ASPO-Australia patron, The Hon. Andrew McNamara, now Queensland's Minister for Sustainability, Climate Change and Innovation, released his report nearly a year ago. One of its recommendations was for a **Queensland Oil Vulnerability Mitigation Strategy**, which is now being prepared.

(<http://www.cabinet.qld.gov.au/MMS/StatementDisplaySingle.aspx?id=56439>)

It will have three broad elements: reducing the consumption of liquid fossil fuels; encouraging the development and use of alternative fuels; and preparing for demographic and regional changes as Queenslanders alter travel, work and living habits in response to rising fuel prices. Mr McNamara said that the strategy could also canvass what options might need to be considered in a 'worst case scenario' of severe international oil shortages.

At the Federal level, the Australian Council of Transport Ministers is preparing a National Transport Strategy, which includes consideration of Climate Change and Energy. Although the State Minister responsible for this section (Western Australia's Alannah MacTiernan) has heard a number of Peak Oil speakers over the last 7 years (including Magoon, Bakhtiari, Skrebowski and Heinberg, as well as local author Brian Fleay), there is sadly no sign at all of urgency in dealing with our oil vulnerability. The Climate Change discussion about the new Federal Government's emission trading scheme is dominated by calls to reduce tax on petrol and to exempt fuel from carbon trading. ASPO-Australia has been advocating that we follow Margaret Thatcher and put Australia on a fuel tax escalator (petrol in Australia is cheap, circa US\$1.50 or 0.95 Euro per litre, due to lower tax levels than most of the developed world).

Oil Depletion messages feature significantly in Australia's Customs Department forward planning. ***Main Trends to 2015: Availability of oil and oil-based fuels will become a critical issue***
http://www.customs.gov.au/webdata/resources/files/strategic_outlook.pdf

Preparation for further sudden oil crises (for instance arising from an attack on Iran) and also determining how to handle transport fuel shortages when Peak Oil hits us. Noting that Australia, like the UK, had wartime petrol rationing until 1950, we suggest a modern electronic card-based equitable tradable petrol allocation scheme rather than leaving the country to the mercy of market forces and "demand destruction". Personal allocations of a base amount at a moderate price, and extra amounts on an increasing taxation scale would be tradable following the Tradable Gasoline Rights strategy proposed by Martin Feldstein of Harvard, previously President Reagan's chief economist. The allocation ideally would be (a) **location dependent** whereby people who live close to a train line or good public transport, would not get as much as people who live in outer suburbs with long distances and poor public transport; (b) **health status dependent** whereby those unable to walk to the bus or train, or ride bicycles would get more than those fit enough to use other transport modes; and (c) **job dependent** whereby those working in vital but perhaps low-paid night-shift jobs in hospitals for instance get more fuel to get to work than those in inessential and environmentally damaging jobs such as delivering bottled water when good drinking water is available from taps.

Oil Vulnerability Research Network: We are promoting a national network of researchers in Universities and elsewhere, to link the many different approaches to the recognition and mitigation of our oil vulnerability and adaptation to future oil shortages. These range from spatial mapping of oil vulnerability in different suburbs of our major cities, to transport and urban planning, and to linking Australia's good record on the frugal use and good management of water in drought times to an analogous approach to petrol and diesel as increasingly scarce and valuable comparable commodities. The "Children and Peak Oil" research being done in Canberra is an example of relevant but unexpected research which could be linked in a network. Ideally, we hope that the oil vulnerability network might extend internationally and cover the many disparate aspects of oil vulnerability assessment, mitigation and adaptation and allow the interchange of information and strategies between opposite numbers in different countries. There is a lot we can all learn from other countries

Links to the above issues are on www.ASPO-Australia.org.au (mostly) or contact Bruce Robinson

1076. An Atlas of Oil and Gas Depletion

This study has now been published and is available for purchase. It reviews the status of depletion in sixty-five countries, which are summed to give regional and world totals. Item 1071, covering Nigeria, is an example taken from the book. Chapters also explain the methods of analysis, the unreliable nature of public data, Non-Conventional Oil and Gas, and the Oil Age in Perspective, placing this remarkable epoch in a wider historical context.

The authors modestly state that the only sure numbers are the page numbers, but the general trends can be presented with confidence. The work provides a framework for analysis, and in a sense, sets a challenge for those with better detailed information to come forward and present it on a country by country basis so that the anomalies can be identified and resolved. In this connection, it is noteworthy that the Oil and Gas Journal now publishes what sounds like a comparable study by Rafael Sandra costing \$4500, entitled *Future Oil & Gas Supply : A Quantitative Analysis*. The International Energy Agency likewise is engaged in a field by field study and plans to publish its new position in the World Energy Outlook in November.

AN ATLAS OF OIL AND GAS DEPLETION

By

C.J.Campbell and Siobhan Heapes

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The price of the book is £110, including UK delivery.

Calendar - Forthcoming Conferences and Meetings

ASPO members and associates [shown in parenthesis] will be addressing the subject of Peak Oil at the following conferences and meetings. Information for inclusion in future newsletters is welcomed.

2008

August 9th - 14th – Geological Conference, **Oslo**, Norway [Campbell, Laherèrre]

Sept. 21-23 – ASPO-USA Conference, **Sacramento**, California

Oct 20th-21st - 7th International ASPO Conference, **Barcelona**, Spain [ASPO-SPAIN]

NOTES

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Multi-Science Publishing Co. (Sciencem@hotmail.com) wishes to advise that copies of the book *Oil Crisis* by C.J.Campbell, providing background reading, are still available for purchase.

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A privately printed booklet entitled *Living through the Energy Crisis* by C.J.Campbell and Graham Strouts is available from zone5.org (price €7 plus postage)