Submission
No 92

# INQUIRY INTO CROSS CITY TUNNEL

Organisation:
Name: Mr Matt Mushalik
Telephone:
Date Received: 26/05/2006

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Theme:

Summary

Matt Mushalik (MIEAust)

To the
Cross City Tunnel Inquiry

JSC CROSS CITY TUNNEL
29 MAY 2006
RECEIVED

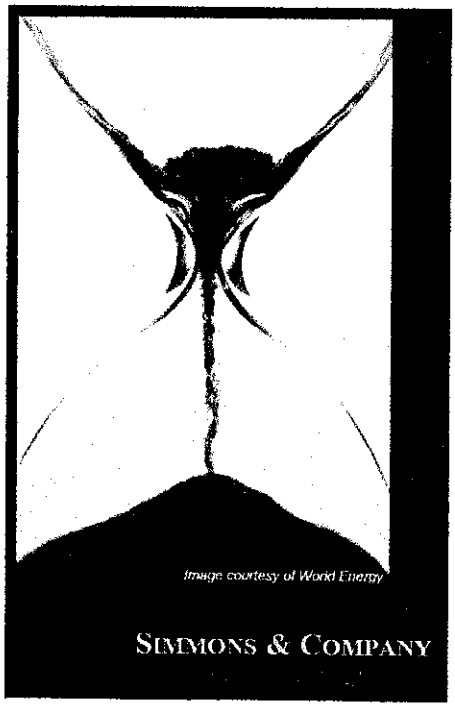
Re: Extension of TOR on
Lane Cove Tunnel

Mr. Chairman,

My submission #8 to the Cross City Tunnel Inquiry - in which I highlighted specific peak oil warnings that were ignored by tunnel planners - equally applies to the Lane Cove Tunnel. The concession deed was signed one year later in December 2003.

I put before the Inquiry that instead of quarreling about the location of exit ramps, wrongly planned left or right turns, closed lanes, filtration issues and other administrative problems (as happened in the case of the CCT) the committee should rather focus on how to use the Lane Cove Tunnel and with it the M2, for public transport.

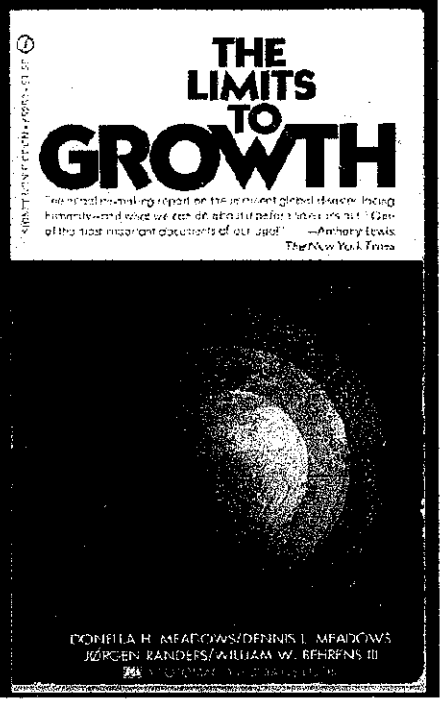
Compared to the CCT, one more year of peak oil warnings went unheeded by both government departments and consultants. Representative for the level of peak oil knowledge easily and freely available on the internet from experts in the year 2003 was the ASPO (Association for the Study of Peak Oil and Gas www.peakoil.net ) conference in Paris in May 2003 (programme see Appendix attached). Investment Banker Matthew Simmons warned all participants that time is running out to prepare for peak oil (plan B):



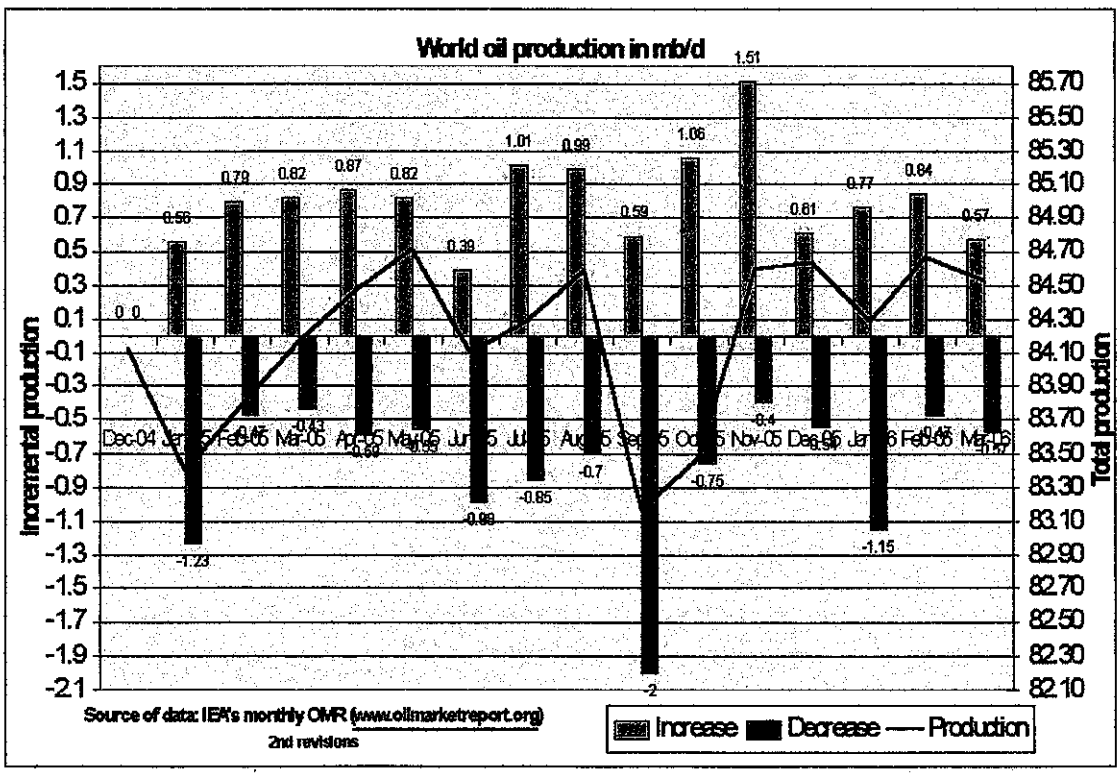
He revisited the Limits to Growth issue with following slide:

## The Pessimist/Optimist Debate Started Too Late

- Club of Rome humanists were right to raise "Limits To Growth" issues in late 1960s.
- Then, time was on the side of preparing "Plan B."
- They, like Dr. Hubbert, got dismissed as "Chicken Little" or "the Boy who called Wolf."
- Campbell, Laherrere, Ivanhoe, Deffeyes, Youngquist, Bakhtiari, et. al. took up the cause but got scorned too often.
- But at least the debate began, once again.
- Was it "too little, too late?"

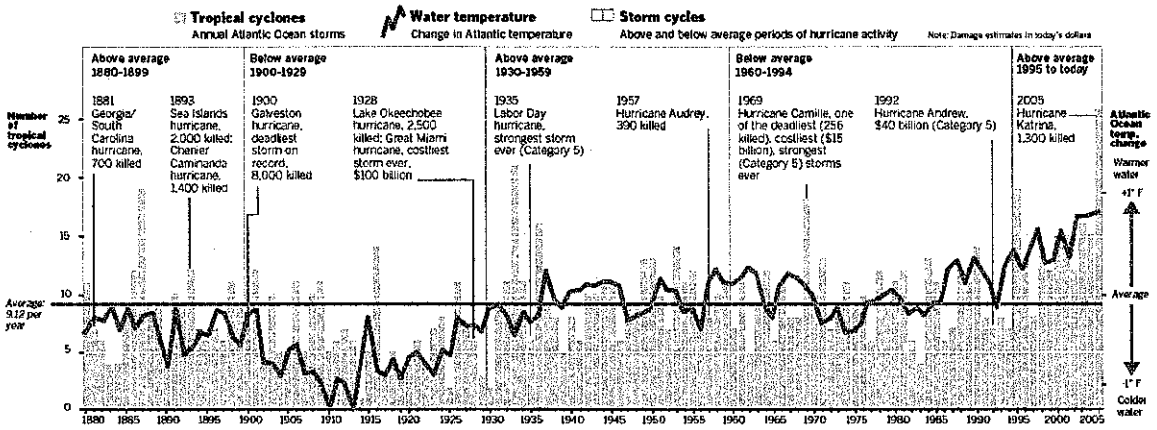



In the last 3 years, his warnings are vindicated by absolutely tight oil supplies. My analysis of the last 15 months (Jan 05 – Mar 06) shows following situation:

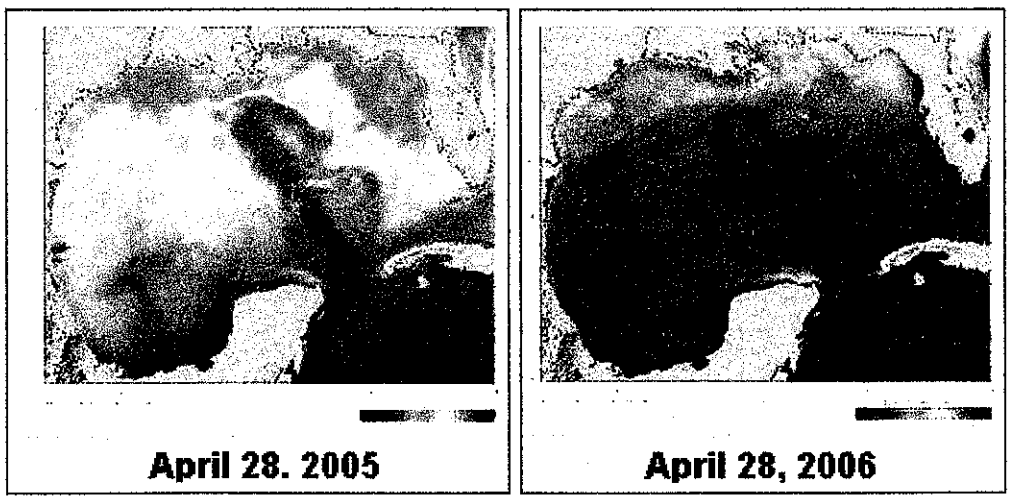


The graph, which is based on data from the IEA's Monthly Oil Market Report, clearly shows:

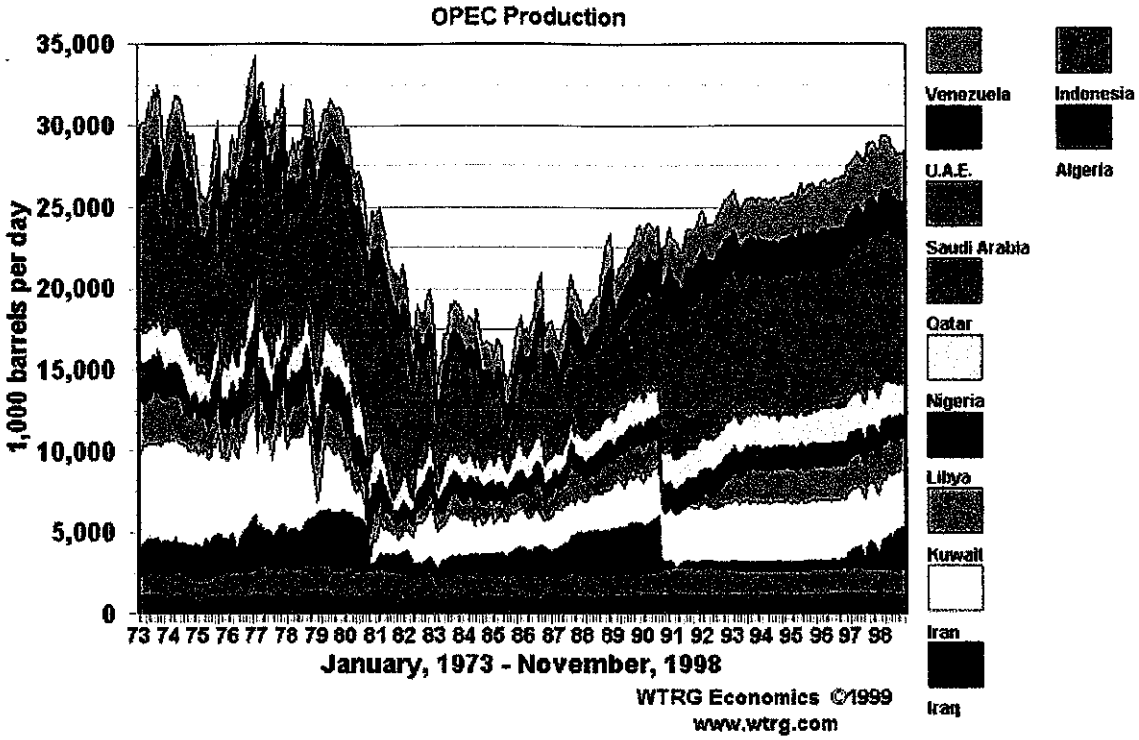
a) the net outcome in production is the difference between two often equally sized columns of increases and decreases
b) net results show first signs of randomness
c) there is no discernible, continuous upward trend
d) capacity from new oil fields often disappears in decline from other fields with little net gain
e) offshore development is challenging; there are many technical delays, now impacted upon by stronger and more frequent hurricanes made more likely by global warming. The following graph shows the number of tropical cyclones from 1880 to 2005 more or less following the water temperature:
f)




Oil engineers as well as weather forecasters in the Gulf of Mexico expect another dangerous and disruptive hurricane season in 2006, starting in June. Water temperatures in April were already higher than last year.



The world has never been in this tight oil supply situation. During the 1st Iraq war in 1991, Saudi Arabia was still able to compensate for a complete loss of Iraqi production as shown in the following graph:




Source: www.oildrum.com

This swing role has disappeared as Saudi fields have reached a production plateau. After hurricane Katrina, strategic oil reserves in both the US and Europe had to be mobilized to fill the supply gap from the GOM area. Peak oil will happen when most of the giant oil fields go into decline. No miracle in new oil fields can then offset these declines.

We have now the first SMH head lines like:

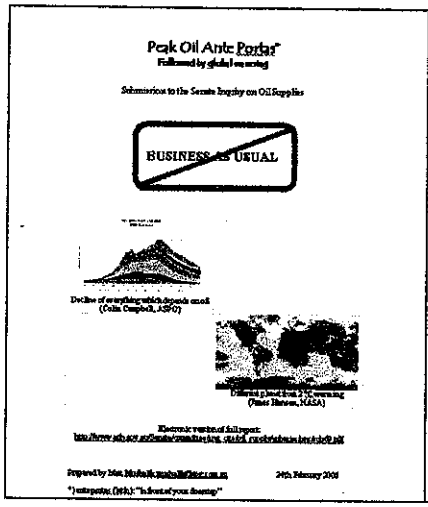
# Petrol prices hit car sales and toll roads

By John Garnaut and Jordan Baker May 23, 2006

For those who still do not understand peak oil, I refer to my submission to the Senate Inquiry on oil supplies entitled "Peak Oil Ante Portas, followed by global warming" available online at:

http://www.aph.gov.au/Senate/committee/rrat_ctte/oil_supply/submissions/sub69.pdf

It contains 16 specific recommendations for immediate action.




Cover of my 30-page submission to the Senate Inquiry (left). No more business as usual. It is one of the very few submissions linking peak oil with global warming, 2 events which will be controlled by immutable physical laws (oil depletion laws, atmospheric laws), not by wishful thinking.

Nuclear power plans with the objective centered on hydrogen cars are dreams. Even if all waste and other problems are solved nuclear power plants would first have to replace coal fired power plants, which need to be decommissioned to reduce green house gas emissions.

Local oil supplies will fall off a cliff after 2007 as best described by Geoscience Australia in submission 127 in following graph:

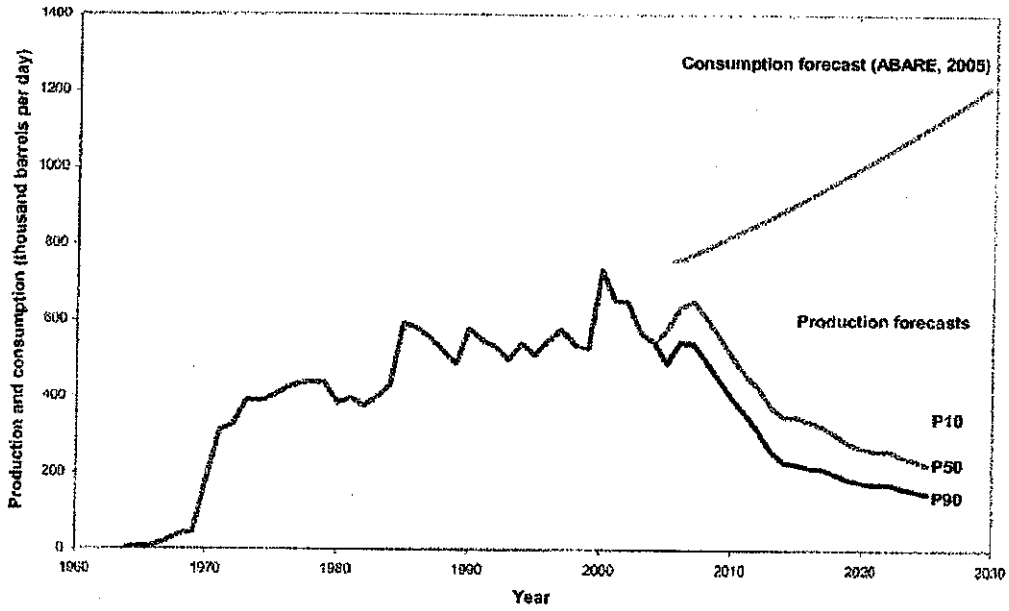
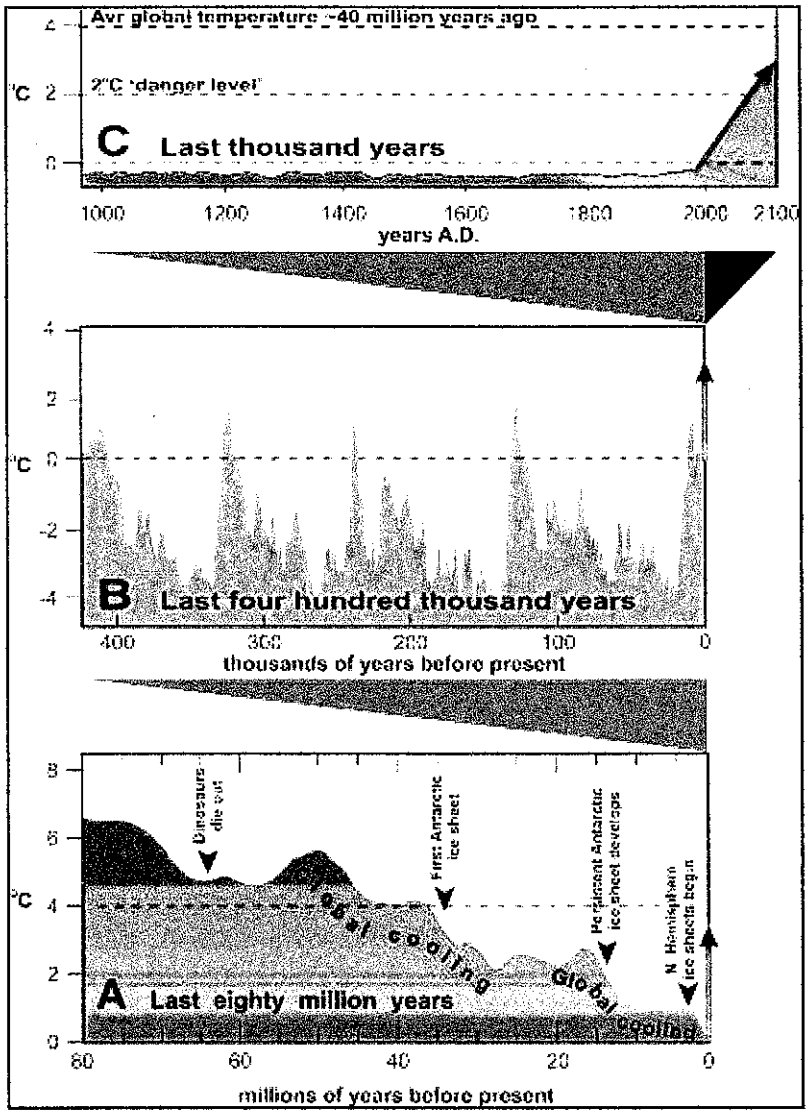



*Figure 6: Forecast Australian consumption of petroleum products (excluding LPG) and forecast of Australian crude oil plus condensate production rate at various probability levels*

This submission will add another absolutely urgent reason why car traffic must be REDUCED and REPLACED by public transport: green house gas emissions from all vehicles.

We have read that scientists have calculated that global temperatures may increase by 2-3 degrees if we continue business as usual, that is more freeways, more car and truck traffic, increasing energy consumption from coal fired power plants, more coal exports etc. That would be devastating. Climatologist James Hansen, director of the NASA Goddard Institute of Space Studies warns us such increases would mean a different planet Earth.

So let us look where we are:




We can clearly see in A that we would be heading towards a tropical hot house in which Dinosaurs once lived. The global cooling in the last 50 million years ended in a period which allowed human civilization to take hold.

We learn from this graph:

**Our current civilisation, our current economy are built on our current climate. Global warming means destruction of our economy. Leaders who make wrong decisions will be held accountable by history.**
**We must reduce green house gas emissions NOW.**
**A new business model based on renewable energies must be put in place.**

A summary of global warming facts is shown on the following page.

## Is there still time to rescue our climate?

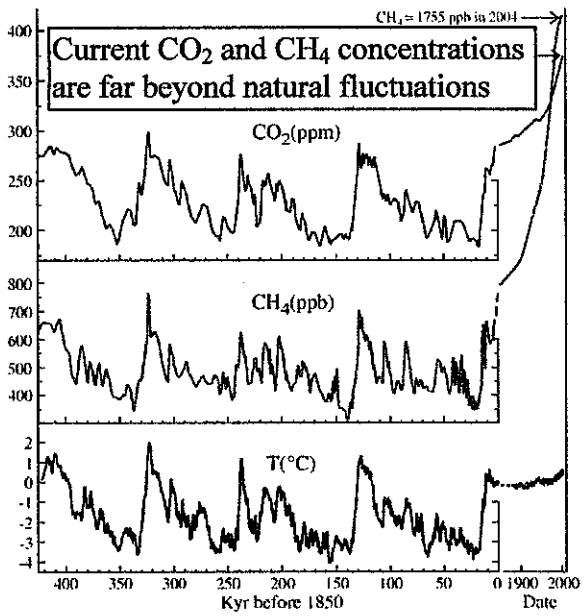
**Read J. Hansen's http://www.columbia.edu/%7Ejeh1/newschool_text_and_slides.pdf**

(1) Green house gas (GHG) emissions from burning fossil fuels (oil, coal, gas) since the industrial revolution are now **IRREVERSIBLY ACCUMULATING** in oceans (40%) (making them acid) and in the atmosphere (60%) heating up an already warm planet Earth. An increase in temperatures of 0.75 °C since 1880 has already been measured. Due to the time lag inherent in our climate system (warming up of oceans), a further 0.6 °C is unavoidably in the pipeline.

(2) Planet Earth is out of energy balance with space at the rate of 1 Watt/$m^2$

(3) The Earth will warm up until it reaches a new equilibrium at a higher temperature when a warmer planet radiates more heat back into space. The new, higher equilibrium temperature depends on the future concentration of GHG. The more GHG we put in the atmosphere, the warmer it will get.

(4) We are now in the Holocene, an interglacial period, which lasted for about 10,000 years with a comparatively stable climate and sea level. The preceding ice age, at its peak 20,000 years ago, was around 5 °C cooler than now. Sea levels were 110 m lower. The previous interglacial period was 1 °C warmer and sea levels 5-6 m higher than at present




↑Antarctic ice core data (420 K years)

(5) Carbon dioxide concentrations and temperatures are highly correlated (left)

(6) Temperature changes between ice ages and interglacial periods are caused by slight changes in the Earth's orbit. Cooling is slow and warming is rapid. Increase in temperature by 2-3 °C would lead us into a hot, unknown world and sea levels 25 ± 10 m higher than today.

(7) In order to avoid such sea level rises and other disasters like crop failures, water shortages, stronger hurricanes, floods etc. we must reduce annual GHG emissions to 60 – 80% of present levels by 2050, that is –1.5% pa.

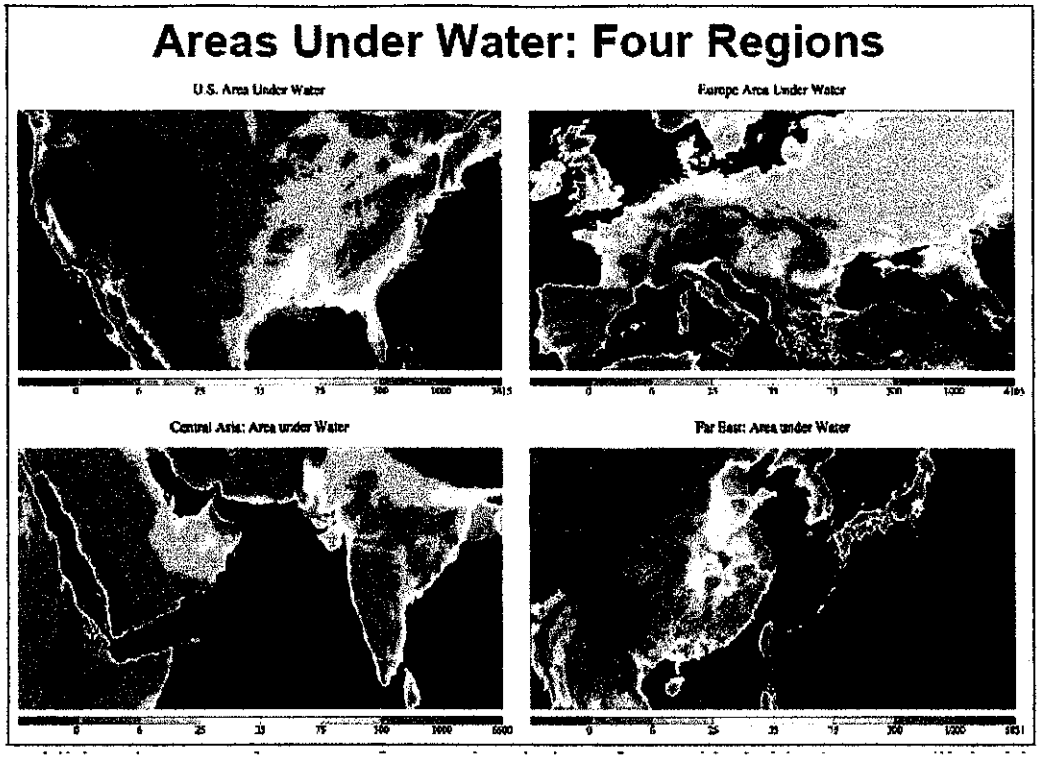
(8) This alternative scenario can stabilize the Earth's climate, but this strategy is currently not being pursued

(9) **Another 10 years of business as usual** with GHG increasing at the current rate of 2% pa and an alternative scenario at a later stage will no longer be able to keep temperature increases under 1 °C . Action is therefore needed NOW, not later

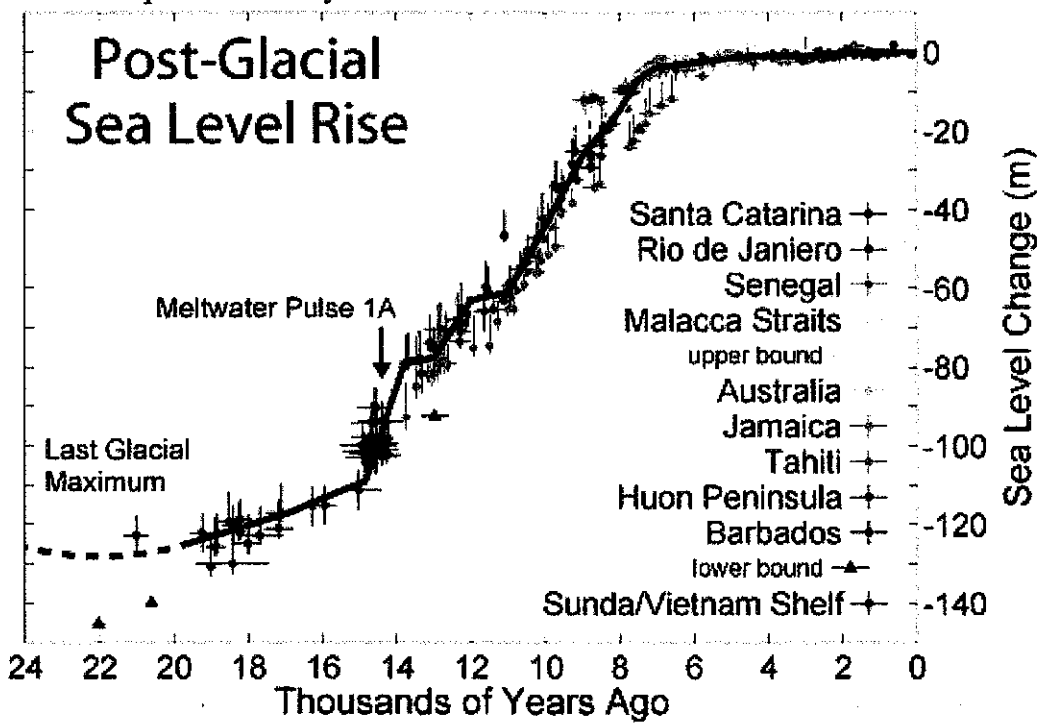
(10) The public must understand these facts and put as much pressure on politicians as is needed to overcome shortsighted, vested interests of the fossil fuel industry

(11) Man-made climate forcings are of such a magnitude that another ice age cannot occur unless the human race goes extinct

While we are very aware of global warming causing extinction of species (Tim Flannery's "The Weather Makers" ISBN 1-920885-84-6), more El Nino events and droughts, bushfires, water shortages and crop destruction by stronger cyclones, very few pay attention to sea level rises right along our coast and in our Harbour. James Hansen has published some maps from 4 continents, albeit excluding Australia. Note how large areas of China will be flooded.




And if we think that this might happen in 100s or 1000s of years, we may make a big mistake. There were meltwater pulse events in the past when sea levels rose by 1 m each 20 years over a period of 400 years:



First signs that ice sheets start to disintegrate can be seen on this photo showing a Greenland glacier discharging ice bergs into the atlantic ocean, thereby weakening the Gulf Stream which normally transports equatorial excess heat to Europe and creating a mild climate there.

**We must reduce green house gas emissions by 60-80% by 2050, that is by 1.5% pa**

Though one day very serious questions will be asked why the NSW government went ahead with various toll-way projects despite

(1) high risks in relation to future oil supplies (known from 1995 onwards)
(2) the lack of alternative, renewable fuels
(3) the global warming contribution from vehicle emissions (known from 2001 onwards)

it is futile now to start a blame game. We must look ahead and the only solution to rescue the Lane Cove Tunnel is to investigate how it can be used for public transport.

The problem here is that car traffic must be reduced long before peak oil and global warming manifest themselves as physical problems (oil shortages, climatic damages).

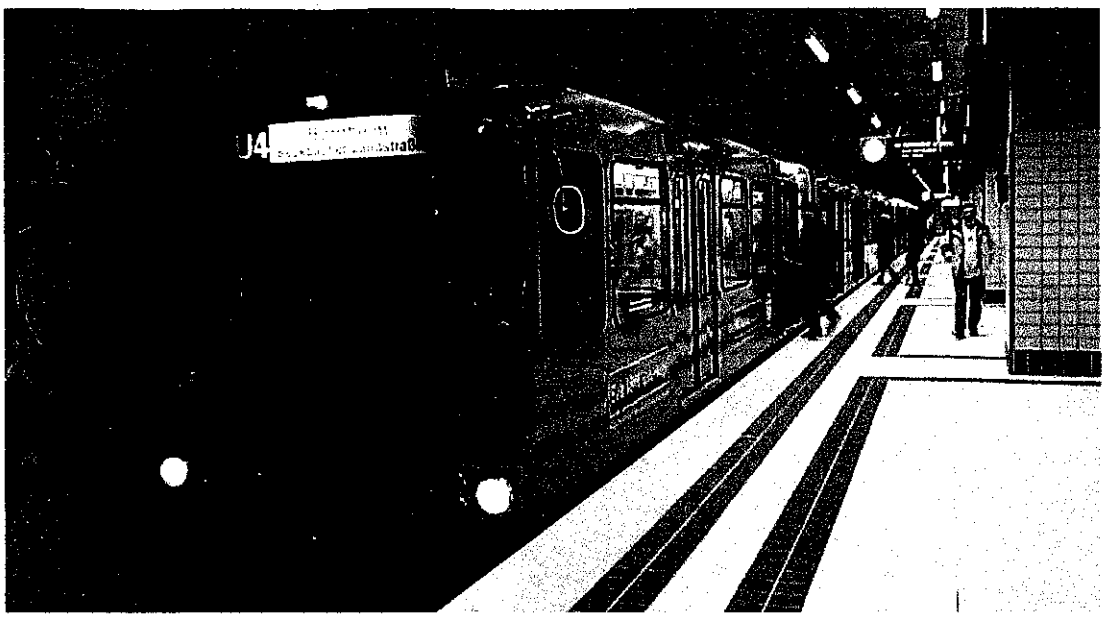
For the benefit of the CCT operator, car lanes were closed in William street. This concept of road closures and/or reduction in the number of car lanes is used in European cities for traffic calming, to create car-free areas and bring commuters to use public transport which is provided by building metro tunnels and/or light rail systems.

It is high time that Sydney adopts this strategy. Transport Minister Watkins MP is right that a light rail in the CBD alone is of limited use. It must be extended far into the outer suburbs. This can be quickly done only by using existing road and toll-way corridors. Light rail on toll-ways is in the interest of all contributors to super funds who have invested in oil dependent infrastructure.

Light rail is much more than just trams. Europeans have developed the concept of "tram trains" with double and triple traction. Frankfurt runs 4 units in peak hour with one driver, forming 100 m long trains with a carrying capacity of 400 passengers

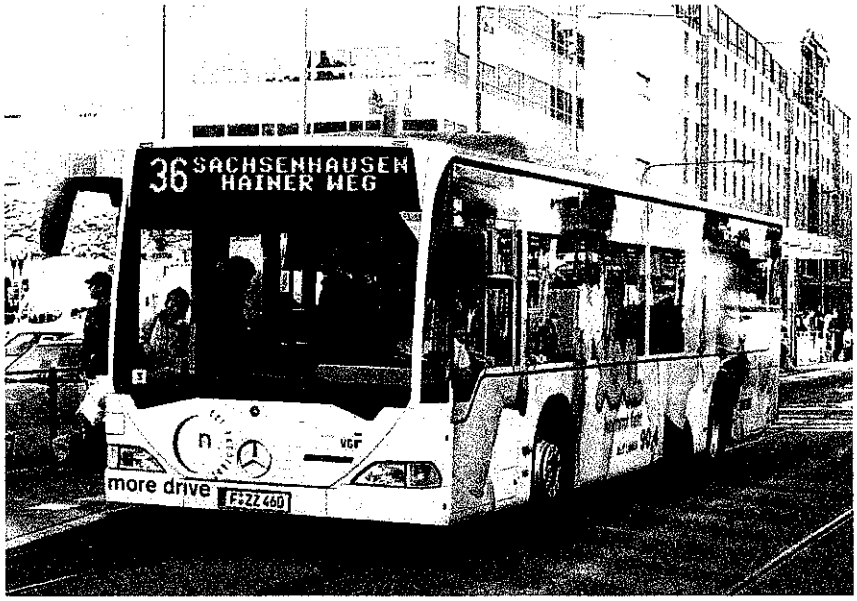
In the outer suburbs, they connect to feeder buses on the same platform:

In the inner city, they use tunnels:



Unfortunately, there is no longer sufficient time before peak oil to build new rail tunnels under the Sydney CBD. One cannot make up 20-30 years public transport neglect in just a few years. The only solution is to convert car lanes to light rail track as shown here:

The system can be made as flexible as planners can imagine. Buses can use light rail/tram tracks too, as shown here. Only political will is needed.




In Australia, Perth is already far ahead of Sydney. Prof. Newman, who was NSW Sustainability Commissioner, has pushed through 2 rail lines on the median strip of freeways, including short tunnel sections in the CBD. A similar solution must be found for Sydney.

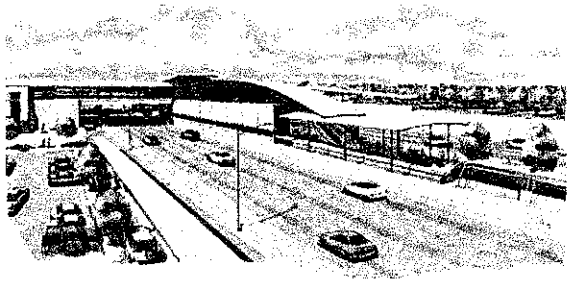
Source: http://www.engaust.com.au/magazines/ea/students_ea_online/features_0904.html

It is incomprehensible that Prof. Newman's services were discontinued. This ignorance will take terrible revenge when peak oil hits.

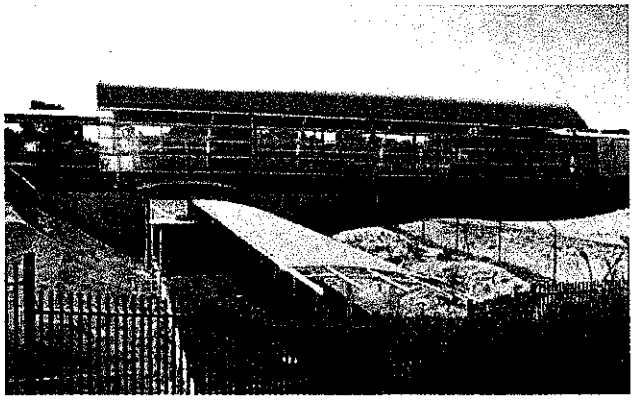
Here are some images from http://www.newmetrorail.wa.gov.au

Emu on Mitchell freeway

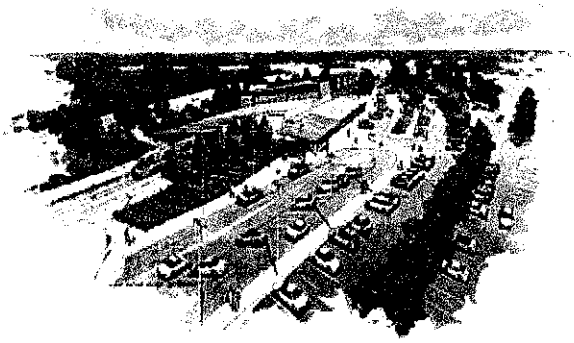

Clarkson station



Murdoch interchange



Currambine station



Park & ride Warnbro

These examples show more than 1,000 words what has to be done. Sydney's existing toll-way deeds will all have to be re-negotiated. If this is not done now voluntarily, peak oil will nul and void them anyway whether a force majeure can be claimed or not.

Prepared by Matt Mushalik
**Civil Engineer**
**Town & Regional Planner**
**Peak Oil Adviser**

Member of www.ecotransit.org www.Sydneypeakoil.com www.aspo-australia.org.au

# THE ASSOCIATION FOR THE STUDY OF PEAK OIL&GAS

## Proceedings of the

# 2nd International Workshop On Oil Depletion

**Paris, France, May 26-27 2003**

Organised by the Association for the Study of Peak Oil&Gas

The workshop was held at the Institut Francais du Pétrole , Rueil Malmaison, Paris.

**If information and other material from this proceeding is used the following reference shoul be given:**
**Proceedings of the 2nd International Workshop on Oil Depletion, Paris, France, May 26-27 2003, Edited by K. Aleklett, C. Campbell and J. Meyer, www.peakoil.net/iwood2003 .**

(This page will be updated when we get new PowerPoint presentations and papers.)

Abstracts in word.doc (use Explorer for PowerPoint presentations)

| **PROGRAMME** | **Abst-ract** | **Power Point** | **Paper** |
|---|---|---|---|
| Monday 26th May | | | |
| **SESSION 1 Chair: Mr Pierre-René Bauquis** | | | |
| **Opening Address**<br>***Olivier Appert**, Chairman,*<br>*Institut Français du Pétrole, France* | Yes | | |
| **Resource Wars**<br>***Michael Klare**, Professor of Peace & World Security Studies*<br>*Hampshire College, USA* | Yes | | |
| **The War for Oil**<br>*BBC Film* | | | |
| **SESSION 2 Chair: Mr Jean Laherrère** | | | |
| **A Realistic View of Long-Term Middle East Production Capacity**<br>***Ali Samsam Bakhtiari** Corporate Planning Directorate,*<br>*National Iranian Oil Company, Iran* | Yes | | |
| **Russian Oil Reserves, Future Exploration Potential & Production Capacity**<br>***Ray Leonard**, Vice President, Exploration & New Ventures*<br>*YUKOS Oil Company, Russia* | Yes | Yes | |
| **The World's Endowment with Natural Gas:** | Yes | | |

| | | | |
|---|---|---|---|
| **The Perspective from BGR's New Energy Study**<br>***J. Peter Gerling,*** *Head of the Energy Resources Section*<br>*Federal Institute for Geosciences and Natural Resources (BGR), Germany* | | | |
| **SESSION 3 Chair: Dr Roger Bentley** | | | |
| **Modelling Oil Production, Energy Consumption, Population & Economy**<br>***Jean Laherrère,*** *Former Deputy Exploration Manager,*<br>*Total Oil Company, France* | Yes | | |
| **The Physical Modelling of Future World Energy Demand**<br>***Malcolm Slesser,*** *Chairman,*<br>*Resource Use Institute, UK* | Yes | | Yes |
| **Energy Supply Conditions and Oil Price Regime**<br>***Jean-Marie Bourdaire,*** *Director of Studies,*<br>*World Energy Council, UK* | Yes | Yes | |
| **SESSION 4 Chair: Dr Peter Gerling** | | | |
| **The North Sea – A Victim of Depletion**<br>*Chris Skrebowski Editor,*<br>*Petroleum Review, Institute of Petroleum, UK* | Yes | | |
| **Modelling of Remaining Reserves In a Mature Basin**<br>***Vincent Lepez*** *Assistant Professor,*<br>*IFP-School, France* | Yes | | |
| **Oil Prophets: Looking at World Oil Studies Over Time**<br>***Steve Andrews*** *Energy Consultant,*<br>*USA* | Yes | | Yes |
| Tuesday 27th May | | | |
| **SESSION 5 Chair: Dr Werner Zittel** | | | |
| **How to Make the World Aware that the Party is Over**<br>***Kjell Aleklett*** *Professor,*<br>*Uppsala University, Sweden* | Yes | Yes | |
| **Will 2000 Turn Out to be the Peak, Followed by Wildly Oscillating Oil Prices?**<br>***Kenneth Deffeyes*** *Professor Emeritus,*<br>*Geosciences, Princeton University, USA* | Yes | | |
| **The 2003 Update of the ASPO Oil & Gas Depletion Model**<br>***Colin Campbell,*** *Dr and* ***Anders Sivertsson*** *, student*<br>*ASPO & Uppsala University, Sweden* | Yes | | |
| **SESSION 6 Chair: Prof Kjell Aleklett** | | | |
| **Options for Future Transport Fuels**<br>***Jörg Wind*** *Senior Manager,*<br>*Research & Technology, DaimlerChrysler, Germany* | Yes | | |
| **Non-OPEC Oil Supply: Economics and Energy Policy Options** | Yes | | |

| | | | |
|---|---|---|---|
| ***Maarten van Mourik & Richard Shepherd***<br>*Economist & Journalist, France* | | | |
| **What Energy Sources for Transportation in the 21st Century?**<br>***Pierre-René Bauquis*** *Associate Professor,*<br>*IFP–School, France* | Yes | | |
| **SESSION 7 Chair: Prof Rui Rosa** | | | |
| **The Contribution of Technology: "Creating" Reserves**<br>***Gérard Friès*** *Executive Vice President,*<br>*Institut Français du Pétrole, France* | Yes | | |
| **Extra Heavy Oil and Bitumen: The Challenges of Enhanced Recovery**<br>***François Cupcic***<br>*TotalFinaElf Oil Company, France* | Yes | | |
| **Status of Renewable Energy in Europe and Its Role in a Renewable Transport Fuel Strategy**<br>***Werner Zittel***<br>*L-B-Systemtechnik GmbH, Germany* | Yes | Yes | |
| **Property Rights for the Global Commons – Feudal or Democratic?**<br>***Paul Metz*** *Managing Consultant,*<br>*INTEGeR... consult, The Netherlands* | Yes | | |
| **SESSION 8 Chair: Dr Colin Campbell** | | | |
| **The U.S. Reaction to World Oil and Gas Depletion**<br>***Matthew Simmons*** *Chairman & Chief Executive Officer*<br>*Simmons & Company International, USA [via video link]* | Yes | | |
| **Risks and Solutions to Ireland's Energy Supply**<br>***David Callaghan***<br>*Sea Energy Ltd, Ireland* | Yes | Yes | |
| **Closing Remarks**<br>***Colin J. Campbell****, Dr*<br>*ASPO and Uppsala University* | | | |

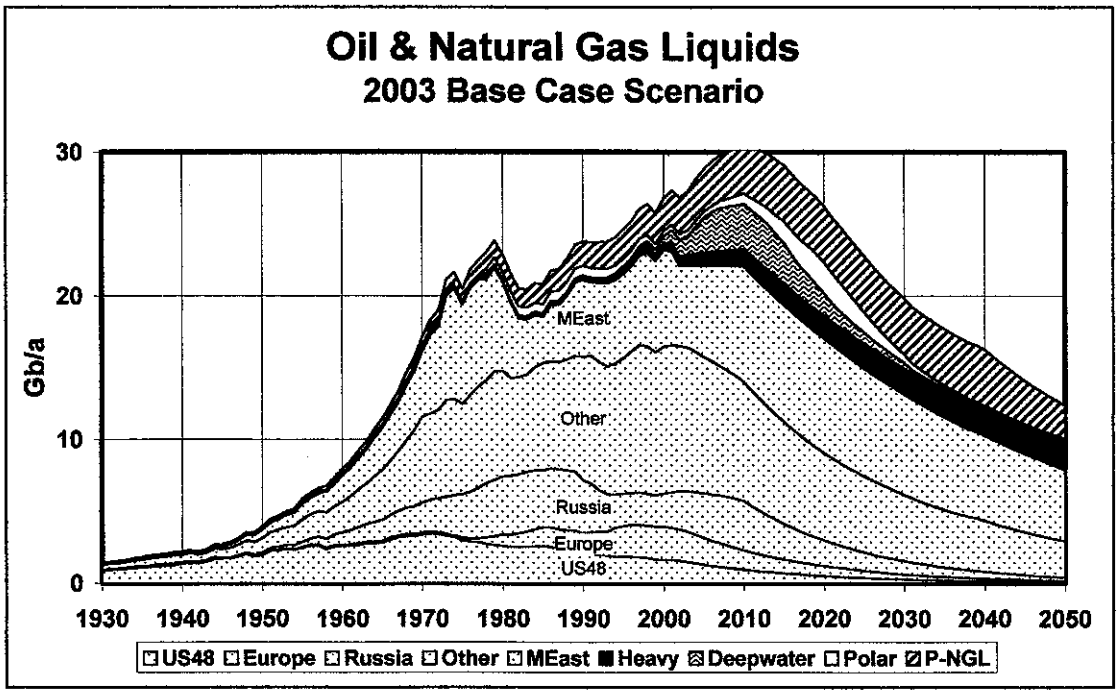



**Figure 12 : Forecast production of all hydrocarbons**

http://www.peakoil.net/iwood2003/paper/CampbellPaper.doc

## The Real Issue: Peaking Is Not Running Dry

- Debate on when oil supply might peak has been extremely controversial.
- Optimists argue the issue is silly or years away.
- Their support: It has never happened and too often predicted.
- Each time the future looks bleak always darkest before dawn.
- Undiscovered reserves does not mean they are not there.
- Oil and gas resources are genuinely non-renewable.
- Using 28 billion barrels a year is a lot.
- Peaking is different than running out.

SIMMONS & COMPANY

http://www.peakoil.net/iwood2003/abstracts/SimmonsPresentations.pdf

# A REALISTIC VIEW OF LONG-TERM MIDDLE EAST PRODUCTION CAPACITY

**A paper presented by A.M. Samsam Bakhtiari at the**
**ASPO Second International Workshop on Oil Depletion**
**(Rueil, France --- May 26/27, 2003)**

## ABSTRACT

**The Middle East is a unique landmass bridging the continents of Europe, Africa and Asia. It now consists of fifteen major countries and one neutral zone. Four of these countries (Afghanistan, Israel, Jordan and Lebanon) are practically devoid of commercial oil resources. And the other eleven jointly control oil reserves estimated by Dr. Colin Campbell at 805 bnb (42% of world total) --- broken down into 758 bnb discovered and 47 bnb yet-to-find. These eleven countries, which produced on average 20.8 mb/d and 19.3 mb/d in 2001 and 2002 respectively, can be subdivided into three groups:**

- **(i) the low producers (4 countries)**
- **(ii) the mid-size producers (4 countries) and**
- **(iii) the three large producers (Iran, Iraq and Saudi Arabia)**

**In order to investigate the Middle East's long-term production capacity, the forecasts and scenarios developed by the following experts or institutions were reviewed:**

- **(a) Dr. Campbell**
- **(b) the major international institutions (IEA,EIA,OPEC)**
- **(c) the major oil companies**
- **(d) the major international banks**
- **(e) the specialised press**
- **(f) prominent economists and consultants**
- **(g) simulations of the 'World Oil Production Capacity' (WOCAP) model**

**The most significant results were the predictions of Dr. Campbell, the Deutsche Bank and the WOCAP model simulations. All three forecasts show Middle Eastern oil output plateauing during the present decade before peaking and then ramping down during the next decade. Relevant results for all three sets are duly presented and analysed. All in all, the Middle East which produces nearly a third of global crude oil, will continue to play a major role on the global oil stage. With time, that role can only tend to become more predominant.**

**However, although the region's oil reserves represent over 40% of global reserves and roughly two-thirds of proved reserves, there are limits to future output thereof.**

**For those believing that "the sky's the limit" for Middle East oil, there is to be some shattering surprises over the next decade.**

http://www.peakoil.net/iwood2003/abstracts/BakhtiariPaper.doc