

# ASPO-Australia

Australian Association for the Study of Peak Oil & Gas

[www.ASPO-Australia.org.au](http://www.ASPO-Australia.org.au)

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Committee Secretary  
Senate Rural and Regional Affairs and Transport Committee  
Department of the Senate  
Parliament House  
Canberra ACT 2600  
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27<sup>th</sup> February 2006

**RE: Inquiry into Australia's future oil supply and alternative transport fuels**

Dear Sir of Madam,

Please find attached a submission to the above Inquiry on behalf of ASPO Australia (Australian Association for the Study of Peak Oil and Gas). This submission addresses the first of the points in the terms of reference: *projections of oil production and demand in Australia and globally and the implications for availability and pricing of transport fuels in Australia.*

Bruce Robinson, our convenor, will be forwarding other submissions from ASPO Australia and its working groups.

Yours faithfully,

Dr Sheridan Mayo

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## Submission to the Senate Inquiry into Australia's future oil supply and alternative transport fuels

From: Dr Sheridan Mayo, Deputy Convenor, ASPO Australia

This submission addresses the first of the points in the terms of reference: *projections of oil production and demand in Australia and globally and the implications for availability and pricing of transport fuels in Australia.*

### Summary:

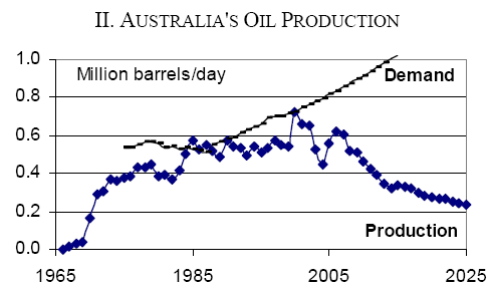
- **Australia already imports 30% of its oil. Our dependence on imports will continue to increase as the gap widens between our growing consumption and our declining domestic supplies of oil.**
- **Worldwide consumption of oil is growing rapidly, driven in part by the rapid industrialisation of China and India, while annual oil discoveries have declined to well below the rate of consumption.**
- **A number of independent academics, and energy analysts have concluded that worldwide annual oil production may soon reach a peak, known as “peak oil”, after which it will begin to decline. This is likely to occur some time between 2010-2015.**
- **More optimistic estimates by the International Energy Agency (IEA) have reassured governments in the past, however, the credibility of these optimistic projections are now being challenged from a number of quarters.**
- **Prudent risk management demands that we take the risk of global peak oil seriously despite the remaining uncertainties. The cost of preparing for peak oil too late is vastly greater than the cost of preparing too early.**

*“ten-year data demonstrate that it is no longer appropriate to accept glib demand forecasts from oil companies, financial institutions and governments that predict, with wishful thinking, ever-growing demand levels, contrary to observations on oil supply. Suggestions that oil consumption will grow to up to 120 mm bbls per day by 2020 and that automobile and airline traffic will increase at extraordinary rates are futile and damaging to policy makers. Such forecasts, divorced from reality, fail to take account of tight supply conditions and rising prices. We will be unable to produce oil at these rates without unbelievable step changes in technology. After 2010, and for periods before this, oil supply limitations and prices will seriously subdue energy demand unless suitable liquid alternatives are developed.”* (commentary on Energyfiles/Douglas-Westwood report *Oil and Gas 2006 – Global 10 year projection* by Energyfiles Director and lead analyst Dr Michael R. Smith)

In the financial year 2004-2005 Australia imported nearly 30% of the oil it consumed and this proportion will increase in future. The graph to the right shows growth in oil consumption (black line) together with forecast domestic oil production from Geoscience Australia (in blue). The gap between consumption and production will widen such that we will be importing 50% of our oil by 2010, and importing the majority of our oil by 2020.

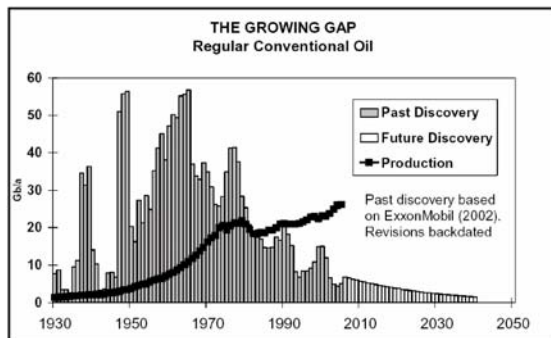
Australia will therefore be increasingly dependent on worldwide oil supplies.

The growth in worldwide oil consumption has accelerated in recent years due to the rapid industrialisation of China and India. This growth has eaten up the spare capacity in oil production traditionally maintained by the OPEC oil producers. In the past this spare capacity meant OPEC could open up the taps to meet surges in demand for oil, but now they are producing flat out and only Saudi Arabia claims to have some spare capacity remaining. This makes the world much more vulnerable to oil shocks and has led to high oil prices. When



disaster or war disrupts oil production in one location it is much harder to make up that loss with increased production from elsewhere.

While global oil consumption is growing, oil discoveries have been dwindling. Annual global oil discoveries peaked in the 1960s and have been in decline ever since (see figure left).



Since the 1980's less oil has been found each year than has been consumed, and the gap between the two is growing. The world is no longer living on its oil "income" (i.e. discoveries) but is effectively consuming its oil "capital" in the form of reserves discovered decades ago. The consequence of this, as observed by Exxon and Chevron amongst others, is that the age of cheap, easy-to-find oil is over, and that oil will be more costly, more difficult to find and extract, and will increasingly

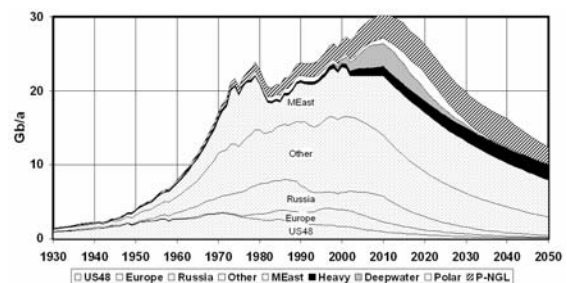
consist of less desirable heavy, sour, and unconventional resources.

In individual oil producing regions the peak and decline in oil discoveries has been followed a number of years later by a peak and decline in oil production. The USA's oil discoveries peaked in the 1930s and production peaked in 1970, likewise the North Sea's discoveries peaked in the 1970's and production from this region peaked in 2000. Global oil production is expected to follow a similar pattern.

A number of analysts have made global oil production forecasts based on worldwide oil production histories, reserves, and probable discoveries. Many such forecasts indicate the peak in global oil production will occur between 2006 and 2020. Below right is a table showing the ranges of dates in which recent forecasters predict peak will occur, and a graph of forecast production from ASPO who predict that production will peak in 2010.

While there is a range of forecasts for the date of the global peak, there is growing consensus that the peak of oil production in non-OPEC countries will occur within 2010-2015. The more optimistic projections for global supply (such as those of the IEA) therefore depend on the OPEC countries massively increasing production, not only to meet increasing demand, but also to offset declining oil production from outside OPEC. Many analysts are sceptical that OPEC can deliver, including senior figures within OPEC itself such as Sadad Al Hussein, a former vice-president of Saudi Aramco, who expects global oil production to reach its maximum by 2015. It is certain that existing OPEC plans to expand production come nowhere near meeting what the IEA say will be required. These observations lend credibility to forecasts of an earlier oil peak, and have led to critiques of over-optimistic forecasts by the IEA and USGS.

Peak year range	Forecasters
now until 2010	Deffeyes, Ivanhoe, ASPO, Bakhtiari, Skrebowski (ODAC)
2011-2015	IEA(1998), Laherrere, Smith, Access Economics, Douglas-Westwood Consultants, JCF consultants, IEA (2004) (low resource case)
2016-2020	Edwards, Bauquis
2021+	IEA(2000), EIA, Shell, IEA (2004) (reference scenario)



A study for the US Dept of Energy by Robert Hirsch et al, (2005) showed that preparation for peak oil would need to be started 15 years ahead of the peak occurring in order to avoid economic disruption. If the more pessimistic forecasts are correct then we may not even have this long to prepare. The consequences of reaching peak without mitigation measures in place

include high and volatile oil prices impacting on business and the economy; fuel poverty among the poor; international tensions and competition over dwindling reserves; and actual fuel shortages. Prior policy-making and development based on the assumption of cheap plentiful fuel will add to these problems by creating a legacy of land-use patterns and infrastructure ill-suited to a situation of fuel scarcity.

As the Hirsch report pointed out, the cost of preparing for peak oil too late is vastly greater than the cost of preparing too early. Despite the uncertainties, prudent risk management demands that we look at the oil supply problems that are looming ahead and prepare well ahead of time.

### **Background Reading:**

Oil depletion: the crucial factor in transport planning. Robinson and Powrie, Australasian Transport Research Forum, Adelaide, October 2004. This paper puts peak oil into an Australian context.

( <http://www.aspo-australia.org.au//References/ATRF-57-Robinson-2-refs.pdf> )

Peaking of World Oil Production: Impacts, Mitigation & Risk Management, Robert Hirsch et al, SAIC (for the US DoE) February 2005,

[http://www.netl.doe.gov/publications/others/pdf/Oil\\_Peaking\\_NETL.pdf](http://www.netl.doe.gov/publications/others/pdf/Oil_Peaking_NETL.pdf)

The Peak and Decline of World Oil and Gas Production, K. Aleklett and C.J.Campbell, Minerals & Energy, 2003; 18:5-20, ( <http://www.peakoil.net/Publications.html> )

The Countdown for the Peak of Oil Production has Begun, W. Zittel, J. Schindler, L-B-Systemtechnik, 12 October 2004,

( [http://www.energiekrise.de/e/articles/LBST\\_Countdown\\_2004-10-12.pdf](http://www.energiekrise.de/e/articles/LBST_Countdown_2004-10-12.pdf) ) - critique of over optimistic oil production forecasts by the IEA and USGS.

Twilight in the Desert: The Coming Saudi Oil Shock and the World Economy by Matthew R. Simmons (Wiley 2005)