

**D R   C O L I N   E N D E A N**  
**D E N T A L   S U R G E O N**

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**The Secretary**  
**Senate Rural and Regional Affairs and Transport**  
**Parliament House**  
**Canberra ACT 2600**

Submission to:

**Australia's future oil supply and alternative transport fuels, with particular reference to:**

- a    projections of oil production and demand in Australia and globally and the implications for availability and pricing of transport fuels in Australia;
- b    potential of new sources of oil and alternative transport fuels to meet a significant share of Australia's fuel demands, taking into account technological developments and environmental and economic costs;
- c    flow-on economic and social impacts in Australia from continuing rises in the price of transport fuel and potential reductions in oil supply; and
- d    options for reducing Australia's transport fuel demands.

Thank you for the opportunity to present to this Senate Inquiry. My submission reflects primarily on the first reference regarding projections, demand, availability and pricing of oil and transport fuels. I will also make some passing references and discussion regarding the other terms of reference.

**Projections of Oil Production and Demand**

I have been personally researching and reviewing published documents<sup>i,iiii</sup>, books<sup>iv,v,vi,vii,viii,ix,x,xi,xii,xiii</sup> and references over the past 6 years that explore the depletion and availability of world oil resources. From these studies I have ascertained that significant issues around what has become known as 'Peak Oil' should have a considerably higher profile and be of greater concern to governments, citizens and businesses of Australia and the world.

There is sufficient evidence to consider that the finite resources of crude oil may be close to the midpoint in production and depletion. This has become known variously as 'Peak Oil', 'Topping Point', 'The Big Rollover' etc. It is the point at which the physical limitations of the oil resource, in the geology of source rocks, is unable to be extracted in increasing quantities. It is the point whereafter the production or extraction of the oil resource declines. This can be understood at the level of a single oilfield or aggregated to reflect the multiple oilfields of a country or for the whole world. It is recognised that there are still oilfields to find and wells to drill that will produce oil, however these are declining in size with the peak of oil discovery in the mid to late 1960's. Indeed, it is evident that for about the last quarter century we have been using (producing) more oil than has

been discovered. There is abundant evidence of this physical/geological characteristic of peak and then decline, in many parts of the world. The USA, Australia, Norway, Great Britain and many other countries are producing less and less oil each year from their well established oilfields. That is, these countries, including our own have past their 'oil peak' and are facing declining production levels. The many incentives and policy directions of the USA are a case in point to reflect that no amount of further exploration or investment can change the inevitable decline in production. New offshore deepwater oilfields have been discovered in the USA over the past 10 years, however, this new production hasn't changed the trend of overall declining production.

Jeremy Leggett<sup>12</sup> in his recent book "*Half Gone: Oil, Gas, Hot Air and the Global Energy Crisis*" has identified a broad agreement in assessments that there will be a time when the limited available world crude oil resource will reach the physical limitations and thence decline in production. That is to say that there will be a time when our world economy and commodities trading will not have available continued growth of Oil production but rather face a declining production. Leggett goes on to describe that the disagreement is significantly about when this physical limitation will occur. He describes the differing perspectives as the "Early Toppers" for those that believe the peak of world oil production will occur soon and the "Late Toppers" for those that believe that this peak will not occur in the next 2 decades. In the BTRE Report<sup>2</sup> "*Is the World Running Out of Oil? A Review of the Debate*" these opposing viewpoints are described as "depletionist" and "antidepletionist". This report of a year ago (Feb 2005) attempts to describe these differing viewpoints and provide advice for government policy setting. Although it goes part way to doing so, it fails to recognise that the world oil market will not be able to predict depletion and decline with sufficient foresight and preparation to avoid potential catastrophic economic events. In particular the Report's predictions for price have as yet not been born out:

*Long-term oil prices, potentially an indicator of scarcity, are forecast by international agencies to decline from the 2004 peak and then to rise gradually to around US\$30/barrel in 2030 (in year 2000 US\$)<sup>2</sup>.*

Contrary to the Australian government advice provided by the BTRE Report – Working Paper 61<sup>2</sup> the USA government advice provided by the "*Peaking of World Oil Production: Impacts, Mitigation and Risk Management*"<sup>3</sup> provides a more sobering and concerned prediction that begins with:

*The peaking of world oil production presents the U.S. and the world with an unprecedented risk management problem. As peaking is approached, liquid fuel prices and price volatility will increase dramatically, and, without timely mitigation, the economic, social, and political costs will be unprecedented. Viable mitigation options exist on both the supply and demand sides, but to have substantial impact, they must be initiated more than a decade in advance of peaking.*

It is worth noting also that although our world economy has changed in the past three decades since the oil shocks of the 1970's to have reduced economic impact of energy dependence (percentage of GDP contributed to by oil & energy sector has fallen), however, the globalised marketplace is increasingly dependent on transport and 'just-in-time' production and world food production is hugely dependent on inputs from oil and natural gas.

I submit that it is necessary for government policy and citizen understanding, to become seriously informed and cognizant of the significance of peak oil and oil depletion. In my assessment of the differing perspectives I haven't been able to accede to the antidepletionists or late toppers view that there is no immediate concern and that market forces will resolve the changeover to non fossil fuel energy resources.

It requires of us to have an open mind as to the consideration that in the near future the peak in oil production will have huge economic and social impacts. It is necessary to be open to this possibility and to challenge the safer and more comforting alternative viewpoint that there is little to worry about in the short term and that technology, research and market forces will provide a transition to new energy sources for transport and to fuel the growing world economies and ever larger human population. From the risk management perspective, if we fail to perceive the threat until too late then considerable hardship and disruption will occur.

I look forward to the opportunity to presenting this evidence to your Committee at a future date.

Sincerely,  
Colin Endean  
February 2006

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<sup>i</sup> Campbell, Colin J & Laherrere, Jean H 1998 The End of Cheap Oil *Scientific American* March 1998, 78-83

<sup>ii</sup> Martin, L; Potterton, P *Is the World Running Out of Oil? A Review of the Debate* BTRE Working Paper 61 (<http://www.btre.gov/au>)

<sup>iii</sup> Hirsch, Robert L; Bezdek, R; Wendling, R *Peaking of World Oil Production: Impacts, Mitigation and Risk Management* February 2005, <http://www.hilltoplancers.org/stories/hirsch0502.pdf>

<sup>iv</sup> Deffeyes, Kenneth S *Hubbert's Peak: the impending world oil shortage* Princeton University Press, Princeton New Jersey

<sup>v</sup> Campbell, Colin J 1997 *The Coming Oil Crisis* Multiscience Publishing Company, Essex England

<sup>vi</sup> Heinberg, Richard *The Party's Over: Oil, War and the Fate of Industrial Societies* New Society Publishers, British Columbia Canada

<sup>vii</sup> Heinberg, Richard *Powerdown: Options & Actions for a Post-Carbon World* New Society Publishers, British Columbia Canada

<sup>viii</sup> Holmgren, David 2002 *Permaculture: Principles & Pathways Beyond Sustainability* Holmgren Design Services, Hepburn

<sup>ix</sup> Odum, Howard T & Elisabeth C (2001) *A Prosperous Way Down: Principles and Policies* The University Press of Colorado, Boulder Colorado

<sup>x</sup> Fleahy, Brian J *The Decline of the Age of Oil: Petrol Politics, Australia's Road Ahead* Pluto Press, Sydney

<sup>xi</sup> Deffeyes, Kenneth S *Beyond Oil: The View from Hubbert's Peak* Hill and Wang, New York

<sup>xii</sup> Leggett, Jeremy *Half Gone: Oil, Gas, Hot Air and the Global Energy Crisis* Portobello, London

<sup>xiii</sup> Gever, J; Kaufman, R; Skole, D; Vorosmarty, C *Beyond Oil: The Threat to Food and Fuel in the Coming Decades. Third Edition (1991)* University Press, Colorado