

Selected Reading

This page comprises a short selection of documents and presentations that are useful as background reading, together with some useful data resources.

Articles, Papers and Presentations

Murdoch University: Peak Oil, Cities and Sustainability. Bruce Robinson 24 MB 8th March 2011

Peak Oil: and an oil vulnerability assessment for Bunbury. Presentation to Engineers Australia, Bunbury, 5th October 2010. Bruce Robinson (PPT 18 MB)

Peak Oil: Implications and Solutions Ian Dunlop, presentation to RAATA Ideas Forum, NSW Parliament House, 23rd September 2010 (PDF 4MB)

Career Quakes Videos of presentation Part 2, Part 3 Mitch Lawrie

Will you have a job in the future? Career Quakes examines 6 major threats to our economic system and provides clear guidelines on what to expect and how to approach it. This presentation was originally given at Brisbane Grammar School but applies equally to all ages and regions of Australia. Tags: peak oil, career, education, threats

Australian Resources China Investment Congress. "Peak Oil: What will it mean for China and Australia". (20MB) Bruce Robinson, 16th July 2010, Adelaide

Urban Transport and the Australian Mega City – Can we cope? Presentation (PDF, 3MB) by Dr Garry Glazebrook, UTS (and member of ASPO-Sydney) to the Population Australia 2050 conference, Sydney, June 29th 2010

A Peak Oil Perspective Presentation (PDF, 4MB) by Wally Wight, Co-Coordinator, ASPO-Brisbane, to Doctors and Scientists for Sustainability and Social Justice (D3SJ) 9-June-2010

Peak Oil - What should Australia be doing to prepare? Presentation by Bruce Robinson (18MB, PPT) at China University of Petroleum, Changping, Beijing 27th May 2010

WA Government Strategic Energy Initiative Presentation, Bruce Robinson with Dr James Buckee, 30th March 2010, Office of Energy

David Rice, Sustainability: Let's get real. An outline of a workable definition of sustainability and a scheme to rate degrees of sustainability. Presentation to the Society for Sustainability and Environmental Engineering, Engineers Australia, Perth. 11th March 2010. Accompanying paper

University of Western Australia U3A 7th March 2010

Peak Oil: When is the global oil crunch coming? (17MB, PPT)

Growth in Transition Conference, Vienna, January 2010, organised by the Austrian Government. Invited peak oil presentation

Conference link www.GrowthInTransition.eu

State of Australian Cities Conference, UWA, Perth, 25th November 2009 (12 MB, PPT)

Peak Oil: Future oil shortages and mitigation/adaptation options for Australian cities

Australian Shareholders Association. "Peak Oil What might it mean for investors". (17 MB, PPT) (or PDF version 7MB) presentation to the WA branch monthly meeting, 7th October 2009

Senate Select Committee on Fuel and Energy. Invited evidence, Perth, 30th June 2009 The Global Oil Crunch: We should be preparing in advance (PPT, 10MB) Hansard transcript

University of the Third Age. Melville 20th June 2009. The Global Oil Crunch: Will Peak Oil arrive before the financial recession ends, or later? Powerpoint (16MB)

BEYOND BUSINESS AS USUAL: PEAK OIL AND THE SOUTH EAST QUEENSLAND REGIONAL PLAN Submission April 2009, Stuart McCarthy

PEAK OIL AND THE AUSTRALIAN ECONOMY Stuart McCarthy, April 2009 (appendix to submission to SEQRP)

Carbon Trading Summit.. Presentation Peak Oil: another and more pressing challenge? Bruce Robinson 19th March 2009, University of WA. (Powerpoint 14MB), or in PDF form (7MB).

Korea: Presentation to investors, Seoul, 11th November 2008, and to ASPO-Korea 12th Nov.

Bruce was invited to brief an investors' conference held by Korea's biggest fund manager, Mirae Asset. His presentation and speakers notes are available. He was also invited to speak at the Seoul Development Institute (which conducts transport and urban planning research for the Seoul Metropolitan Government) and met with ASPO-Korea

Infrastructure and Sustainability: (43MB) Presentation by Prof. Peter Newman of Curtin University Sustainability Policy Institute to Engineers Australia, Perth, 17th July 2008

Myths, (Mis)Perceptions and Reality in Measuring Voluntary Behaviour Change

May 2008, Werner Brög, Socialdata and Ian Ker, CATALYST

Reductions in car/kms of 12-13% have been recorded in Australian cities by Individualised Marketing ("TravelSmart Household") techniques, empowering people to make changes in travel patterns by providing individualised information. There have been concerted attempts to discredit these results, often as a result of misunderstandings and sometimes from other motives. This is a paper explaining the proven Individualised Marketing methodology, which has been used successfully in Perth for more than a decade, and in many other cities worldwide. It is now being used in Perth for multicommodity demand management, to reduce water, electricity, travel and waste.

Coping with Peak Oil and Global Warming in Australian Cities

Dr Garry Glazebrook, University of Technology, Sydney,

Professor Peter Newman, Curtin University, Western Australia.

Paper presented in Chicago June 2008 (1MB)

Australia is a highly urbanised nation and its cities are amongst the most car dependent in the world. This paper examines how their transport systems will be impacted by peak oil and global warming, and the options for mitigating these impacts. Scenarios for future oil prices and availability, energy efficiency measures, transport investment options and travel behaviour change will be examined to test the likely effects on accessibility and equity in inner and outer suburbs and for different income groups, using detailed analysis of travel patterns. This will be used to examine policy implications for government in addressing these issues.

Peak Oil, Climate Change & the Global Sustainability Emergency

Presentation (1MB) to Engineers Australia,

Southern Highlands & Tablelands Group, Mittagong, 26th June 2008

Ian T. Dunlop, Governance and Sustainability Advisor, Deputy Convenor, ASPO-Australia

MALA: Mature Adults Learning Association A course given in Perth April-June 2008

Peak Oil: WA Transport Planning. 21 MB presentation, 4th April, Bruce Robinson

The Impact of Oil Depletion on Australia 9MB presentation, 18th April, Bruce Robinson

Is Perth Sustainable?. Urban form and Light Rail. 20MB presentation, Diana Ryan
and Speaker's Notes 6th June

Children and Peak Oil, Paul Tranter and Scott Sharpe (ADFA-UNSW), 2007 If we fail to adequately prepare for peak oil, it is likely to have disastrous consequences for children's rights. It may lead to widespread poverty, starvation and wars over remaining oil supplies. Yet peak oil can also be seen as an opportunity, particularly for children. If we recognise the potential for peak oil to change our lifestyles, we can start preparing for peak oil now, in ways that will provide benefits for children in both present and future generations.

Peak Oil and Australia; Probable impacts and possible options Invited paper presented to the Society of Exploration Geophysics of Japan, International Conference, November 2006 Bruce Robinson and Sherry Mayo, ASPO-Australia

Abstract: Peak Oil is when the rate of global oil production starts its final decline, from the current trends of increasing yearly production.. A growing number of estimates of the date of Peak Oil cluster around 2010-2015 (ASPO-Australia, 2006). The impact of Peak Oil on Australia is likely to be very severe, unless substantial mitigation and adaptation policies are implemented urgently. Many available options will have significant social and economic benefits as well as reducing oil dependence. Peak Oil countermeasures can be simultaneously both mitigation and adaptation strategies, unlike most climate change options which are normally either one or the other. The likelihood of significant Government action before an oil depletion crisis, however, is currently very low.

Climate Change & Peak Oil: An Integrated Policy Response for Australia

Ian Dunlop, Deputy Convenor, ASPO-Australia

We need for an integrated policy response for Australia to the twin challenges of Peak Oil and Climate Change, as submitted to the Prime Ministerial Task Group on Emissions Trading.

Climate change and peak oil are inextricably linked. Each one is a major issue in its own right, but their convergence has received minimal attention, which is unfortunate as it is likely to have far greater impact than the sum of the individual parts. Policy must ensure that solutions to the one reinforce, and do not conflict with, solutions to the other

Current Global Challenges and Alternative Futures for South Africa.

The interconnections between oil depletion, climate change and global financial imbalances

ASPO-South Africa August 2007

Are we running out of oil? A valuable 2-page brochure or poster prepared by Sherry Mayo and ASPO-Melbourne, August 2006, inspired by Les Magoon's USGS poster from 2,000. A simple short description, which can be reused and modified.

Multi-level oil vulnerability risk assessment and reduction Bruce Robinson

Abstract for paper to ASPO-V conference in Italy, July 18-19th 2006:

Poster (3.5MB)

Assessing the impacts of Peak Oil at very detailed levels offers many major benefits. If Peak Oil is considered just at the level of an entire national economy most people, including decision-makers, will say "It is all too hard", as many have done with global warming. Most people and organisations are largely unaware of the numerous widely-varying opportunities open to them to reduce their oil vulnerability.

The impacts of Peak Oil will be felt very differently across various sectors of society, industry and commerce and between disparate geographic locations. Similarly, the opportunities which arise from future oil shortages will be many, but far from uniformly distributed.

Methodologies must be developed and tested for assessing oil vulnerabilities in a number of dimensions and levels. These will enable individuals and organisations to consider their Peak Oil impacts and to devise clever and unexpected ways to minimise them. Consultants should offer to prepare individual oil vulnerability audits and risk management plans. These must generally concentrate on behavioural and policy-level options which are where the greatest opportunities lie, rather than just on the normal but restricted technological strategies of more efficient vehicles and alternative fuels.

Peaking of World Oil Production: Impacts, Mitigation and Risk Management ("the Hirsch Report") - prepared by Robert L Hirsch, for the US Dept of Energy (February 2005).

This report looks at three scenarios in which peak-oil mitigation measures are started 20, 10 and 0 years prior to peak production respectively, and concludes "Mitigation will require a minimum of a decade of intense, expensive effort, because the scale of liquid fuels mitigation is inherently extremely large". More recent papers by Hirsch at (A) and at (B)

Impact of Oil Depletion on Australia - Robinson, Fleay and Mayo. Abstract and powerpoint slides from the ASPO conference in Lisbon 2005.

Oil depletion: the crucial factor in transport planning. Robinson and Powrie, Australasian Transport Research Forum, Adelaide, October 2004.

As a result of steeply declining domestic oil production and forecasts of dwindling world supplies, Australia is very vulnerable to temporary and permanent oil shocks in the short, medium and long term. Transport planning priorities (both large scale planning and road design) must be changed dramatically to minimise the impacts of the coming oil shortages.

Is the world running out of oil? A review of the debate. Lyn Martin, BTRE WP61, released May 2005. An update of her ATRF-2004 paper.

A useful but conservative and somewhat dated government summary of Peak Oil from an Australian perspective. A critique of this paper by Matt Mushalik is on Sydney Peak Oil

Oil Based Technology and Economy - A wide ranging review of oil depletion and its implications by the Danish Board of Technology and the Danish Society of Engineers.

Oil Prophets: Looking at World Oil Studies over Time - this paper compares a number of attempts to predict the date of peak oil production (after which production declines) and/or the Estimated Ultimately Recoverable (EUR) oil. Methodologies vary as do the definition of "oil" (conventional vs non-conventional etc), but it is nonetheless a very interesting comparison.

The Countdown for the Peak of Oil Production has Begun – but what are the Views of the Most Important International Energy Agencies - This is an overview of all the major oil producing areas and their potential (on not) to increase production. It includes a critique of the optimistic assessments of the USGS World Petroleum Assessment 2000 and the US EIA and IEA which largely rely on the USGS figures for their assessments. The USGS 2000 assessment is a major study which estimates ultimately recoverable oil reserves (URR). Unusually this study attempts to estimate reserves growth as well as new discoveries. The USGS does not attempt to model the production profile but the US-EIA have used the USGS figures to generate a reassuring (if rather non-physical) production curve with a peak at 2037.

Peak Oil 2004 - Run for your life or do nothing? - An article by italian ASPO member Ugo Bardi, giving an outline of the Hubberts Peak theory of oil depletion (both it's strengths and limitations) and describing the way that responses to it are influenced in part by emotional factors.

World oil production capacity model suggests output peak by 2006-07 (from Oil and Gas Journal) - The Author, Ali Morteza Samsam Bakhtiari (www.samsambakhtiari.com) is a senior expert in the corporate planning division of National Iranian Oil Co., Tehran

Is the glass half-full or half-empty? Two different spins on essentially the same data from the IHS database: One (by IHS) showing that supply up to 2008 will be good, the other (by ODAC) that supply will be pretty tight by 2010. The IHS database is a propriety industry database of technical data, generally considered to be much more reliable than the publicly available data provided by oil companies.

Opposing views on oil depletion from energy investement banker Matt Simmons, who thinks Saudi reserves are overstated and that peak production is here, and energy economist Mike Lynch who is very critical of Hubbert's Peak based methods of forecasting oil-depletion

Presentations & Posters

Peak Oil: WA Transport Planning. 21 MB presentation to Engineers Australia, Transport Panel, Perth, 27th March 2008, Bruce Robinson

Population, Peak Oil and Climate Change Conference, Canberra 15th March 2008

Presentation (9MB) by Bruce Robinson

Children and Peak Oil analogy (18MB) by Paul Tranter (ADFA and ASPO-Australia)

see also his paper Children and Peak Oil,

Peak Oil: What's the impact for planning 17MB presentation to WA Planning Commission Forums on the Future, University of Western Australia 26th October 2007

Peak Oil: What are the probabilities that the rate of global oil production will start its final decline soon? 8MB presentation by Bruce Robinson at Curtin University, Friday 10th August 2007

Peak Oil: A crucial driver for biofuels 6MB tutorial presentation by Bruce Robinson about Peak Oil to WASEA/STC Biofuels workshop, Perth, May 2007.

Peak Oil - The emerging reality. 2 MB Powerpoint presentation (with notes) by Chris Skrebowski on his ASPO-Australia tour, August 2006. Using his Megaproject data (see bibliography on this site)

The Big Rollover - are we running out of oil? US Geological Survey summary poster by Les Magoon, a great introductory resource. Also available direct from USGS website

Oil Peak - A Geologists View - by BP geologist Francis Harper. Very interesting presentation with lots of useful facts and figures. Predicts a non-OPEC production peak in 10 years, suggests a global peak in 15 years is possible. Uses info based on the IHS database - a more reliable source than the publicly available info published in Oil and Gas journal or the BP Statistical review.

Oil Depletion and Australia - A presentation (18MB PPT) by Bruce Robinson of the Sustainable Transport Coalition given to WA opposition MPs August 2005. It outlines the growing awareness of the issue, raises concerns about the accuracy of world (especially Middle East) reserve estimates, and publicly available data, and described Australia's oil production situation.

Background Data and Resources

The North Sea - an oil area in decline: Some Excel spreadsheets of oil production by field from the UK and Norway showing how initially production is from a few large fields which grow in production and then decline (following a Hubbert's curve) and progressively moves to larger numbers of smaller fields as the area matures. The dip in production in the UK plot is due to the Piper Alpha disaster, causing production to be temporarily halted in some fields.