January 2014

Submission Infrastructure Australia Amendment Bill 2013

This submission relates to following website:

http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Rural_and_Regional_Affairs_and_Transport/Infrastructure_Australia_Amendment_Bill_2013

Summary

Just like the existing 2008 Infrastructure Australia Act the proposed Bill is basically in denial of peak oil and global warming which are both physical processes controlled by the laws of nature (fluid mechanics in oil/gas reservoir rocks, thermodynamics, atmospheric pressure/temperature/gas laws). It is a futile attempt to try circumventing these laws. As a result, objectives and productivity criteria have not been properly defined. Both peak oil and global warming would require a massive electric rail development program, not more high-ways and toll-ways, in order to reduce oil consumption and CO2 emissions.

About Crude Oil Peak

The website http://crudeoilpeak.info/ uses government data to display graphs showing the evolving peaking of crude oil production. Peak oil is to be considered as a complex process, not just an event in the year of maximum production. Peak oil has already happened in many countries (e.g. UK, Egypt, Yemen, Syria) and has affected many companies. Latest examples in Australia are refineries (Clyde, Kurnell), mining (Olympic Dam, Gove), aviation (Qantas) and car manufacturing (Holden).

Comments on the Bill

(1) Productivity not defined

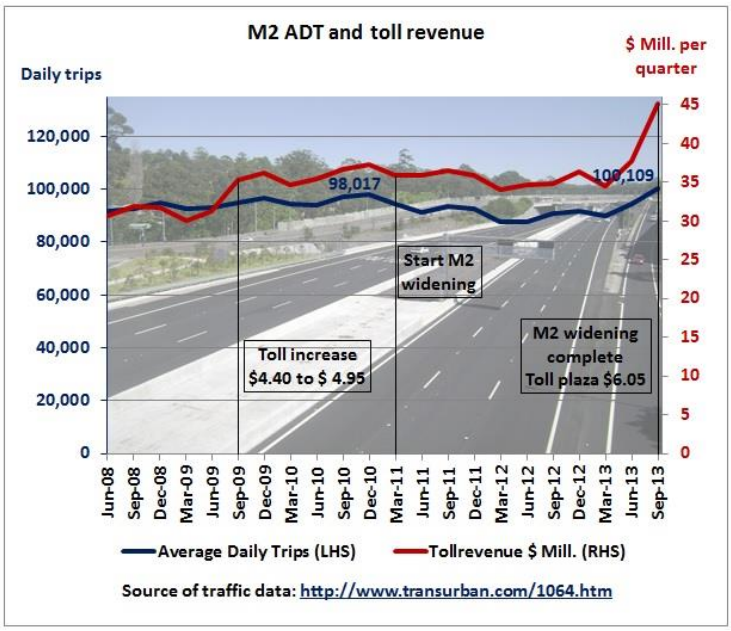
The Bill uses the term "productivity gains" in clause 5B Functions – Developing Infrastructure Plans (1) (b). It is not clear which productivity is meant in this context. Productivity is usually an output/input ratio. But which input and which output is measured?

We could have for transport infrastructure:

(a) Vehicle/passenger/freight ton kms per million dollar invested
(b) Oil/energy consumption in PJ per vehicle/passenger/freight-ton kms
(c) Oil/energy consumption in PJ per million dollar invested
(d) CO2 emissions in mtpa per vehicle/passenger/freight-ton kms

(e) CO2 emissions in mtpa per million dollar invested
(f) GDP or SDP in AU$ per million dollar invested
(g) GDP or SDP in AU$ per vehicle/passenger/freight-ton kms
(h) Cost of using infrastructure in AU$ per vehicle/passenger/freight-ton kms

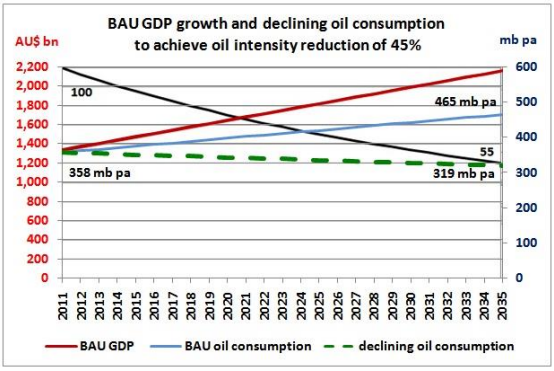
A recent example for (h) is the widening of the M2.



The tolling costs to motorists of using the M2 has increased 4 times more than traffic volumes. Is that productive? More details are here:
http://crudeoilpeak.info/unsustainable-sydney-cost-of-using-m2-toll-way-grows-4-times-faster-than-traffic

The priority lists to be prepared under clause 5 (b) would be totally different for different productivity definitions.

The Bill also ignores internationally agreed aspirational objectives to reduce energy intensities:



20/11/2011 APEC energy intensity reductions: what it means for Australian oil consumption
http://crudeoilpeak.info/apec-energy-intensity-reductions-what-it-means-for-australian-oil-consumption

(2) No objectives defined

The reason for the lack of a proper productivity definition is that no over-all physical, economic or financial objectives have been defined either. Clause 5 (a) mentions "forecast growth", but growth of what exactly?

The above productivity definitions would relate to following objectives:

i. Increase vehicle/passenger/freight ton kms
ii. Increase oil/energy consumption in PJ
iii. Increase CO2 emissions in mtpa
iv. Increase GDP or SDP in AU$
v. Increase cost of using infrastructure

Inconsistencies and conflicts when preparing priority lists are therefore pre-programmed.

(3) Global challenges

Objectives should of course be defined on the basis of current problems. The world faces at present following challenges:

A. Resource depletion, especially in relation to oil and energy in general

B. Increasing debt and inability of paying back debt

C. CO2 accumulating in the atmosphere and resulting economic damage

D. Disintegration of the Middle East

E. Population growth exceeding resource development

These problems would definitely require any infrastructure to reduce the consumption of resources, debt and CO2 emissions.

The proposed Bill completely fails to take these objectives into account.

(4) Roads vs Public Transport

It is clear that the current government is changing the IA legislation in order to implement its election promises in:

"The Coalition's Policy to Deliver the Infrastructure for the 21st Century"

- $6.7 billion to fix Queensland's Bruce Highway;
- $5.6 billion to complete the duplication of the Pacific Highway from Newcastle to the Queensland border;
- $1.5 billion to get Melbourne's East West Link underway;

- $1.5 billion to ensure the WestConnex project gets underway in Sydney;
- $1 billion to support the Gateway Motorway upgrade in Brisbane;
- $615 million to build the Swan Valley Bypass on the Perth to Darwin Highway;
- $686 million to finish the Perth Gateway without a mining tax;
- $500 million to support the upgrade of Adelaide's North-South Road Corridor;
- $405 million to get Sydney's F3 to M2 started by late 2014, which will mean shorter travel times, reduced congestion and safer roads for the residents of the Central Coast;
- $400 million to upgrade the Midland Highway in Tasmania; and
- $300 million to finalise plans, engineering design and environmental assessments for the Melbourne to Brisbane inland rail.

http://www.nationals.org.au/LinkClick.aspx?fileticket=1oDvjdlJomw%3D&portalid=0

With the exception of the inland rail plan these are all high-way and toll-way projects, ignoring the above challenges.

(5) Climate change

Clause 5 (2) (g) of the 2008 Act "to provide advice on infrastructure policy issues arising from climate change" has been deleted in the Bill. This is of course a futile attempt at ignoring the problem. Nature responds to our CO2 emissions not to what is written in legislation.

The last IA Infrastructure Plan under the Rudd/Gillard government published in June 2013 contained this statement:

"*Climate change is a long term challenge for our economy and living standards. By 2050, climate change could lower agricultural productivity by up to 17 per cent. Every Australian will have to pay more for food, energy and water if we do not adapt to climate change and manage its impacts.*

If we are going to mitigate climate change we will need to find cheaper ways to diversify our energy mix to include renewable energy and reduce our reliance on coal. We will need to boost the resilience of our infrastructure networks to the effects of climate change and every effort we make will have cost impacts – but these higher costs in the short term will pay off with lower costs in the long term. " (p 11)

http://www.infrastructureaustralia.gov.au/coag/files/2013/2013_IA_COAG_Report_National_Infrastructure_Plan_LR.pdf

However, former "Environment" Ministers Peter Garrett and Tony Burke have approved massive coal infrastructure projects (e.g. Wiggins and Abbot Pt coal terminals). The new "Environment" Minster Greg Hunt has already approved the dredging program for Abbot Pt. So there is actually no big difference between these 2 governments.

There will be legal consequences as global warming not only damages properties but also kills people.

As an example, at least 6200 people died in Typhoon Haiyan

Climate change makes super typhoons worse, says UN meteorological agency
http://www.abc.net.au/news/2013-11-14/climate-change-making-super-typhoons-worse/5090724

NASA climatologist James Hansen writes in his latest research:

"The "climate dice" became noticeably "loaded" by the first decade of the 21st century, as shown by the third column in Fig. 9. The chance of having a summer-mean temperature anomaly warmer than +3 standard deviations relative to 1951-1980 climate now exceeds 10%. However, the observed bell curve for winter remains closer to the idealized (Gausian) 1951-1980 bell curve. The likelihood of having a winter judged unually cold by 1951-1980 standards (blue area in Fig. 9) remains large enough to correspond to approximately one face of a 6-sided die and increased somewhat in the past three years."

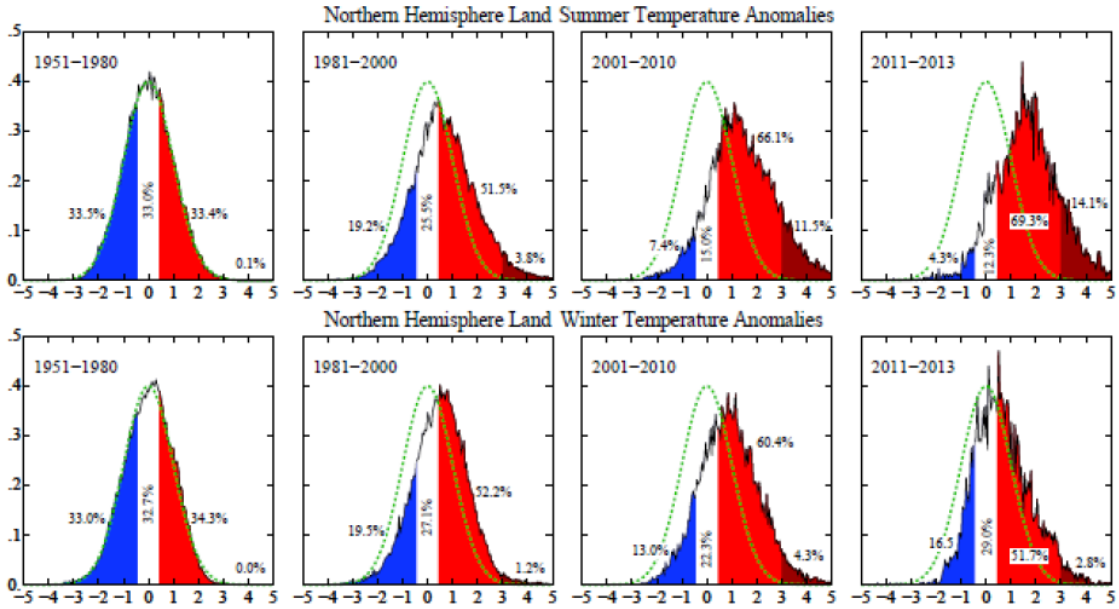
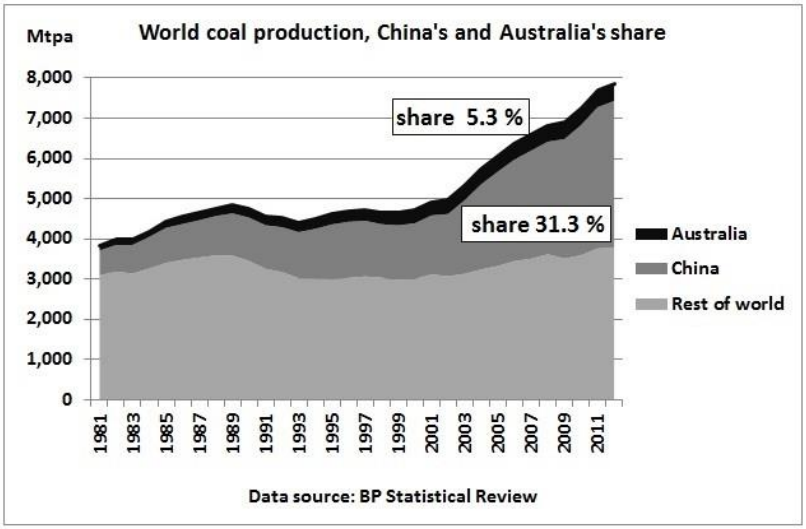


Fig. 9. Frequency of occurrence of local Jun-Jul-Aug (top row) and Dec-Jan-Feb (bottom) temperature anomalies for Northern Hemisphere land areas in units of the local standard deviation (horizontal axis).

http://www.columbia.edu/~jeh1/mailings/2014/20140121_Temperature2013.pdf

The wind load on building in kN/m2 is proportional to the square of the wind speed. Let us assume, for argument sake, that wind speeds were 300 km/h in Haiyan but only 200 km/h in the period 1951-1980. Then the impact of global warming was an increase in wind load of ((300/200)^2-1)/(300/200)^2= (2.25-1)/2.25 = 55 %. In a 1st order approximation let's assume that damage is proportional to wind loads.

Australia's coal production share is 5.3 %



So in relation to coal production the resulting percentage is 55% x 5.3% = 2.9%. Some deduction has to be made for coal exported as those countries which burn Australian coal have also derived benefits. No doubt insurance companies and courts will refine this very simplified methodology.

Note that these astronomical damage bills will be due every year **until the CO2 is removed from the atmosphere**.

Recommendation

The Bill needs to include clearly defined, quantifiable objectives and productivity criteria

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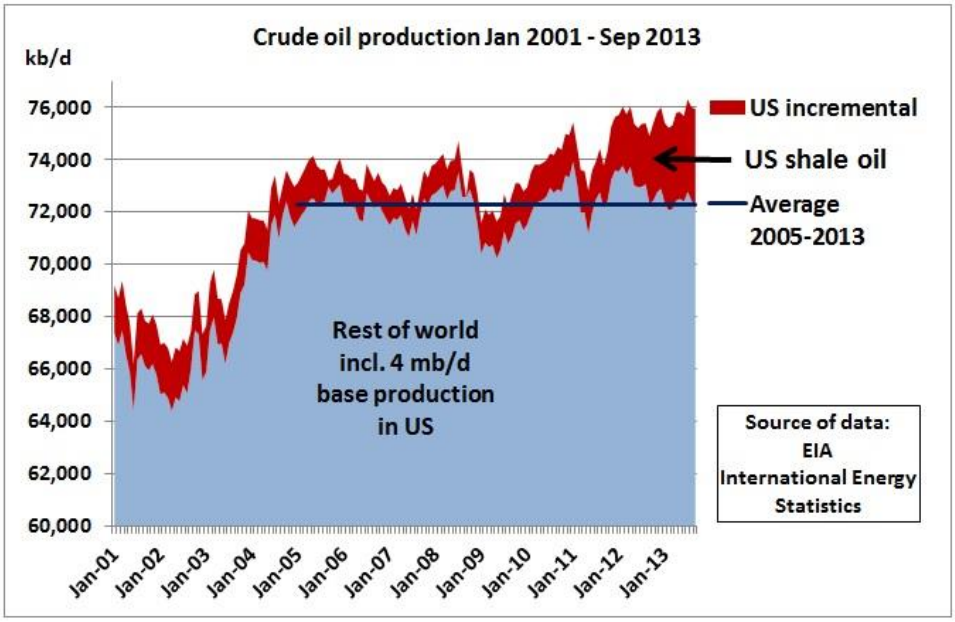
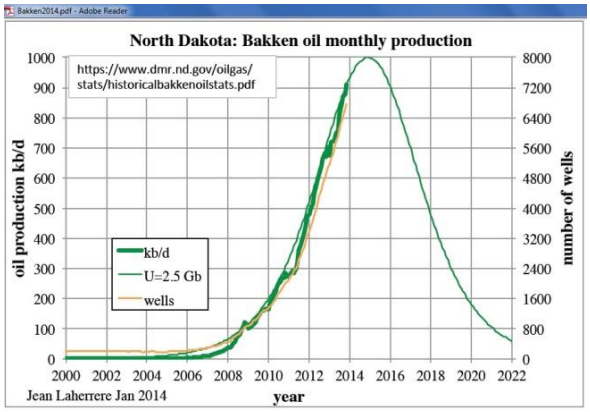
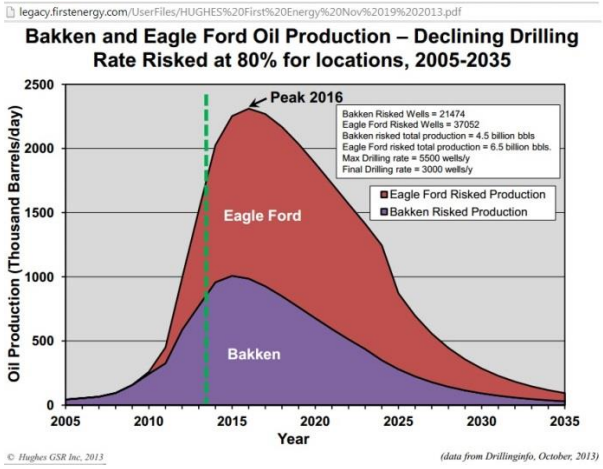


The US shale oil sits like the icing on a flat pan cake (rest-of-world crude production in 2013 back to 2005 levels). When US shale oil peaks, there will be some surprises.



<< French oil geologist Jean Laherrere calculates a peak of Bakken shale oil by end 2014
http://aspofrance.viabloga.com/files/JL_Bakken2014.pdf



<< David Hughes estimates a combined Bakken and Eagle Ford peak around 2016

http://legacy.firstenergy.com/UserFiles/HUGHES%20First%20Energy%20Nov%2019%202013.pdf

The Hirsch report http://en.wikipedia.org/wiki/Hirsch_report recommended that preparations for peak oil be started 20 years before the peak. Are new high-ways a preparation for peak oil?

392659.pdf - Adobe Reader

GROUP DRAWN DEBT AT 30 JUNE 2013

transurban

TRANSURBAN CORPORATE DEBT	AUD ($ MILLION)	USD ($ MILLION)
Working capital lines[1]	–	266
Term bank debt	600	–
US Private Placements	1,336	162
Domestic AUD bonds	1,050	–
Canadian MTN (CAD Notes)	233	–
TOTAL	3,219	428

NON RECOURSE (AUD $ MILLION)	ASSET DEBT	OWNERSHIP	PROPORTIONAL
Lane Cove Tunnel	260	100.0%	260
M1 – Eastern Distributor	520	75.1%	391
Hills M2 – Hills Motorway[2]	733	100.0%	733
M5 Interlinks Roads[3]	587	50.0%	294
Westlink M7	1,260	50.0%	630
TOTAL	3,360		2,308

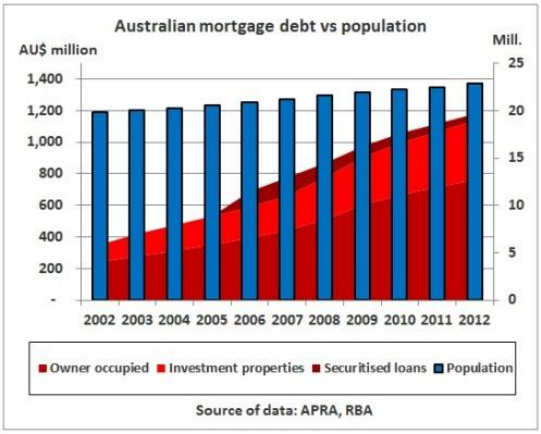
NON RECOURSE (US $ MILLION)	ASSET DEBT	OWNERSHIP	PROPORTIONAL
Pocahontas 895 – Senior	306	75.0%	229
Pocahontas 895 – TIFIA[4]	189	75.0%	142
95 Express Lanes – Senior	242	67.5%	163
95 Express Lanes – TIFIA[5]	–	67.5%	–
495 Express Lanes – Senior	589	67.5%	398
495 Express Lanes – TIFIA[6]	658	67.5%	444
TOTAL	1,984		1,376

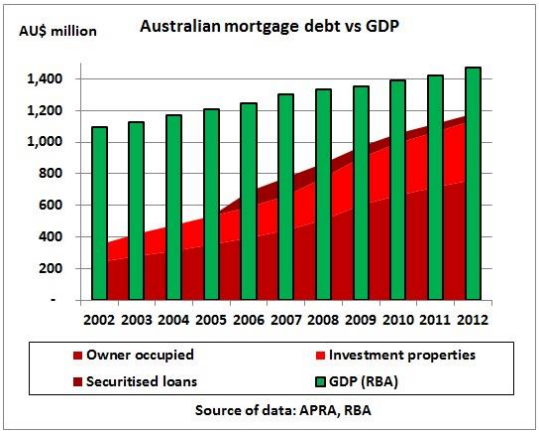
Transurban's debt. In the next credit crunch the problem of rolling over debt will get worse.

More details are in this article:

12/2/2013 No debt repayment plan for Sydney's toll-ways
http://crudeoilpeak.info/no-debt-repayment-plan-for-sydney%e2%80%99s-toll-ways

14/8/2012 Transurban does not pay back its debt
http://crudeoilpeak.info/transurban-does-not-pay-back-its-debt





Mortgage debt grows faster than both population and GDP. This cannot continue and will have an impact on infrastructure planning in capital cities.

More details are here:

Submission on Metropolitan Strategy
http://crudeoilpeak.info/wp-content/uploads/2013/06/Submission_Draft_MetroStrategy_June_2013_by_Matt_Mushalik.pdf