

The time limits given by the convergence of global warming, peak oil and accumulated debt

Submission on carbon tax

Summary: A carbon tax is necessary to finance the massive projects needed to replace coal fired power plants. But it is not sufficient. The time limits and phasing for this replacement program must be determined by using a system dynamics approach. This is because apart from global warming the world is facing the convergence of several other historic and interconnected problems which will negatively impact on the economy's capacity to fund such a program:

- (1) Global as well as local peaking of crude oil production in some key countries
- (2) Accumulated debt and the resulting weakness and instability of the banking system
- (3) Geopolitical, demographic and socio economic changes in the Middle East

NASA climatologist James Hansen has given Australian coal 10 years (until 2020). The carbon tax committee has to LEARN the laws of nature which control global warming. Nature is not part of an endless and circuitous debating club competition. It just responds to CO2 emissions. To ignore this is both naïve and foolish.

Western Australian crude oil reserves are depleted by 75% and global crude oil exports have already peaked in 2005. The elephant in the room are high oil prices as a result of peak oil which now reduces the paying capacity of tax payers. In actual fact Howard should have used revenue from the mining boom to finance massive urban and intercity rail projects which would have mitigated the impact of peak oil on the economy. This historic failure will one day enter history books.

Current energy and transport policies will lead to a severe oil and electricity crisis (look at what is happening in Japan now) within the next 10 years. The ongoing oil crunch may already become critical by 2015 depending on how fast

- (1) unrest in the Middle East spreads to the remaining dominos of Saudi Arabia, Kuwait, UAE and Qatar
- (2) the nuclear stand-off with Iran evolves and how that impacts on oil supplies
- (3) oil demand in India and China continues to grow

Australia's iron ore helps China manufacture 14 million new cars EVERY YEAR which drive up demand for oil and therefore oil prices. This cannot go on forever and will impact on Australia. There is no time to lose.

A carbon tax must also collect sufficient funds to finance compensation claims arising from global warming related events like droughts, fires, flooding, storms and sea level rises, which have to be expected to come before local and international courts.

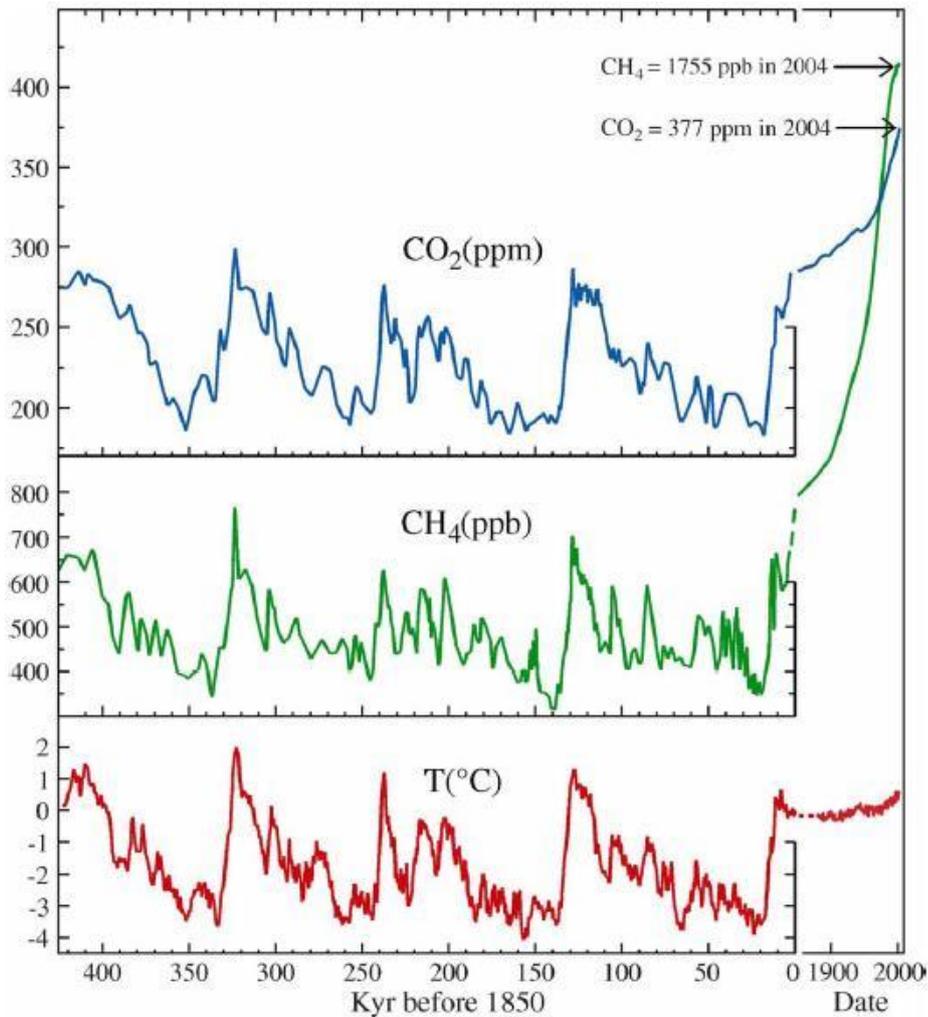
The way action on global warming is delayed there is a real danger that - by the time the world has understood global warming and wants to take action - the combination of peak oil and accumulated debt will have damaged our economy to such an extent that it can't finance the projects needed to replace our coal fired power plants. Political leaders from both sides will be fully responsible for this approaching dilemma which could have been well prevented.

Prepared by Matt Mushalik (MIEAust, CPEng)

5/8/2011

<http://crudeoilpeak.info/>

(1) Planet Earth now out of its natural climate change cycle



In the last 400K years natural climate change was controlled by Milankowich cycles (orbital changes)

http://en.wikipedia.org/wiki/Milankovitch_cycles

plus CO₂ feed back. CO₂ concentration in the ice ages was around 200 ppm, in the interglacial periods 300 ppm. The temperature difference was 5 degrees. Sea levels in warm periods are 120 m higher than in ice ages. Current CO₂ concentrations of 390 ppm have kicked planet Earth out of these natural cycles, into a completely different climate state.

It is the duty of all Parliamentarians to LEARN about these facts, not to discuss them endlessly in opinionated gossip.

21/7/2011

An article by *The Age's* Michael Gordon titled 'He says She says' last week, included a disturbing paragraph in which he quoted Tony Abbott, in South Dandenong, answering a question about how CO₂ emissions are calculated: "It's actually pretty hard to do this because carbon dioxide is invisible *and it's weightless* (my emphasis) and you can't smell it."

<http://www.theage.com.au/opinion/society-and-culture/intelligent-discussion-all-but-extinct-20110720-1hos2.html>

(2) Future of coal: 10 years

8/3/2010

NASA climatologist James Hansen at Sydney Uni: "Australia doesn't agree now that they got to stop their coal, but they are going to agree. I can guarantee you that within a decade or so because the climate change will become so strongly apparent that's going to become imperative"

http://www.usyd.edu.au/sydney_ideas/lectures/2010/professor_james_hansen.shtml



Paleoclimate Implications for Human-Made Climate Change

James E. Hansen and Makiko Sato

NASA Goddard Institute for Space Studies and Columbia University Earth Institute, New York
ABSTRACT

Paleoclimate data help us assess climate sensitivity and potential human-made climate effects. We conclude that Earth in the warmest interglacial periods of the past million years was less than 1°C warmer than in the Holocene. Polar warmth in these interglacials and in the Pliocene does not imply that a substantial cushion remains between today's climate and dangerous warming, but rather that Earth is poised to experience strong amplifying polar feedbacks in response to moderate global warming. Thus goals to limit human-made warming to 2°C are not sufficient – they are prescriptions for disaster. Ice sheet disintegration is nonlinear, spurred by amplifying feedbacks. We suggest that ice sheet mass loss, if warming continues unabated, will be characterized better by a doubling time for mass loss rate than by a linear trend. Satellite gravity data, though too brief to be conclusive, are consistent with a doubling time of 10 years or less, implying the possibility of multi-meter sea level rise this century. Observed accelerating ice sheet mass loss supports our conclusion that Earth's temperature now exceeds the mean Holocene value. Rapid reduction of fossil fuel emissions is required for humanity to succeed in preserving a planet resembling the one on which civilization developed.

<http://arxiv.org/ftp/arxiv/papers/1105/1105.0968.pdf>

Interview with Kerry O'Brien: <http://www.abc.net.au/7.30/content/2007/s1870955.htm>

and Tony Jones: <http://www.abc.net.au/lateline/content/2008/s2764523.htm>

(3) Arctic summer sea ice

There are many tipping points as explained here:

Tipping elements in the Earth's climate system

<http://www.pnas.org/content/105/6/1786.full>

but one of the most critical is the Arctic summer sea ice which may start to disappear very soon.

There are 3 metrics: sea ice extent, area and volume

- (1) extent (> 15% ice)

<http://nsidc.org/arcticseaicenews/>

now around the 2007 minimum

Watch simulation for 2011 here:

http://psc.apl.washington.edu/zhang/IDAO/seasonal_outlook.html

since 1953

http://nsidc.org/sotc/images/mean_anomaly_1953-2010.png

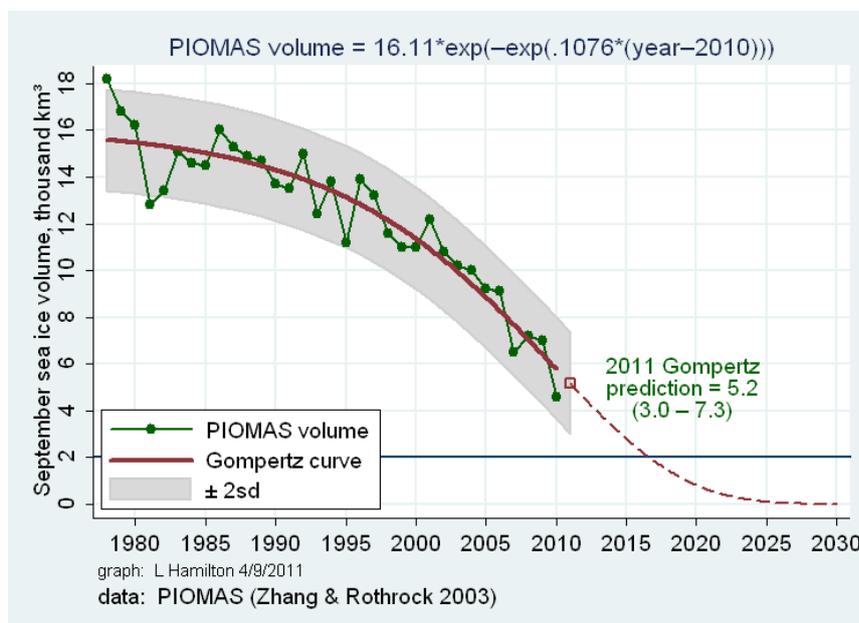
- (2) area (net)

<http://arctic.atmos.uiuc.edu/cryosphere/IMAGES/seaice.recent.arctic.png>

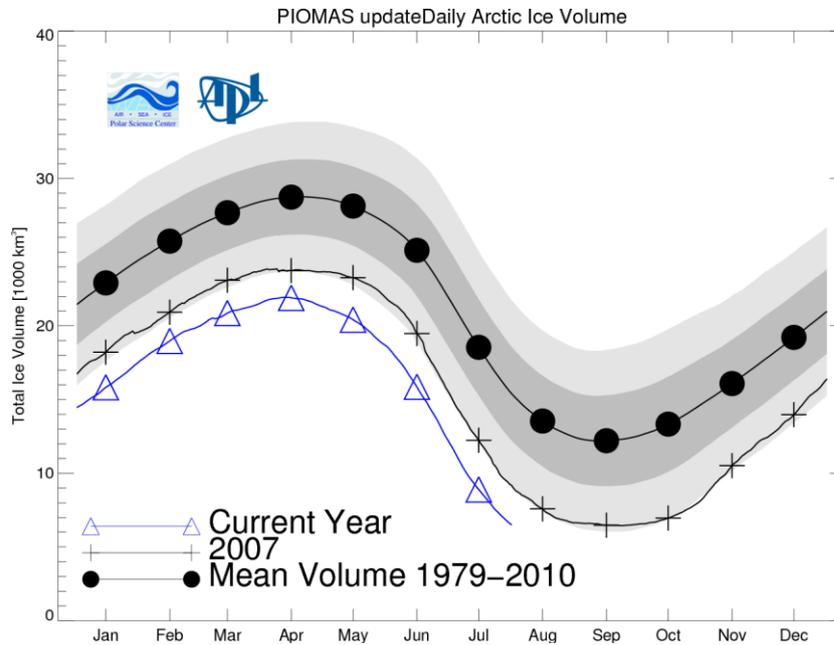
trend over centuries

http://www.scilog.de/wblogs/gallery/16/millennium_eis.jpg

- (3) volume



<http://neven1.typepad.com/blog/2011/04/trends-in-arctic-sea-ice-volume.html>



<http://psc.apl.washington.edu/wordpress/research/projects/arctic-sea-ice-volume-anomaly/>

As we can see, the September sea ice volume of 1979 is gone by around 60%

Impact

Not having this protective white lid has big implications for the northern hemisphere right down to the equator where you are at Singapore

In and around Eastern Asia, 2009-2010 was relatively cold and snowy in winter. This weather system was a result of changed wind patterns which in turn was a response to the warming of air around the North Pole – where we are seeing temperature rises happening at 2-3 times the average global rate. We can only expect more cold and snowy winters in East Asia. Another consequence is that ocean currents are starting to change. This has an impact for the timing of monsoons in Asia and the weather that’s associated with the monsoons

<http://www.ecowalkthetalk.com/blog/2011/02/01/pen-hadow-melting-arctic-sea-ice-and-how-it-will-affect-asia/>

(4) Sea level rise

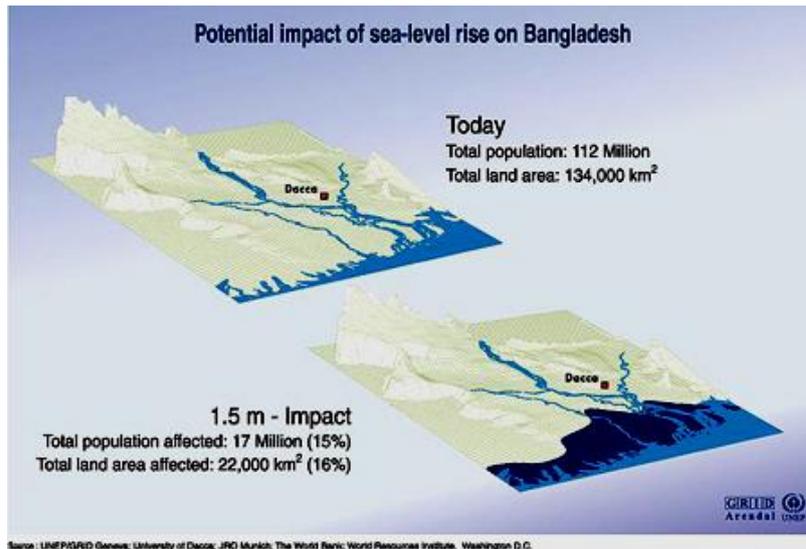
Sea level rise calculations by Prof. Tad Pfeffer

Table 3. SLR projections based on kinematic scenarios. Thermal expansion numbers are from (22).

	SLR equivalent (mm)		
	Low 1	Low 2	High 1
<i>Greenland</i>			
Dynamics	93	93	467
SMB	71	71	71
Greenland total	165	165	538
<i>Antarctica</i>			
PIG/Thwaites dynamics	108		394
Lambert/Amery dynamics	16		158
Antarctic Peninsula dynamics	12		59
SMB	10		10
Antarctica total	146	128	619
<i>Glaciers/ice caps</i>			
Dynamics	94		471
SMB	80		80
GIC total	174	240	551
Thermal expansion	300	300	300
Total SLR to 2100	785	833	2008

<http://www.sciencemag.org/cgi/content/abstract/321/5894/1340>

(5) Compensation claims



<http://www1.american.edu/ted/ice/Bangladesh.html>



<http://www.youtube.com/watch?v=UisJSsPw-U0>



<< devastated landscape and agriculture as a result of salt water intrusion

<http://www.demotix.com/news/346272/saline-water-intrusion-affects-agriculture-southern-bangladesh>

(6) Debt and peak oil

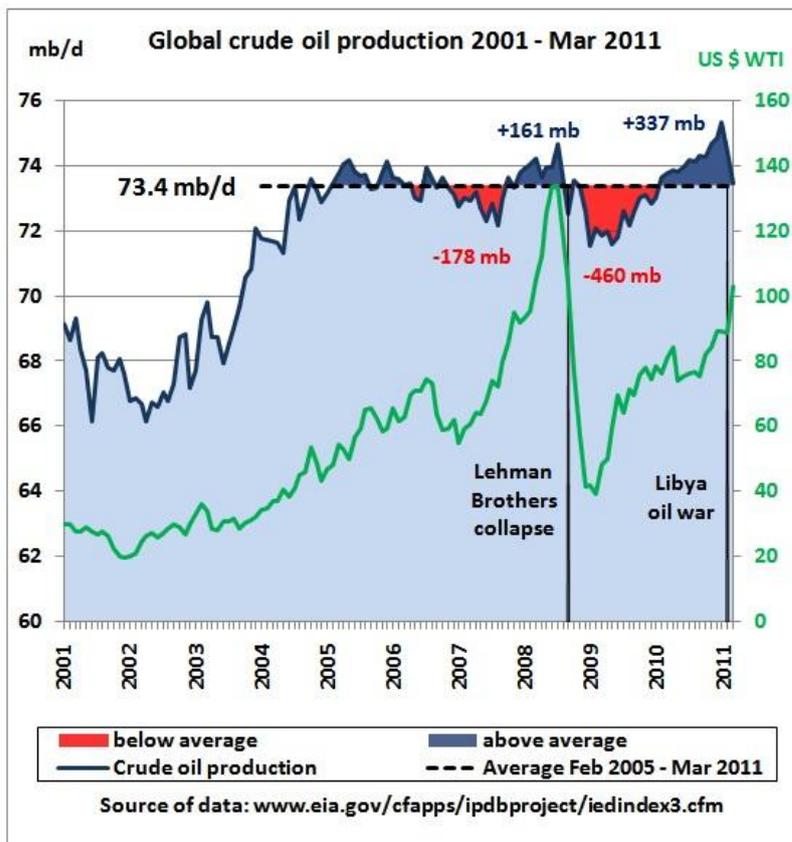
A decade-long peak oil ignorance

8/7/2011 "Yes, Prime Minister", peak oil 2006 under your watch

<http://crudeoilpeak.info/yes-prime-minister-peak-oil-2006-under-your-watch>

has already damaged our economy's ability to finance the massive projects which are needed to

- (1) mitigate the impact of peak oil itself
- (2) replace our coal fired power plants



<< from my website

<http://crudeoilpeak.info/>

“Latest graphs”

The average crude oil production in the last 6 years was 73.4 mb/d the same level achieved at the beginning of 2005

Global crude oil exports have peaked in 2005

<http://crudeoilpeak.info/oil-exports>

WA crude oil depleted by 75%

<http://crudeoilpeak.info/wa-crude-oil-depleted-by-75-pct>

Causes and Consequences of the Oil Shock of 2007-08

http://www.brookings.edu/~media/Files/Programs/ES/BPEA/2009_spring_bpea_papers/2009_spring_bpea_hamilton.pdf

Oct 2008: Peak Oil Preparation: Get Out of Debt 1/3 - Michael Ruppert

<http://www.youtube.com/watch?v=Fn4UjHp2OOM>

Only a growing economy can pay back its debt. But our oil dependent economy cannot genuinely grow if oil production does not grow. All projects must substantially increase the productivity of using oil in the economy (the factor is $\$100 / \$20 = 5$). But our governments, our banks and the media do not work on a portfolio of projects which would do that. CO2 emissions from burning oil will go down with declining conventional oil production no matter what we do. Unconventional oil will increase emissions and is too expensive and too slow to be developed to replace declining conventional oil. It will be a dead end street, just like electric or hydrogen cars. Look at the “Solutions” menu on my website.