Submission on *Planning Proposal – Ryde Civic Precinct*

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Re: http://www.ryde.nsw.gov.au/Council/Have+Your+Say/Planning+Proposal

Contents

Summary

The US and Southern Europe are basically bankrupt. This will lead to another credit crunch. Australia's mortgage debt is at a whopping 90% of GDP. It would therefore be unwise for the Council to embark on a debt financed project in this critical situation. Money was already lost in the Top Ryde shopping centre and Council would also be bankrupt if it had to pay for this mis-investment it approved.

Debt can only be paid back in a growing economy but an oil dependent economy can only grow if oil production grows. However, global crude oil production has started to peak in 2005 and Australian crude oil is depleted by 80%. So the current situation will continue, if not worsen.

Investments must be made in projects which dramatically increase oil use productivity in the existing economy, not in additional residential and office towers.

Australia will face oil shortages in the next years and an electricity crisis at the end of the decade as global warming events will force us to replace our coal fired power plants. No projects commensurate with the scale and immediacy of these 2 problems are in the pipeline. Therefore, it is unwise to increase the population in the Council area (by immigration). Natural population growth should either be decentralised to outside the commuting distance of Sydney or be accommodated in 2nd floor extensions of existing single floor housing.

Introduction

This submission comes in 4 parts. The 1st part comments on planning details, the 2nd part objects to the whole idea behind the proposal due to the advanced stage of the 2 interconnected problems of peak oil and accumulated debt, the 3rd part updates the Council on peak oil and the 4th part explains how global warming will result in an energy crisis which will make high-rises an unpleasant environment to work and live in.

Background

In a Council hearing on the Top Ryde shopping centre I warned the Council NOT to proceed with a new shopping centre and definitely not with 3,000 car spaces. Earlier this year I was not surprised to read that the centre is in receivership and here is the latest I could find:

Top Ryde debt offered to market
23/6/2011
Mr Beville's Beville Group initially had mezzanine debt with Valad Capital Services on Top Ryde, but Valad wrote off the loan, believed to be more than $90m at one stage, after failing to sell it.
The 250-shop regional shopping centre had been redeveloped at a cost of more than $800m. It was put on the market in February last year, but failed to find a buyer.
http://www.theaustralian.com.au/business-old/property/top-ryde-debt-offered-to-market/story-e6frg9gx-1226080217415

The root cause for this problem is of course that money spent on petrol cannot be spent for shopping. I have moved this topic to my column "I told you so" on my webpage
http://crudeoilpeak.info/top-ryde-shopping-centre

Ryde Council – responsible for this mis-investment by approving it in the 1st place – would be bankrupt if it had to pay for the money lost in this project as it would exceed the land value of its current office building of $55 m. If the proposed Civic Precinct goes wrong as a result of the next credit crunch (100% sure when looking at the debt problem in the US and Southern Europe), Council will not survive.

Part 1 Comments on planning details

1.1 No rail access

The proposed precinct has no access to a rail station. It is the same problem which I already mentioned in my submission on the Top Ryde shopping centre. West Ryde is too far.

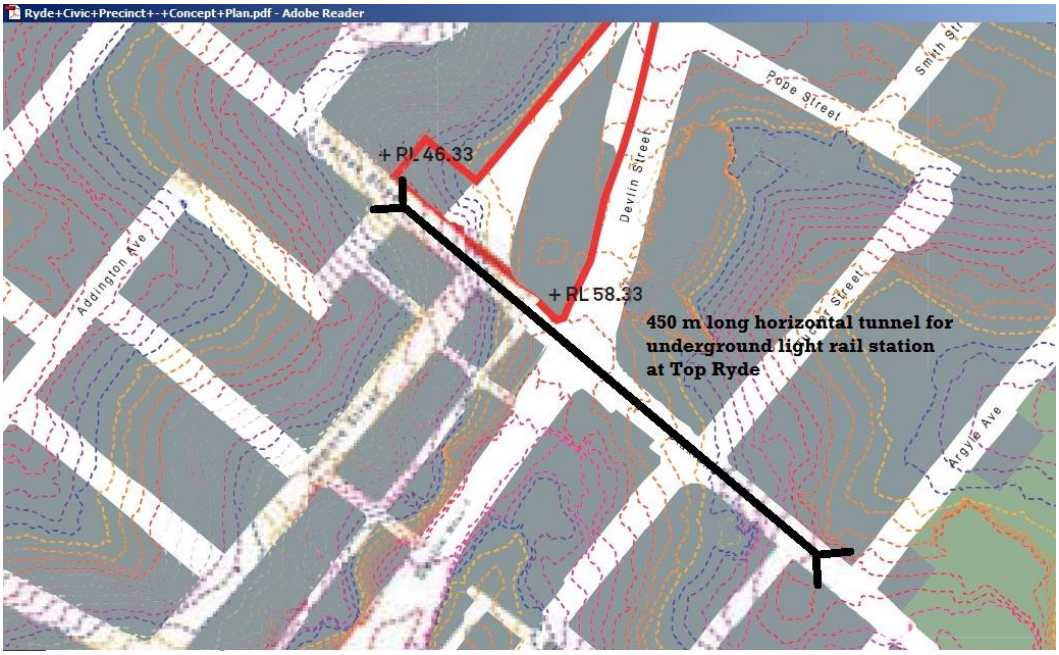
The proper rail solution for Ryde is light rail on Victoria Rd. I had proposed this to then Bennelong MP Maxine McKew in 2008. She did not act on my recommendation, the State government lost $ 400m on the Rozelle Metro,

7/10/2009 Too late for Sydney Metro Tunnels
http://crudeoilpeak.info/too-late-for-metro-tunnels

Maxine lost her seat because she had nothing to show for at the 2007 election and Ryde is still without rail.

And here we get yet another Top Ryde proposal and it is not investigated how a rail access can be integrated. It is not easy because of the steep gradients on the Western side which may

necessitate a short tunnel. But – just like with the shopping centre – car-oriented architects plan for vast underground parking (see chapter 1.2) but not for rail access.



Most economic solution for light rail from West Ryde to Top Ryde and on to Victoria Rd: a 450 m rail tunnel to connect Blaxland and Parkes St between Argyle Av and Lee Av. which could accommodate a 100 m long station.

U 7 in hilly Stuttgart, Germany, here on a median strip of a steep arterial road outside the inner city tunnel, can handle gradients of 7%. This is actually the appropriate rail solution for many parts of Sydney.

Watch the video here: in youtube, seach for “Stuttgarter U6”
http://www.youtube.com/watch?v=S7LW6LwmhnQ

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

Another solution is a rack tram. Watch this video:
http://www.youtube.com/watch?v=13TQDAOYBRI
Note the trailer for bikes.

Street view of rack tracks

Recommendation: Traffic planners should investigate how the final rail solution West Ryde – Top Ryde – Victoria Rd should look like instead of wasting the planning budget on the umpteenth pass of computer runs on car traffic projections which will never materialize.

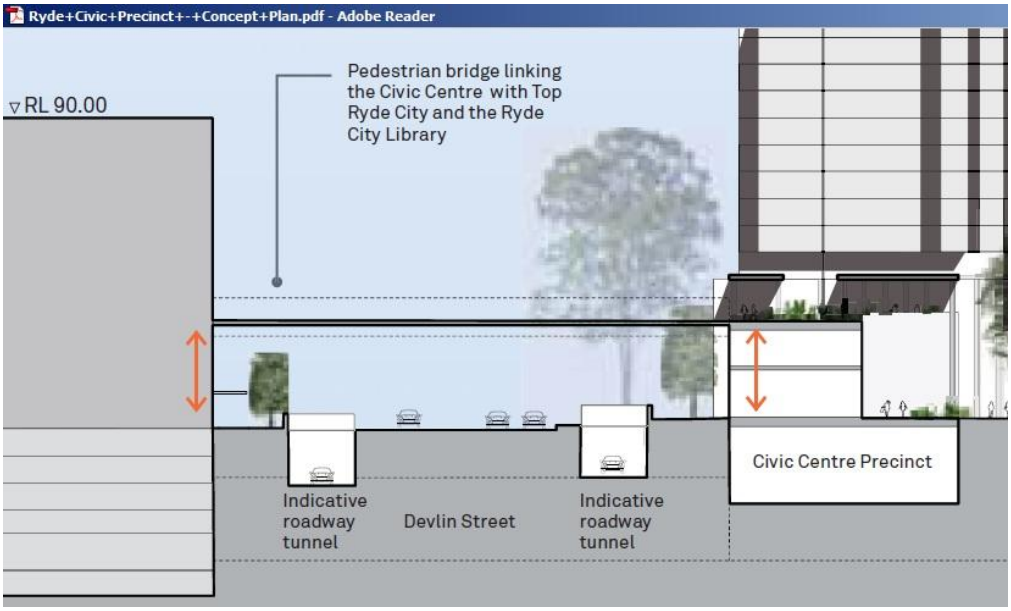
1.2 Car orientation

Instead of planning for public transport we find contradictory statements:

Quote:
• *Transport - the development will need to encourage the use of public and 'alternative' travel options, and discourage the heavy reliance on cars*

Comment: Well formulated but later forgotten. The following architect's illustration contradicts the above and demonstrates the deep rooted car culture internalised by planners. A fancy sports car is put in the centre of the view.

Notes like the ones on the reliance of cars above are just an afterthought, inserted into a business-as-usual document. A lot of the Council's planning funds have been wasted on traffic impact assessments (Appendix F) decrying the above statement. 3000 car spaces in the Top Ryde Shopping centre are now increased by another 600 under the proposed twin towers.



This cross section of the concept plan with new road tunnels also shows that there is no intention whatsoever to discourage the reliance on cars. The planning documents are inconsistent and contradictory. They would not pass semester 1 in a town planning course on the environment. It is incomprehensible why Council even pays consultants for such work.

Quote:
Consideration should also be given to the provision of electrical infrastructure to facilitate the charging of electrical vehicles (as and when their use becomes more prevalent).

Council must get used to the idea that peak oil –which is now in an advanced stage of year #7 - means the end of our car culture in this decade. How will 12.5 million Australian motorists compete for oil with 70 million new motorists in China in the next 5 years alone? Happy motoring. The number crunching on electric and other cars is here:

31/8/2011 1 billion vehicles in year #7 of peak oil
http://crudeoilpeak.info/1-billion-vehicles-in-year-7-of-peak-oil

1.3 Energy efficiency and emissions

Quote (p 27)
• *Energy - the development will need to target lower greenhouse emissions by adopting energy efficiency targets, and pursuing energy demand reduction initiatives.*

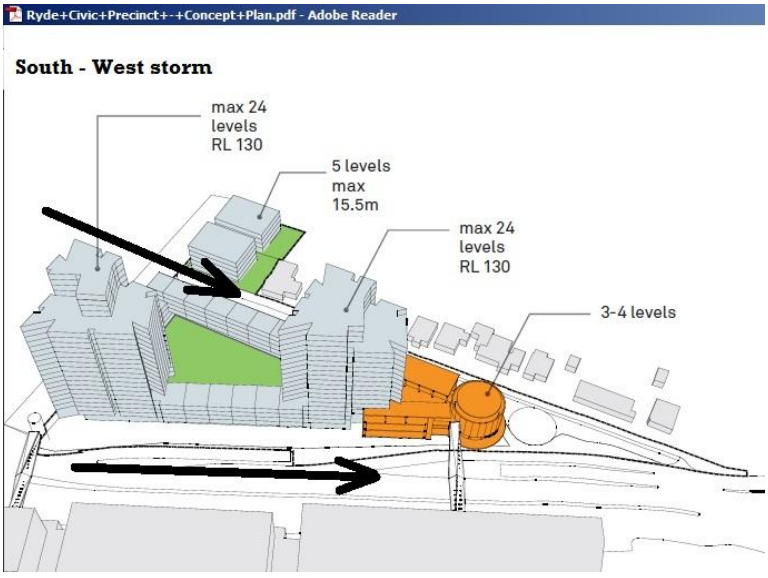
Questions: Lower compared to what? What are the total CO2 emissions in tons embedded in the new structures? What are the quantitative targets? How much CO2 was emitted to build the existing Council structures? How much of that CO2 is still in the atmosphere?

Comment: 24 floor high-rises are inherently energy in-efficient.

Quote:
Emissions - the development will address point source pollution from the buildings & their building services, to the atmosphere, watercourse, and local ecosystems

Comment: What means "address"? This is commonly used semantics for mentioning a problem – to ward off criticism it has been forgotten – which can actually not to be solved. If a design is energy-inefficient it has high emissions.

1.4 Wind tunnelling



The shape of the lower level buildings funnels wind coming from the South – West onto one of the towers. Wind speeds in the adjoining roads will also be very high. The elevation of Top Ryde is 58 m above the Parramatta River. The proposed development reaches up to an RL of 130 m. So for any storm coming from the South West, the wind speed in the top levels will be that of a skyscraper of 130/3 = 43 floors. There is no way you can have ordinary windows in such a development

and air-conditioning is a must – not energy efficient at all.

This problem will be exacerbated by global warming which will bring more severe storms – see chapter 4 on this.

When hurricane Iene lashed New York, Al-Jezeera brought this illustration:

I wish the residents good luck. Mind you, my master thesis in the 1960s was on stability of skyscrapers and a couple of these were built in Frankfurt at the time, using the computer programs developed in our team at Darmstadt Technical Uni. The wind load on a skyscraper increases with the square of the wind speed. This means if wind gust speeds go up by just 20% as a result of global warming, the load goes up by 1.2^2 = 1.44, that is 44%. Wind codes have been adjusted in the meantime but there will be many problems in future because we just don't know how global warming will evolve and what wind speeds we have to expect.

Recommendation: Expensive wind tunnelling will have to be done for this exposed site. If the structures are to survive global warming in the next, say, 50 years safety factors have to be on the high side and that will not come cheaply.

1.5 Library vs. internet

It has to be investigated whether in the age of the internet, a new library is really needed. This is not to say that books are outdated as a form of media. We will have to wait for power shortages to bring down the internet for people to appreciate books again. Hopefully they will have solar panels and batteries to be able to read the books at night.

Part 2 Objection to the whole proposal

2.1 Next credit crunch

The probability of another credit crunch is 100%. The question is only when. Council may remember it all started with the subprime mortgage crisis which was triggered by the convergence of mortgage re-sets and very high gas prices in the US which in turn were caused by peak oil (a process which started in 2005). Private and bank debt after the crash of Lehman Brothers was shifted to governments and now we have a much more severe sovereign debt crisis.

The (accumulated) debt crisis would have come anyway, but peak oil accelerated the process. Note that the financing of the Top Ryde shopping centre contributed – at a pro rata basis – to the debt crisis. Many of such unviable projects while we are at peak oil and you have the crisis we had to have. Here is a white elephant in Spain as an example:

30/6/2011 Don Quijote and the (n) ever growing air traffic
http://crudeoilpeak.info/don-quijote-and-the-never-growing-air-traffic

Debt can only be paid back in a growing economy, but an oil dependent economy cannot grow if oil production does not grow unless the productivity in the use of oil in the economy is substantially increased. However, governments do not sit on a portfolio of projects which would do that.

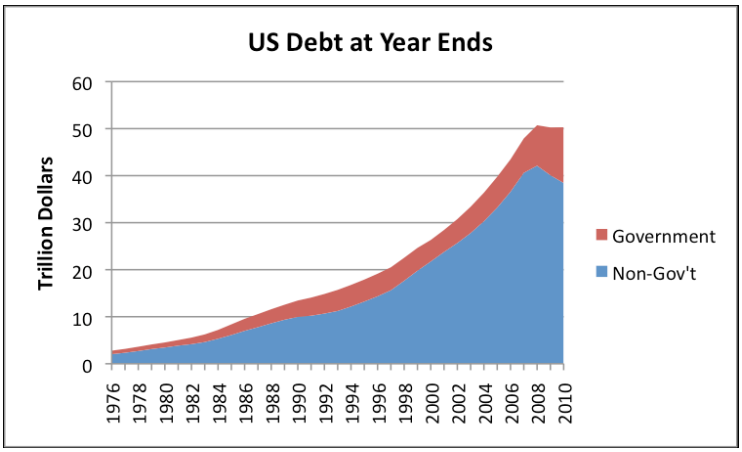
7/9/2011 NSW budget 2011/12 does not increase oil use productivity
http://crudeoilpeak.info/nsw-budget-2011_12-does-not-increase-oil-use-productivity

Therefore, we are now in a catch 22. It is incomprehensible how Council – not learning the lessons from the Top Ryde shopping centre – can in this critical situation even think of a project which increases debt.

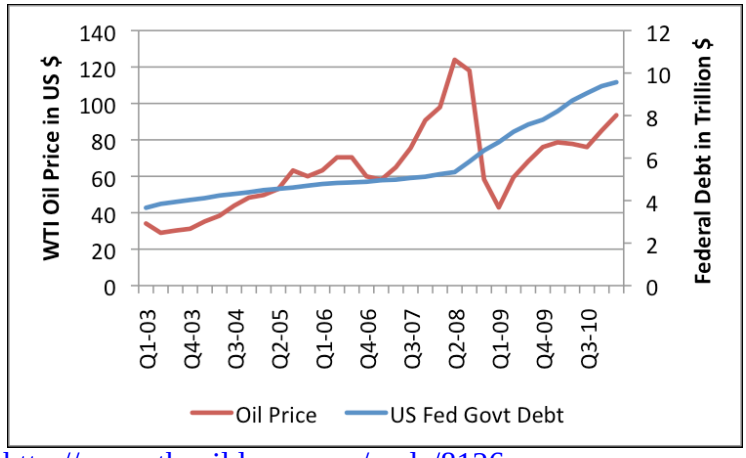
2.2 Peak oil = peak debt

The US example

Extract from Gail Tverberg's article "The Link between peak oil and peak debt"

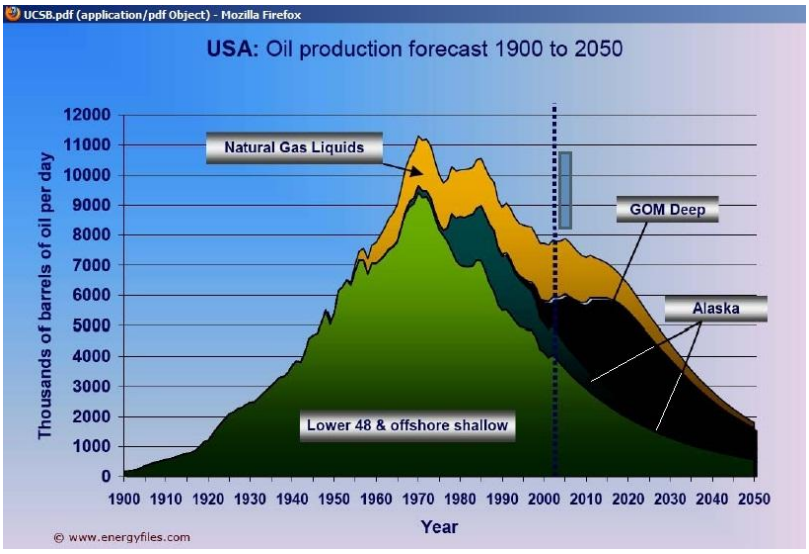


The economy is closely linked with the physical resources that underlie it. Most economists assume debt can rise endlessly, just as they assume GDP can rise endlessly.



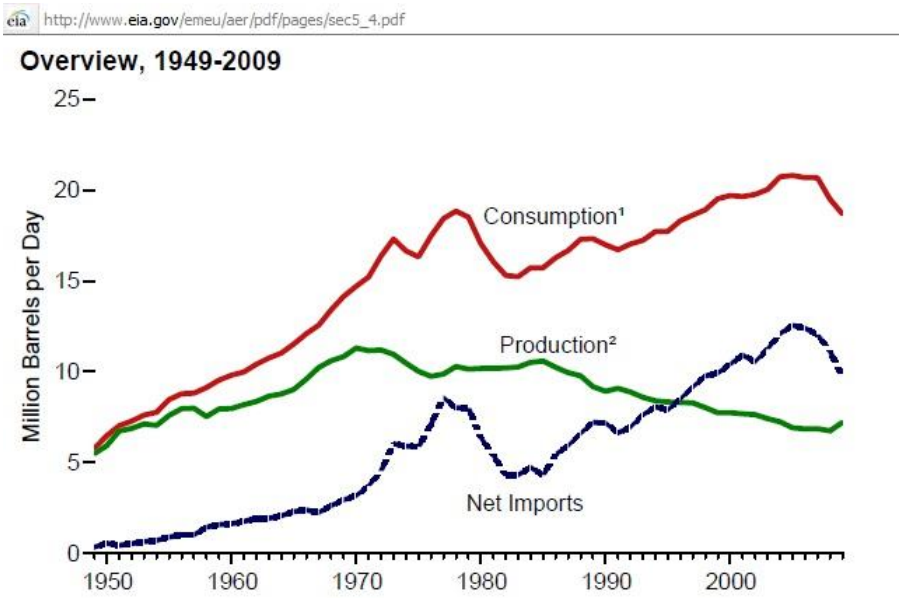
In the United States, federal external debt started increasing more quickly immediately after oil prices hit their peak in July 2008

http://www.theoildrum.com/node/8126



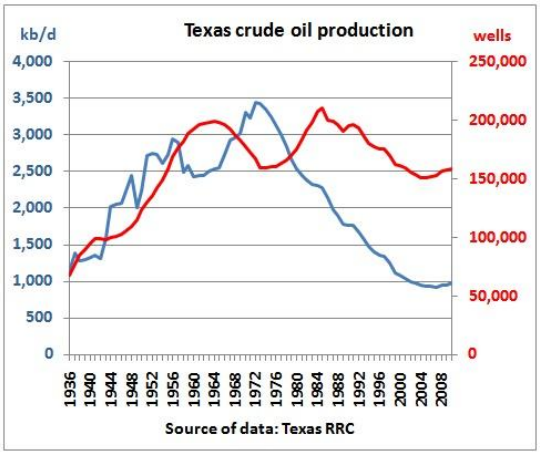
US oil production peaked in 1970. Convergence with Vietnam war.

In 1970, U.S. President Richard Nixon lifted import quotas on oil in an attempt to reduce energy costs; instead, however, this exacerbated dollar flight, and created pressure from petrodollars. Still, the U.S. continued to draw down reserves. In 1971 it had a reserve deficit of $56 billion; as well, it had depleted most of its non-gold reserves and had only 22% gold coverage of foreign reserves…..By the early 1970s, as the Vietnam War accelerated inflation, the United States as a whole began running a trade deficit……..on August 15, 1971, Nixon unilaterally imposed 90-day wage and price controls, a 10% import surcharge, and most importantly "closed the gold window", making the dollar inconvertible to gold directly, except on the open market.
http://en.wikipedia.org/wiki/Bretton_Woods_system



Crude Oil and Natural Gas Plant Liquids Field Production, 1949-2009
http://www.eia.gov/emeu/aer/pdf/pages/sec5_4.pdf

The US peak in 1970 resulted in skyrocketing crude oil imports (interrupted by the 2nd oil crisis which was triggered by peak oil in Iran before the fall of the Shah http://crudeoilpeak.info/wp-content/uploads/2011/05/Iran_Oil_Production_1965_2008_BP.jpg). These imports hit the global crude oil peak in 2005: **Game over. This is the root cause for the weak economy in the US. There is now talk of a double dip recession.**



The media are continuously misinforming the public. Latest example on 2/9/2011 from ABC TV on Texas oil shale:

JOHN KINGSTON, ENERGY ANALYST, PLATTS: This is the tip of the iceberg and you know it's a revolution that's maybe five to six years old, and how much impact it's had on the market is just mindboggling.
http://www.abc.net.au/lateline/content/2011/s3309269.htm

<< look at the mindboggling uptick of Texas crude oil production in the last years.

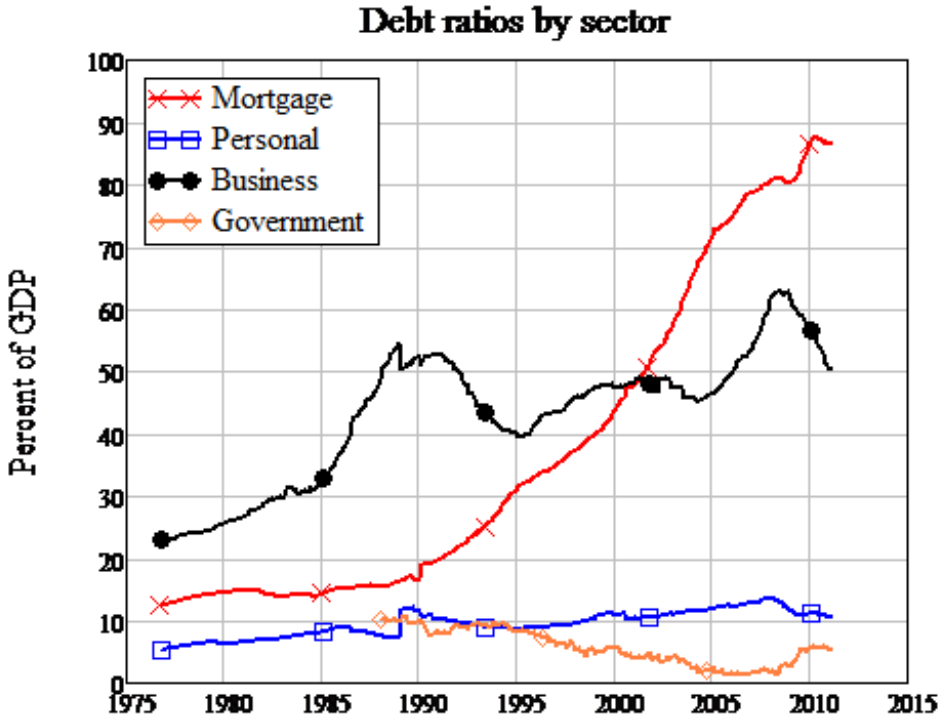
2.3 Australian housing debt

The biggest debt problem in Australia is mortgage debt. Professor Steve Keen from the University of Western Sydney monitors Australia's debt on this website:
http://www.debtdeflation.com/blogs/

My property debate presentation

http://www.debtdeflation.com/blogs/2011/06/08/my-property-debate-presentation/

Slide show:
http://www.debtdeflation.com/blogs/wp-content/uploads/2011/06/KeenThinkingAboutHousePrices.ppt



We can see that mortgage debt has reached 90% of GDP, an alarming level which now causes massive debt problems in many countries. So this problem will come here, too.

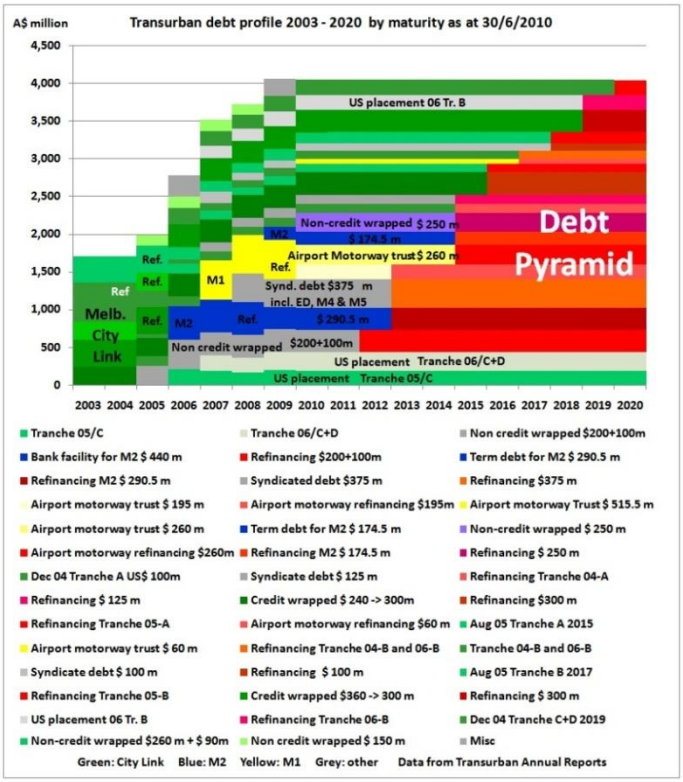
http://cdn.debtdeflation.com/blogs/wp-content/uploads/2011/03/030311_1248_AustralianD6.png

2.4 Debt defaults from oil dependent infrastructure

There will be another wave of debt defaults when toll-ways and other privately owned operators of oil dependent infrastructure face declining revenue and may not be able to roll over debt.

Transurban, for example, has just increased their debt by 5% to a whopping AU$ 4.2 bn, for an unnecessary M2 widening. Download FY 2010/11 report from the ASX website (item 16 borrowings on page 73). They could not even pay $124 m in distributions as cash, they had to print new shares, see page 82

http://www.asx.com.au/asx/research/companyInfo.do?by=asxCode&asxCode=TCL#headlines



<<< Transurban is not paying back any debt because tolls are too low. This toll-way operator is continuously pushing a debt pyramid of around $4bn into the future.

In one of the next credit crunches this will lead to Transurban's financial collapse.

Superannuation funds who have invested in such toll-way projects will lose their money. There are also around $6 bn worth of shares in danger.

A Transurban crash is a magnitude larger than the Lane Cove Tunnel or Cross – City Tunnel demise. There will be no one to buy Transurban when that happens.

9/12/2010 Will Transurban ever pay back its debt? (part 2)
http://crudeoilpeak.info/will-transurban-ever-pay-back-its-debt

My submission against the M2 widening:
http://crudeoilpeak.info/wp-content/uploads/2011/06/M2_Submission_Energy_Dilemma_For_Cars.pdf

As usual, my advice was ignored and I shall move this item into my "I told you so" column at the appropriate time.

2.5 Warning from Future Fund

Future Fund chairman warns of 20-year volatility

"When governments get themselves into **excessive debt they borrow growth from the future** and it takes a long time for growth to revert to more robust levels and for those reasons activity in the markets is weakened by government indebtedness."
http://www.abc.net.au/news/2011-08-10/david-murray-on-crisis/2833012

2.6 China boom will get stuck in peak oil

The China growth - and therefore the Australian mining boom - CANNOT continue forever. Current trends of increasing demand for oil are totally unsustainable - graph in chapter 3 on peak oil.

<< Taxis in Chongqing queuing at a filling station - out of sight

But the biggest concern for the Chinese economy is the fear of China's housing market bursting, between 2009 and 2010 there was a 41 per cent rise in housing constructions as prices soared.

But due to high costs many properties remain unoccupied. According to China's electricity authority, ***last year more than 65 million recently sold homes used no power because they are standing empty.***

http://english.aljazeera.net/news/asia-pacific/2011/07/201171362124514242.html

Look at the ghost towns in the Kangbashi district:
http://www.time.com/time/photogallery/0,29307,1975397_2094492,00.html

Now why should Australia take in Chinese immigrants and build flats in crowded Ryde? Anyone?

2.7 Metropolitan Strategy short of clean energy and a boost to emissions

There was a sunset seminar in the University of Sydney in May 2010

PRC Sunset Seminar: Planning for Sustainable Growth - Issues and Directions

http://sydney.edu.au/news/architecture/295.html?eventid=5893

Well, there cannot be sustainable growth because governments do not embark on a massive program to replace our coal fired power plants.

I asked the Director General of Planning:

"Have you calculated how many million barrels of oil, million tons of coal and million m3 of

gas you need to implement the Metropolitan Strategy until 2020? What is the CO2 absorption capacity of the atmosphere when burning these fossil fuels?"

Answer: "This question goes too deep"

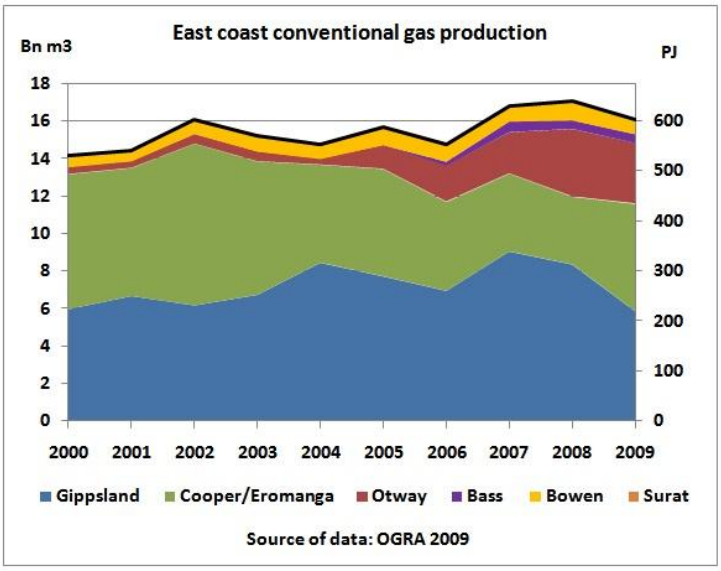
Here you are. Big plans and no energy and emission calculations. Such policies must and will fail. Councils should resist to implement such doomed plans.

Just as an example, conventional gas resources on the East Coast will be exhausted in just 20 years.

East coast: Table 2.2 - Conventional gas production by basin, pre-2000 and 2000-2009 (BCM)													Reserves 1/2010	
Basin	Pre-2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Cumulative	Cat 1	Cat 2
Bass	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.201	0.555	0.444	0.463	1.663	6.73	13.09
Bowen	10.143	0.529	0.537	0.662	0.794	0.677	0.902	0.830	0.816	0.992	0.760	17.642	10.3	0.52
Cooper/Eromanga	115.256	7.187	6.821	8.618	7.106	5.221	5.719	4.726	4.143	3.597	5.713	174.107	19.6	5.42
Gippsland	145.400	6.000	6.700	6.200	6.768	8.479	7.750	6.980	9.082	8.391	5.892	217.642	151.08	92.15
Otway	1.098	0.391	0.368	0.517	0.530	0.312	1.280	1.965	2.203	3.616	3.254	15.534	24.9	13.77
Surat	6.658	0.091	0.066	0.136	0.064	0.080	0.070	0.102	0.059	0.053	0.039	7.418	0.68	0
East coast	278.555	14.198	14.492	16.133	15.262	14.769	15.721	14.804	16.858	17.093	16.121	434.006	213.290	124.950
			http://www.ga.gov.au/products-services/publications/oil-gas-resources-australia/2009.html											

http://www.ga.gov.au/products-services/publications/oil-gas-resources-australia/2009.html

Simple R/P calculation: 213/16 = 13 years, 125/16 = 8 years



<<< East coast gas production has never been much higher than 600 PJ.

Given the high depletion levels and considering that in Gippsland up to 20% of produced gas is used for re-injection in the West-Tuna, Tuna and Turrum fields, it is unlikely that annual production is going to increase.

The oil and energy illiteracy is deep rooted in Australian parliaments. Here is the latest example:

14/9/2011

Senator MARK BISHOP (Western Australia) (17:20): .....With our **vast resources and rapidly expanding oil and gas sector** we are clearly the oil and gas capital of Australia.....Further, we do have the potential to look beyond the horizon. We are uniquely placed to be industry leaders in the South-East Asia region. It is an opportunity we should grasp. It is an ambition we should all share.
http://www.aph.gov.au/hansard/senate/dailys/ds140911.pdf

So coal seam gas to the rescue. The public is just waking up to the facts of how that will damage our agriculture. From the latest ABC 7.30 report dated 19/9/2011:

Is Coal Seam Gas worth the risk? The backlash to a billion dollar industry.

PETER MCCUTCHEON: The sudden expansion in coal seam gas extraction is due to new Australian technology, and growing demand - particularly from China for cleaner fossil fuels. There are several thousand wells like this one in Queensland and New South Wales at the moment, but over the next few years, the numbers will grow dramatically. How many will eventually be in operation?

RICK WILKINSON: There's typically about 2,000 to 3,000 per project, and building up over time - depending on what is the size of the end use of that. So, tens of thousands of wells.
http://www.abc.net.au/7.30/content/2011/s3321223.htm

"**Cleaner fossil fuels" ???** Where are the government agreements to leave the energy-equivalent coal in the ground for good? Because only such an approach would reduce overall emissions. But the way this is going we are just adding more CO2 to the atmosphere.

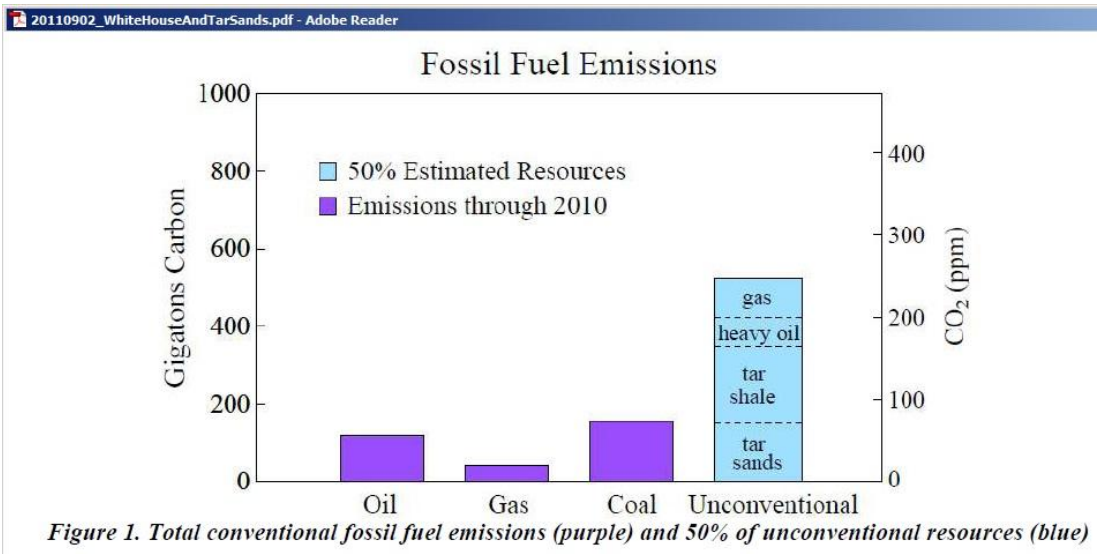
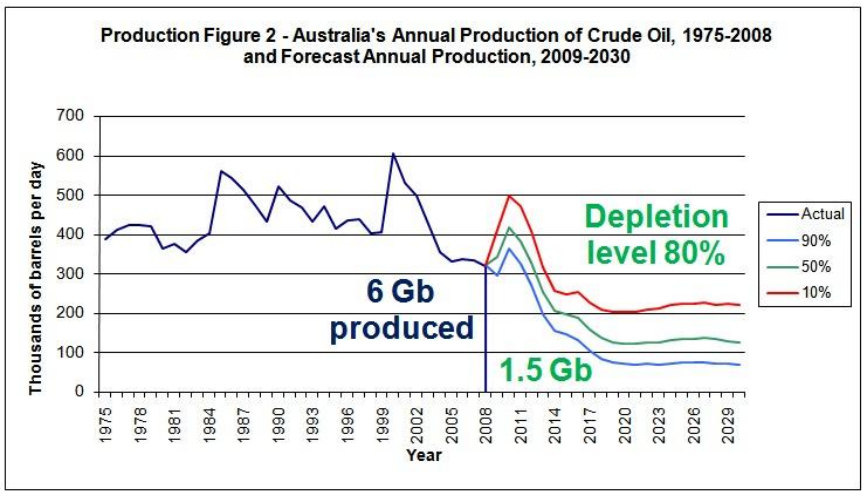


Figure 1. Total conventional fossil fuel emissions (purple) and 50% of unconventional resources (blue)

http://www.columbia.edu/~jeh1/mailings/2011/20110902_WhiteHouseAndTarSands.pdf

If the whole world exploited 50% of its unconventional gas CO2 concentrations would increase by 50 ppm. We cannot afford this.



<<< And let's have a look at the "vast" oil resources – 80% of crude oil are gone. In year #7 of peak oil.

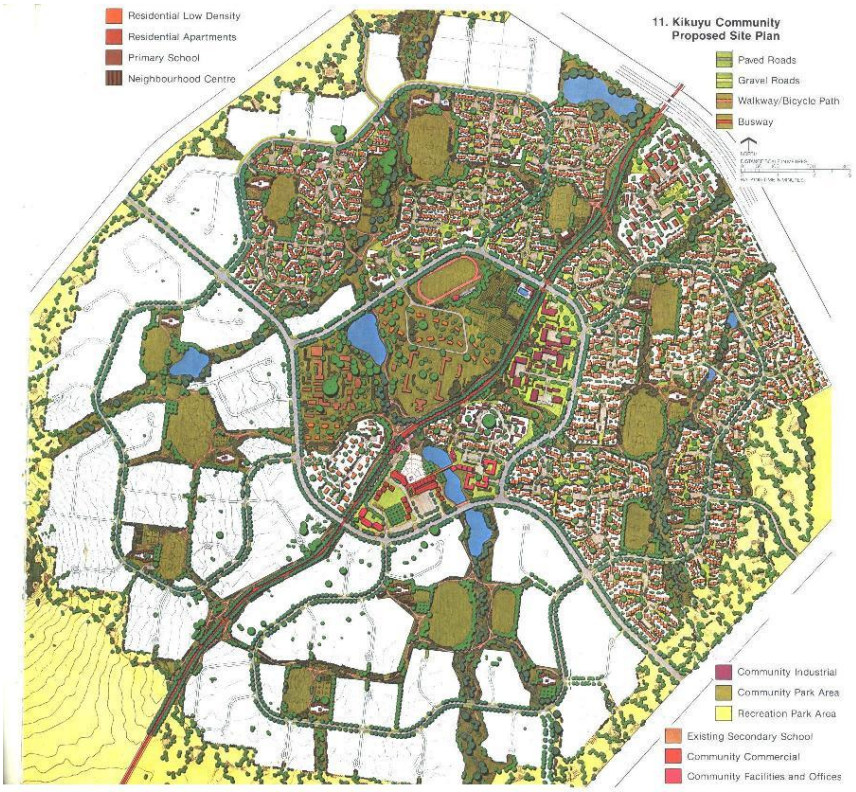
I had to document it here:

http://crudeoilpeak.info/australian-senate-ignores-80pc-depletion-level-of-crude-oil

Conclusion: The more residents there are in a suburb, the longer the petrol lines at the filling stations.

2.8 Sustainable cities

An energy efficient city has low rise developments without lifts and air conditioning, like in this plan which I worked on in the 70s in Tanzania's new capital Dodoma:



4-5 of these communities at 30-40 K each on around 400 ha can form a sustainable city 150K-200 K size where half of the residents can walk to and from work in community based business centres and light industrial areas. More details are here:

26/8/2009 Sustainable Cities Master Plan
http://crudeoilpeak.info/sustainable-cities-master-plan

It is impossible to make Sydney as a whole sustainable. It will disintegrate into whatever subcentres can survive, held together by whatever electric rail is physically available when the curtain falls. That is why Sydney should not be allowed to add another million population.

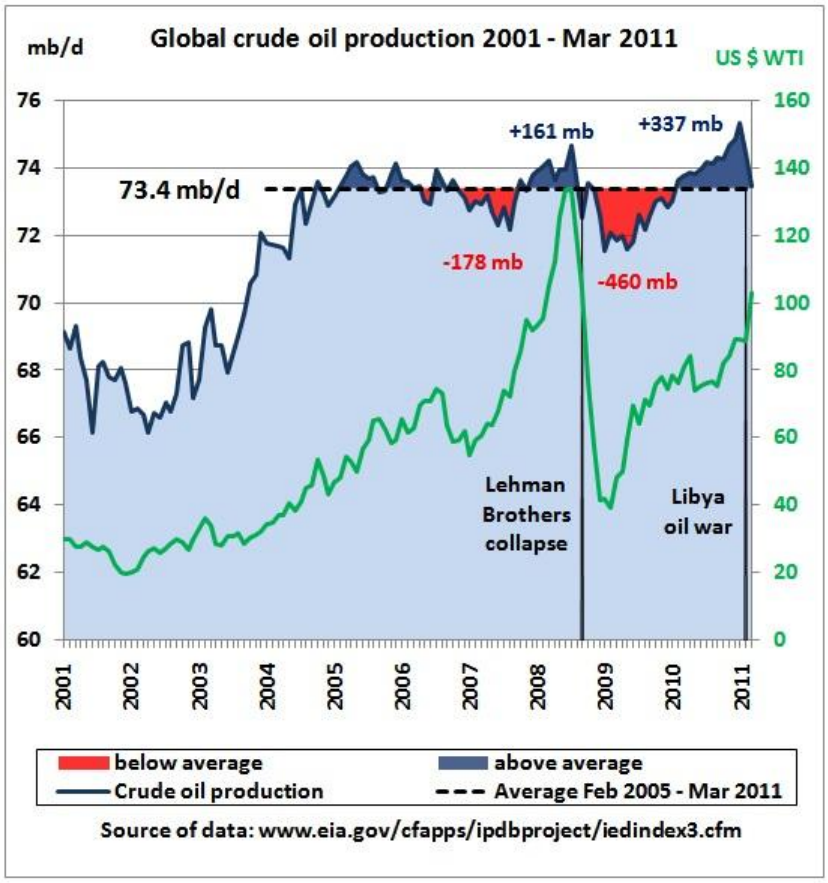
2.9 Population projections

The Metropolitan growth strategy is based on immigration. Natural growth at realistic life expectancies would peak at just 24 million in the 2030s

9/4/2010 Australian Population Scenarios in the context of oil decline and global warming
http://crudeoilpeak.info/australian-population-scenarios-in-the-context-of-oil-decline-and-global-warming

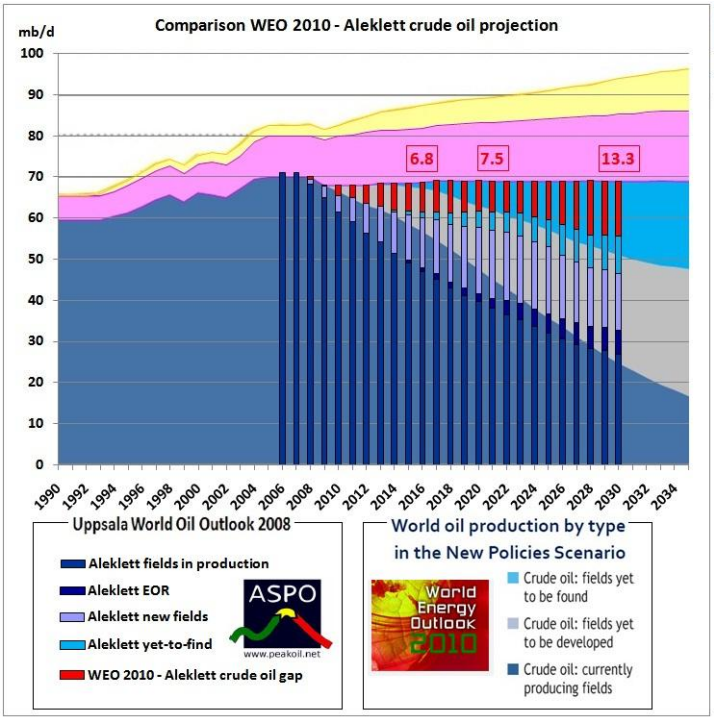
Part 3: Peak oil

Peak oil – which is a process - started in 2005



http://crudeoilpeak.info/latest-graphs

By 2020 at the latest – with 8 mb/d less crude oil - the world is going to be in a deep oil crisis



http://crudeoilpeak.info/aspo-2020-crude-oil-production-down-by-around-8-mbd

Australian oil supplies

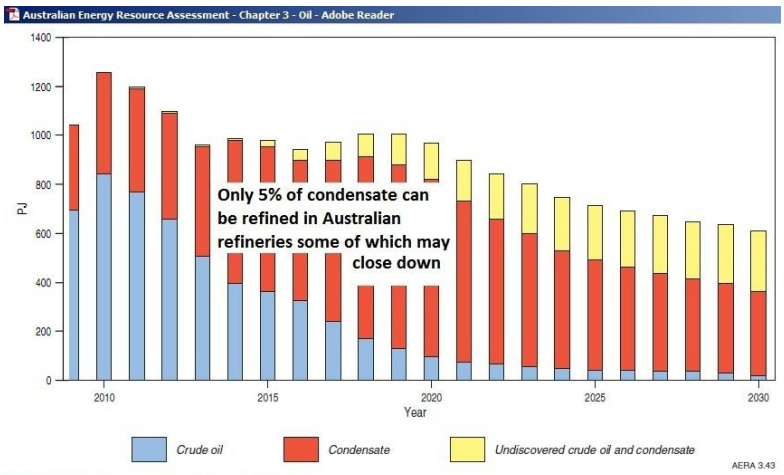
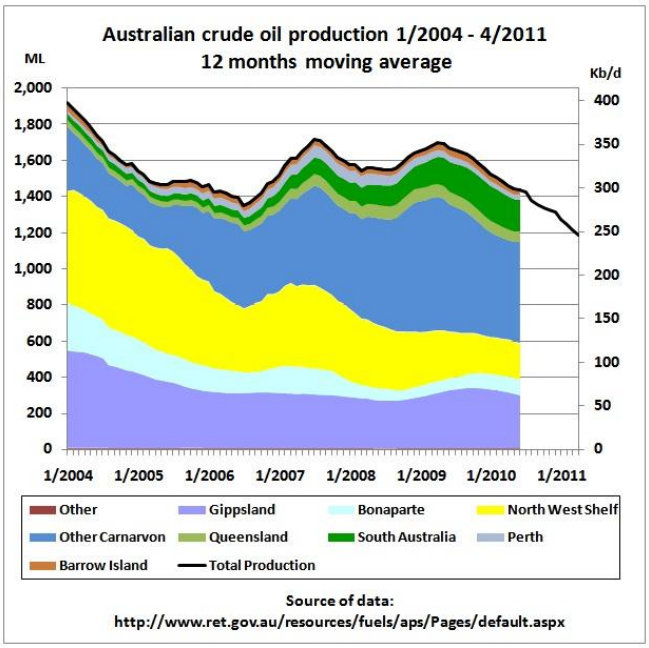
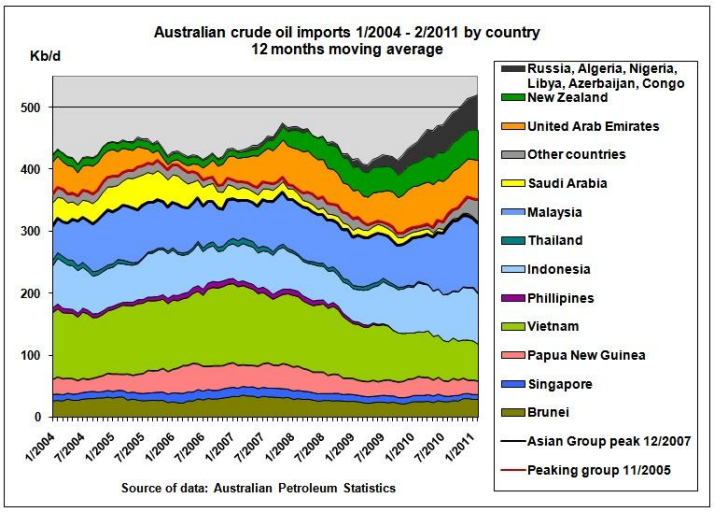


Figure 3.43 Australian oil production outlook from proven hydrocarbon basins

http://www.abare.gov.au/publications_html/energy/energy_10/ch_3.pdf

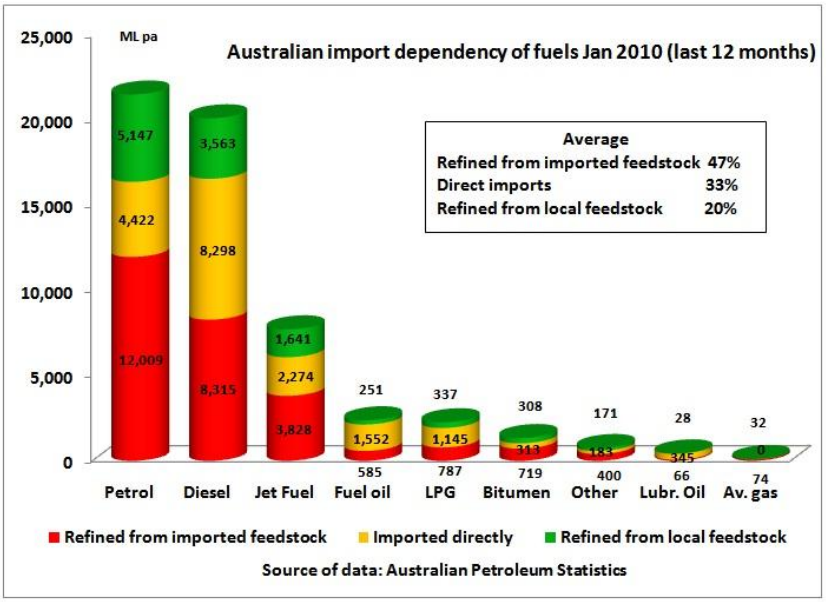


http://crudeoilpeak.info/australian-crude-oil-production

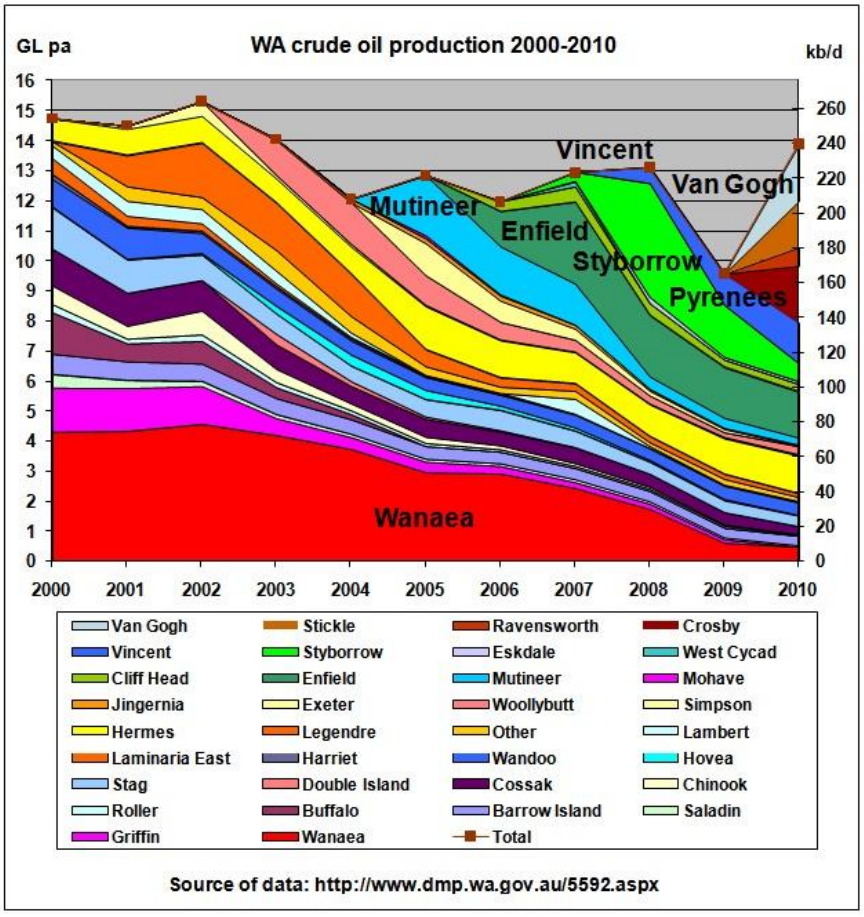


http://crudeoilpeak.info/australian-graphs/oil-and-fuel-imports

Production down and imports up: this is clearly unsustainable



http://crudeoilpeak.info/australian-graphs/oil-import-dependency

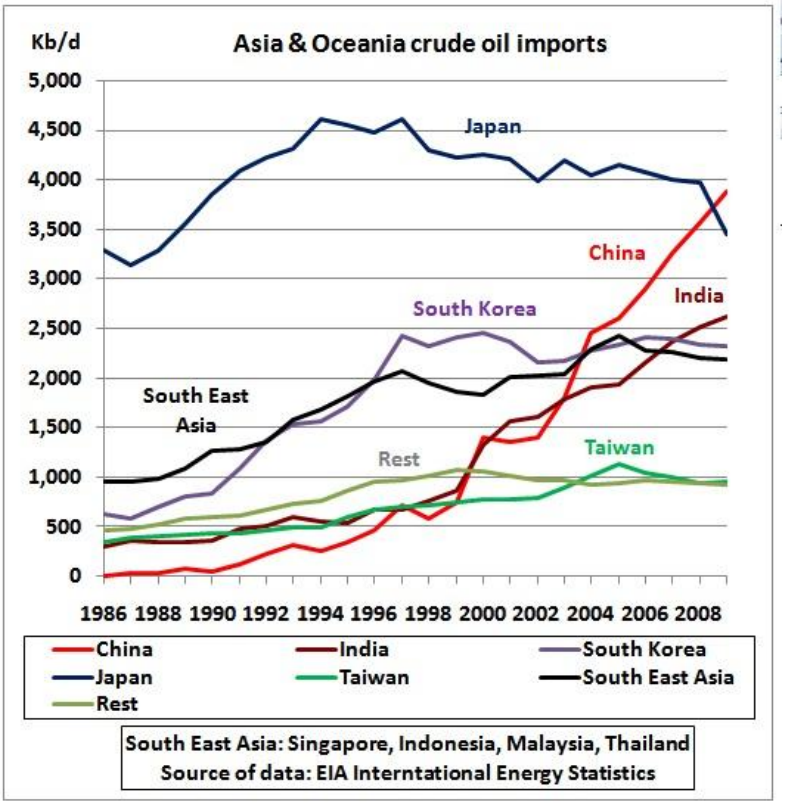


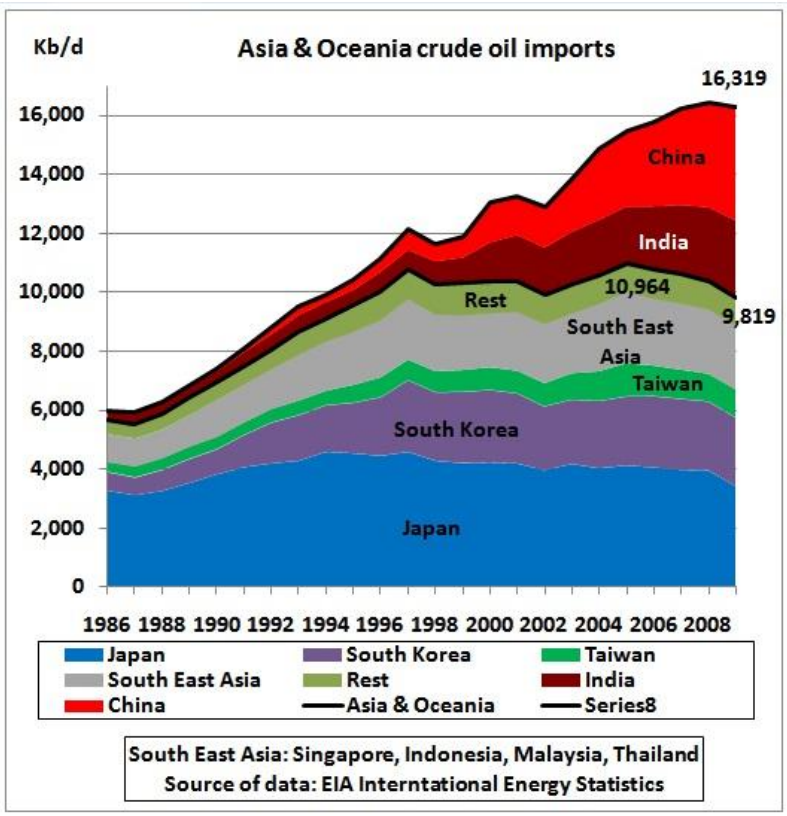
11/7/2011 WA crude oil depleted by 75%
http://crudeoilpeak.info/wa-crude-oil-depleted-by-75-pct

Visit my web site for updates and more details

http://crudeoilpeak.info
Crude Oil Peak
#1 in Monitoring the Global Crude Oil Peak

Asia is not immune from peak oil

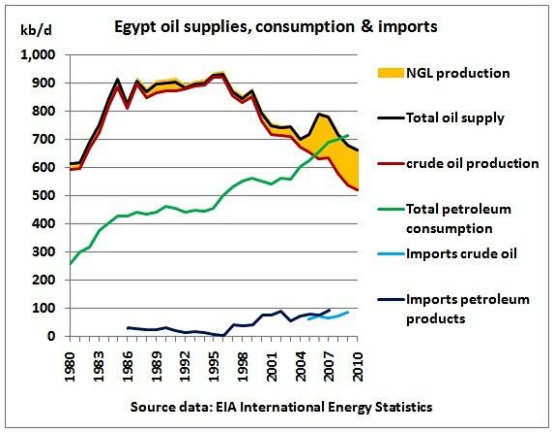




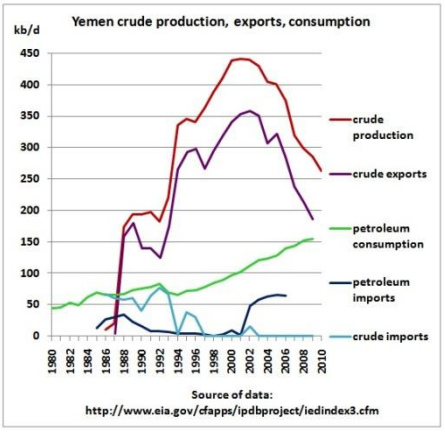
Asian crude oil imports – except China and India – were around 10 mb/d since the mid 90s, had a 2nd peak in 2006 at 11 mb/d and then declined by around 1 mb/d. Given that global crude oil started to peak in 2005, these "savings" are nowhere near enough to allow China and India to grow as they did in the last 10 years.

Disintegration of MENA countries

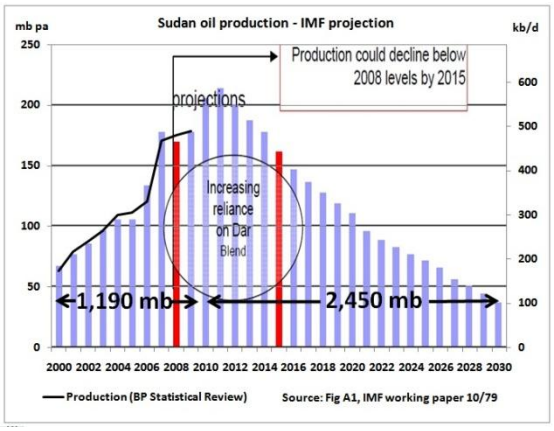
If the Arab uprising continues at current speeds and the Saudi domino falls, we'll see the end of the world economy as we have known it. 2015 is a good bet.



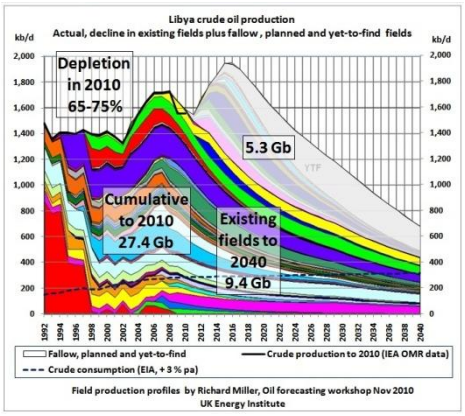
Egypt must import oil now at world market prices



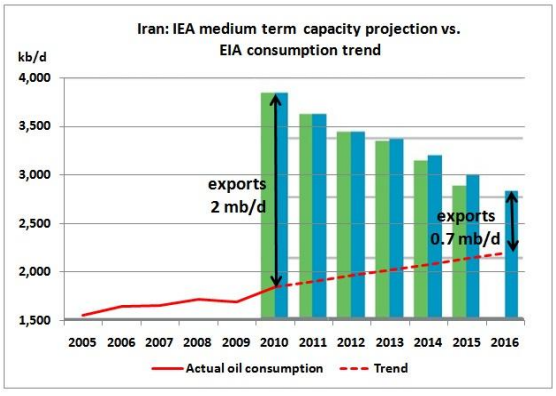
Yemen's oil peak



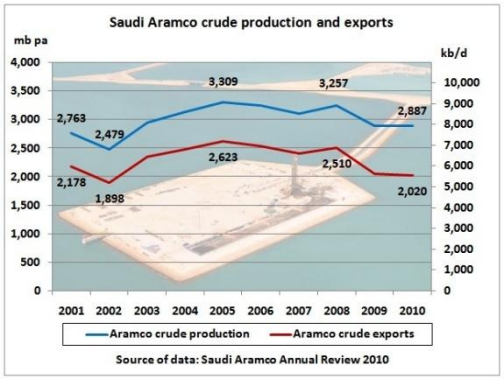
Sudan: oil in the South, pipelines in the North



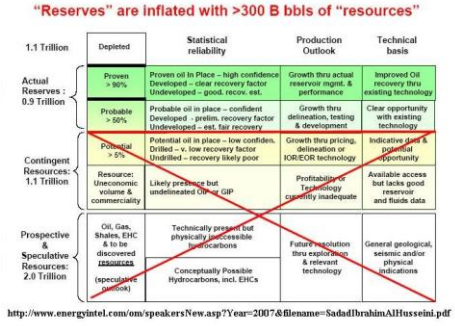
Libya: surprises ahead



Iran heading towards oil export extinction



Saudi exports have peaked

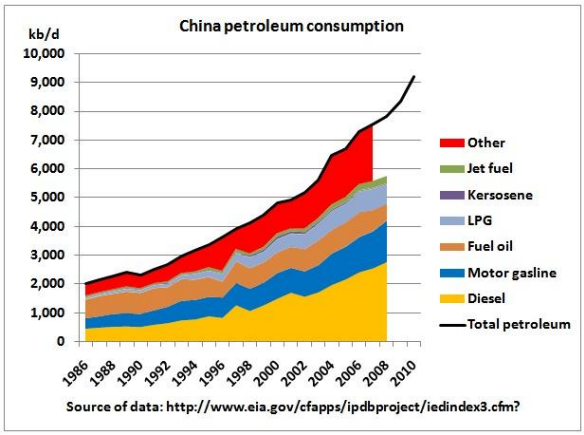


<<< OPEC paper barrels crossed out by Ex-Saudi Aramco chief Sadad al Husseini at an oil and money conference in October 2007 in London, organised by Energy Intelligence.

The equivalent of 30 years OPEC oil supplies are speculative resources, not easily or economically recoverable reserves.

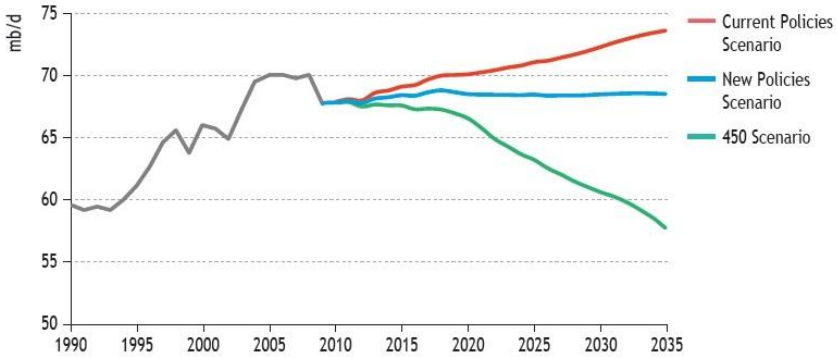
China, the elephant in the oil demand room

In the next 10 years, 70 million new Chinese cars will compete with 12-13 million cars in Australia. Who will win?

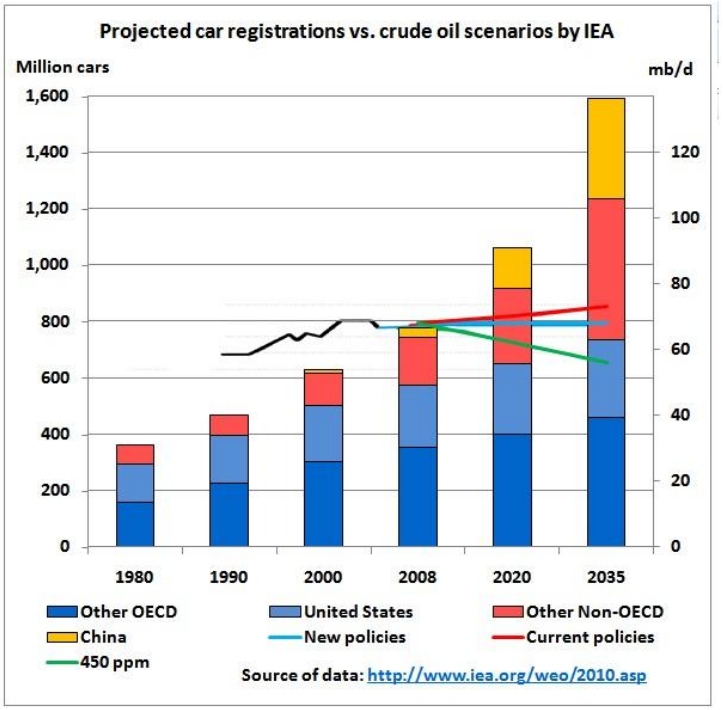


Left: cars in Shanghai Right: skyrocketing petroleum consumption

Figure 3.16 • *World crude oil production by scenario*



http://www.iea.org/weo/2010.asp



World car fleet versus IEA oil production scenarios: too many cars
http://crudeoilpeak.info/1-billion-vehicles-in-year-7-of-peak-oil

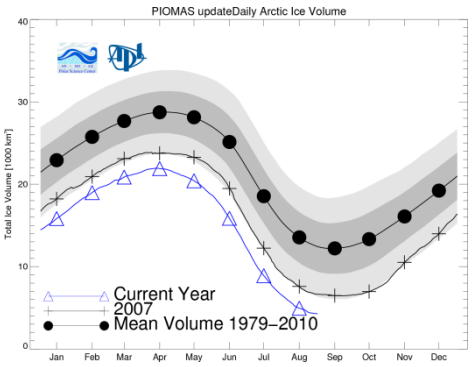
Part 4: Future of coal 10 years – will lead to serious electricity crisis

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

One of the critical tipping points is the melting of the Arctic summer sea ice which will not only lead to more absorption of sunlight from space but will also change the whole climate on the Northern hemisphere in yet unknown ways.



Arctic sea ice volume estimated by NSIDC >>

Current trends suggest that sea ice volume in September goes towards zero already in this decade.
http://psc.apl.washington.edu/wordpress/research/projects/arctic-sea-ice-volume-anomaly/

At present, every month is wasted in Parliamentary debates instead of getting on with the job of replacing coal fired power plants with renewable energies like solar and wind. Moreover, new, energy hungry projects like Barangaroo and many other high rise developments have been approved and/or are under construction, which will add to more demand for coal fired electricity. This energy ignorance will worsen the evolving electricity crisis.

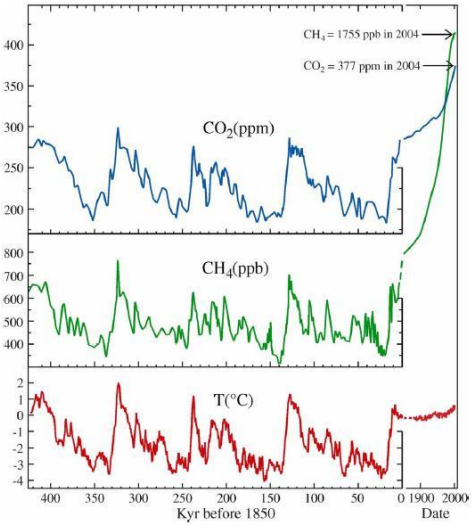
http://www.heraldsun.com.au/news/special-reports/floods-halt-brisbanes-economy/story-fn7kabp3-1225986227911

Flooded coal mine near Rockhampton: Revenge of nature as moisture in the atmosphere increases with global warming. Read Tony Jones' interview with James Hansen:
http://www.abc.net.au/lateline/content/2008/s2764523.htm

Why 350 parts per million of carbon dioxide in the atmosphere is a goal we must achieve if our children and grandchildren are to avoid global meltdown and the horrific storms of the book's title http://www.stormsofmygrandchildren.com/storms_of_my_grandchildren.html

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



<<< Natural climate change in the last 400 K years was caused by orbital changes plus CO2 feed back.

Ice ages: CO2 around 200 ppm, temps 5 degrees lower, sea level 120 m lower

Warm periods: CO2 around 300 ppm

CO2 currently 387 ppm. Therefore, we have kicked planet Earth out of its natural rhythm, back by around 3 million years. Different planet Earth.