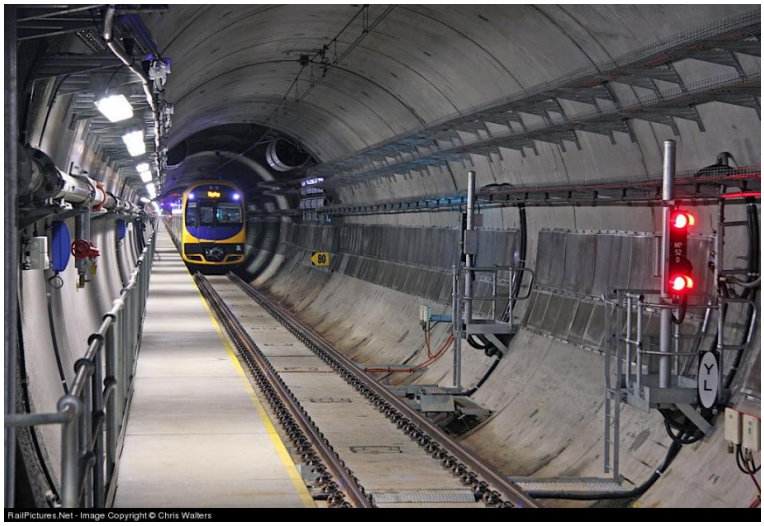
Too late for big rail tunnel projects in year #7 of peak oil



Final version

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Contents

This submission is in response to an invitation to comment on the latest version of the North West Rail Link http://northwestrail.com.au/ and comes in several parts.

Part 1 accepts the rail tunnel proposal but contains some recommendations what analysis has still to be done and how the proposal can be improved.

Part 2 puts the whole rail tunnel proposal into question and comes up with alternatives

Part 3 looks at Sydney from a European perspective, i.e. what Sydney should have done in the last 50 years

Part 4 contains statistical evidence on peak oil and global warming both processes of which mean that we are entering a period of oil and energy shortages

Executive summary

We have at least 4 converging problems in the whole world economy: peak oil (started 2005), social unrest in MENA countries, accumulated debt and increasing CO2 in the atmosphere. Peak oil is linked to both the Arab uprising and the debt problems. Asia and Australia will not be able to escape the consequences of these developments which put concrete time and budget limits for a proper policy response to, and action on, these challenges. This submission shows documentary evidence that the time frame in which **all** public transport projects in Sydney must be completed is 2020 at best, if not 2015, depending on how fast the geopolitical situation in the Middle East worsens, not to mention possible sovereign debt failures in the US and Europe. In other words we are in an emergency situation in which we cannot afford to spend (and wait for) $8 bn on just 20 km of rail. The solution is to use road corridors including toll-ways and freeways for either electric rail or electric trolley buses. If this strategy is not adopted **immediately**, Sydney's long distance commuting by car will become dysfunctional in the above mentioned time frame.

Peak oil means that our car culture will come to an end in this decade

Part 1: Recommendations on the NWRL tunnel proposal

(1) The 2005 patronage study by Parsons Brinkerhoff (file 887_object.pdf) is ignorant of peak oil and the debt crisis.

"In 2001, 23% of the 116,500 daily trips to work from North West Sydney were to areas in the global arc…….In 2031, it is forecast that the **global arc** will be the destination for 25% of the 164,000 daily trips to work" (page 5.5.)

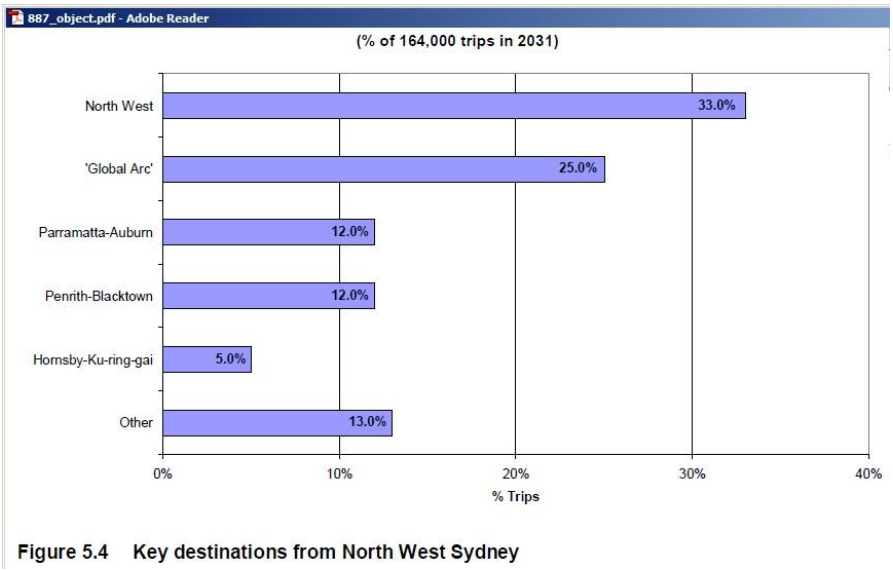


Figure 5.4 Key destinations from North West Sydney

What is the basis for this forecast? Planners must have applied an average growth rate of, say, 1.3%, on current trends. But in 2031, there won't be a global economy anymore due to severe oil and energy shortages. What type of jobs will we have in 2031? Global warming will force us to retrofit our cities which means less office jobs and more trades people out in the suburbs.

Similarly, the travel demand from GHD (file Environmental Assessment Appendix B.pdf) based on 2031 employment targets has to be re-visited.

Environmental Assessment Appendix B.pdf - Adobe Reader

Table 3.2 Employment Growth in Key Centres served by the North West Rail Link

Centre	2001 Employment	2031 Employment Target	% Increase
Centres directly served by the North West Rail Link			
Norwest Business Park	4,651	15,000	223%
Castle Hill	9,091	12,000	32%
Rouse Hill	937	9,000	861%
Total	*14,679*	*36,000*	*145%*
'Global Arc' Centres served by the NW-CBD-SW rail link			
Macquarie Park	32,308	55,000	70%
Chatswood	22,923	28,000	22%
St Leonards	25,166	33,000	31%
North Sydney	49,160	60,000	22%
Sydney	331,572	380,000	15%
Sydney Airport	36,063	55,000	53%
Total	*497,192*	*611,000*	*23%*

Source: City of Cities – A Plan for Sydney's Future, NSW Government, 2005. p95

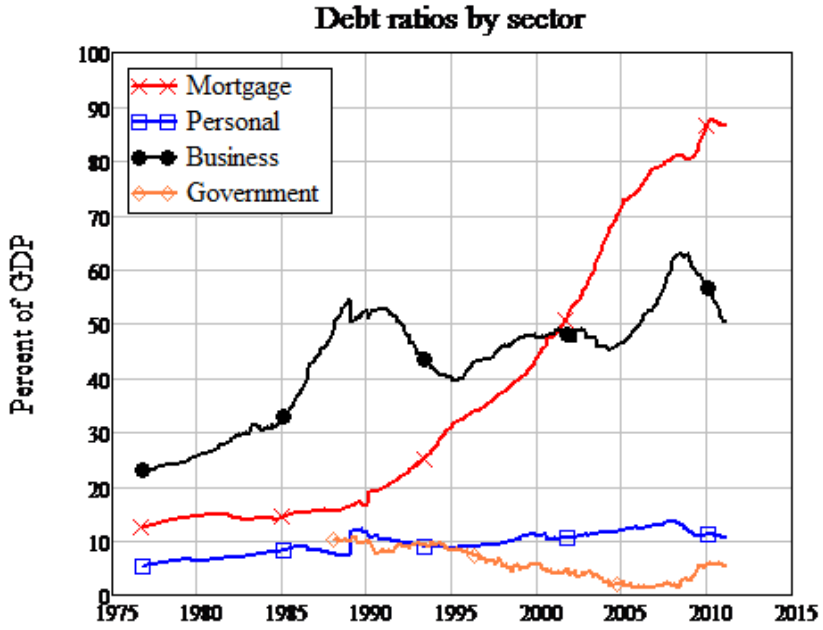
All these studies were done around 2005, just when peak oil started.

At a sunset seminar in May 2010 at the University of Sydney
PRC Sunset Seminar: Planning for Sustainable Growth – Issues and Directions
http://sydney.edu.au/news/architecture/295.html?eventid=5893
I asked this question:

> "Have you calculated how many million tons of coal, how many million m3 of gas and how many million barrels of oil you need to implement the Metropolitan Strategy until 2020? What is the CO2 absorption capacity for these fossil fuels?
>
> Answer: "Oh, that question is too hard"

With such energy and climate ignorance, the whole Metropolitan strategy is in doubt. So this patronage study has to be re-viewed from scratch.

A separate analysis for **existing** residential/commercial (**letterbox/household survey**) and future residential development has to be done which needs to take into account limits set by mortgage debt, now at 90% of GDP. It should NOT be assumed that the expected urban growth will actually happen. Immigration and therefore growth will be reduced as soon as petrol shortages start.



In Australia, the biggest debt problem is with mortgages which are at a whopping 90% of GDP. The above graph is from Prof. Steve Keen's debt watch site (University of Western Sydney). This debt cannot continue to grow.

All the North West and South West growth plans with new subdivisions and housing estates are totally unrealistic. http://cdn.debtdeflation.com/blogs/wp-content/uploads/2011/03/030311_1248_AustralianD6.png

> Has the NSW government calculated how much it will cost to develop the NW growth area and where the debt financing will come from?

(2) An analysis of competition from the widening of the M2 has to be done. Do NOT assume eternal traffic growth. Evaluate impact of car pooling

m2ueavol1ch91boperationttia.pdf - Adobe Reader

Table 32 Forecast M2 Motorway eastbound daily traffic volumes

From	To	Eastbound					
		2011 Base	2011 Up-grade	2011 Impact	2021 Base	2021 Up-grade	2021 Impact
Old Windsor Road	Windsor Road	31,800	33,950	2,150	37,550	40,050	2,500
Windsor Road	Pennant Hills Road	41,200	42,400	1,200	49,750	51,330	1,580
Pennant Hills Road	Beecroft Road	36,150	37,850	1,700	44,750	46,830	2,080
Beecroft Road	Christie Road	40,350	42,500	2,150	49,250	51,830	2,580
Christie Road	Lane Cove Road	36,250	40,150	3,900	42,900	47,810	4,910
Lane Cove Road	Delhi Road	26,950	30,750	3,800	32,500	37,310	4,810
Delhi Road	Epping Road	19,200	22,000	2,800	25,850	29,810	3,960

The above traffic projection is from Transurban's web site. One cannot have growth on both the M2 and the NWRL

(3) Construction costs have to be reviewed. The cost of oil after peak oil has changed everything. Leighton contractors miscalculated their road tunnel bid in Brisbane

$400m lawsuit turns spotlight on issues of governance

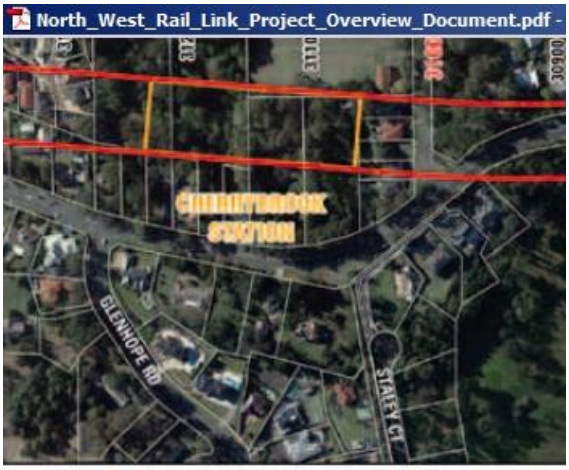
*Maurice Blackburn will allege that Leighton breached the continuous disclosure provisions of the Corporations Act in failing to tell investors information regarding the material cost increases and delays on the **Brisbane Airport Link** and Victoria's desalination project and the need for further write-downs on Al Habtoor in the Middle East before April 2011.*

http://www.smh.com.au/business/400m-lawsuit-turns-spotlight-on-issues-of-governance-20110831-1jm3t.html

Similar law suits wait for Transurban as they failed to inform their shareholders about peak oil and the particular risks involved.

(4) On the basis of (1), (2) and (3) calculate the fare between Epping and all stations. Find out how that integrates into the existing fare structure Quakers Hill - CBD
(5) The current proposal with a few number of stations can be characterized as a regional underground express rail line with the objective to connect the city centre of a new city in the North West (attractive in builder's brochures) with what is called the "Global Arc". It will have a limited function of solving transport problems of the existing suburbs. Therefore, more stops are needed.
(6) One additional station in Norwest business park is needed
(7) The industrial and commercial area around Victoria Av. also needs a stop
(8) Only 1 stop between Epping (or Cheltenham) and Castle Hill is also not enough
(9) An analysis of phasing the project is required because full funding may not be available. Do NOT assume the whole project can ever be completed even if started

soon. Therefore, each section, e.g. Castle Hill – Epping should be completed and commissioned before e.g. Castle Hill – Norwest Park is started. It is better to have an operational tunnel of 10 kms instead of a mushroom tunnel of 20 kms



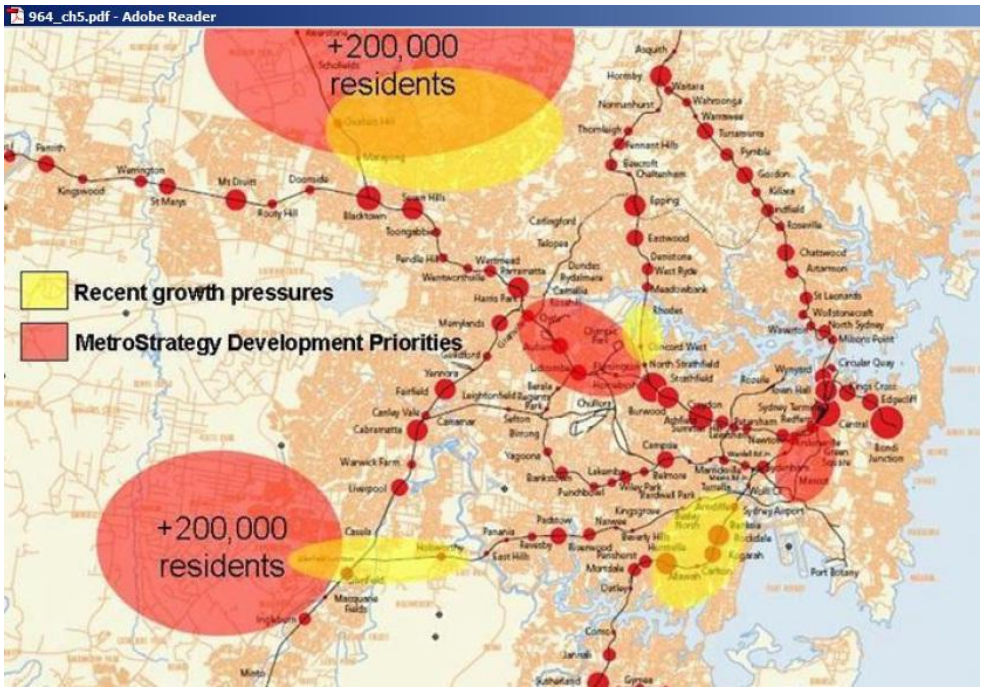
(10) Reduce depth of stations and modify their design to minimize fuel consumption during construction and operational power requirements later

(11) Tunnel should surface at Cheltenham to optimize operational flexibility for trains to come from or proceed to either Strathfield or Chatswood. This would also have the advantage that the level at which the line enters into the Eastern part of Castle Hill Rd would be higher and therefore the next station not as deep

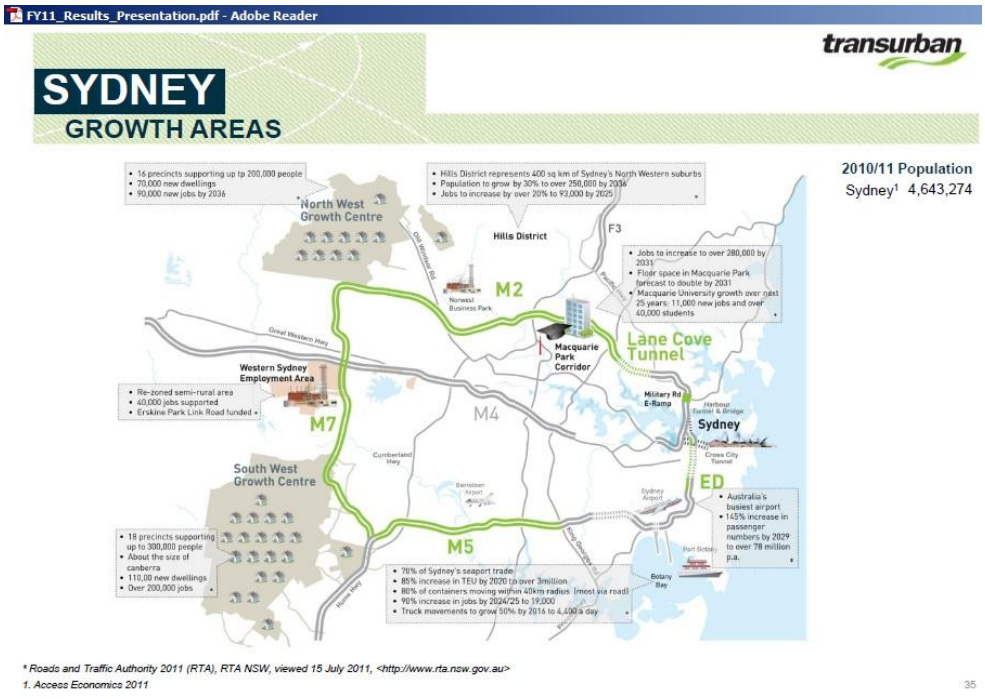
<< All stations are too deep (and therefore very costly in construction and operation) because the vertical alignment is designed for heavy double deckers. Single deckers could manage steeper gradients and therefore tunnels closer to the surface RL.

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 the North West.

Competition with M2



From chapter 5 of the previous NWRL documentation



From the FY 2011presentation of Transurban

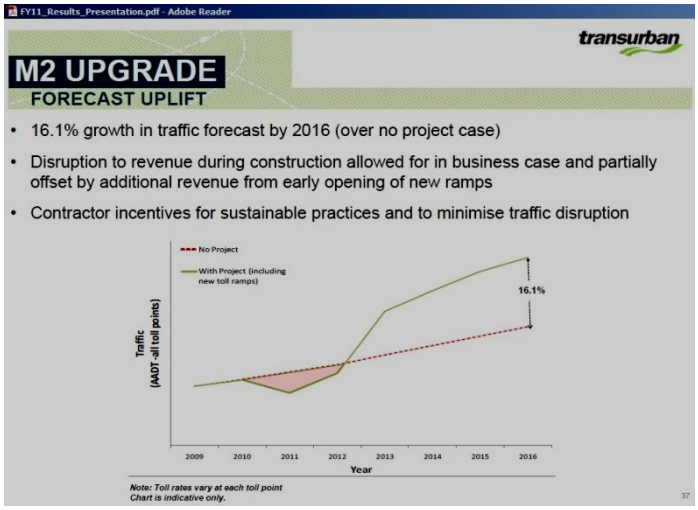
Both the NWRL and Transurban are laying competing claims on providing transport for the same housing areas the finance of which is by no means guaranteed. These plans are totally ignorant of peak oil and peak debt.

M2 w

9/4/2010 Australian Population Scenarios global warming
http://crudeoilpeak.info/australian-populatio oil-decline-and-global-warming

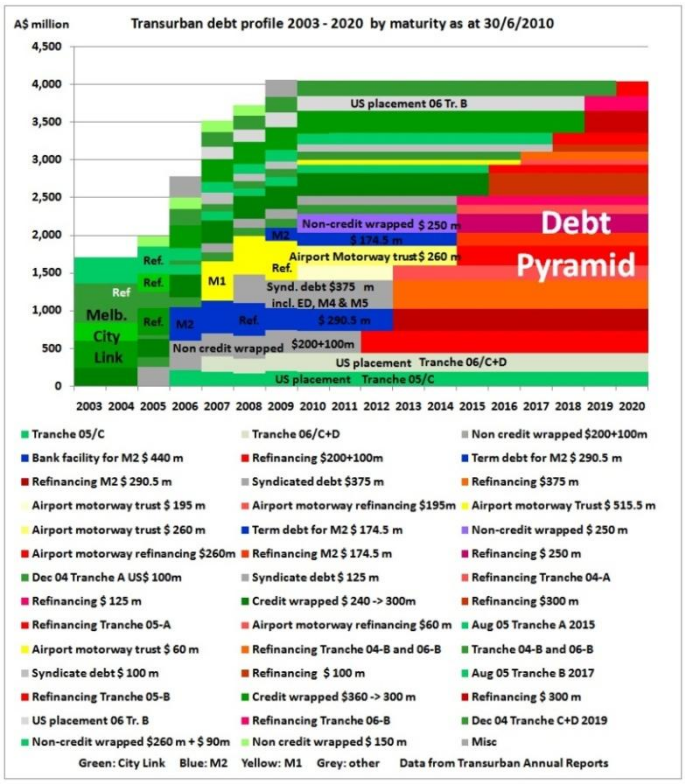
<<< 3rd lane under construction in August 2011.

The NSW government's transport policies are completely inconsistent, uneconomic and financially ruinous. They will fail.



<<< Transurban calculates that as a result of the M2 widening their traffic will increase by 16% on top of what they expected anyway without the widening.

They are of course totally peak oil ignorant and haven't done any alternative energy assessment.



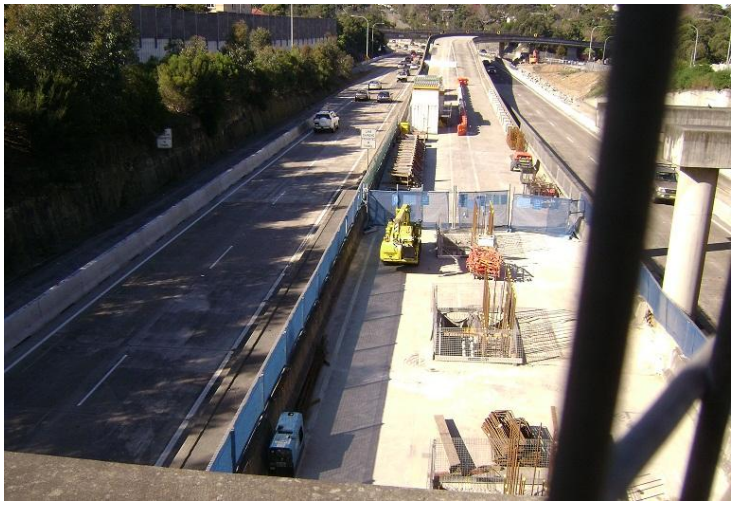
Transurban is not paying back any debt because tolls are too low. This toll-way operator is continuously pushing a debt pyramid of around <<< $4bn into the future.

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.

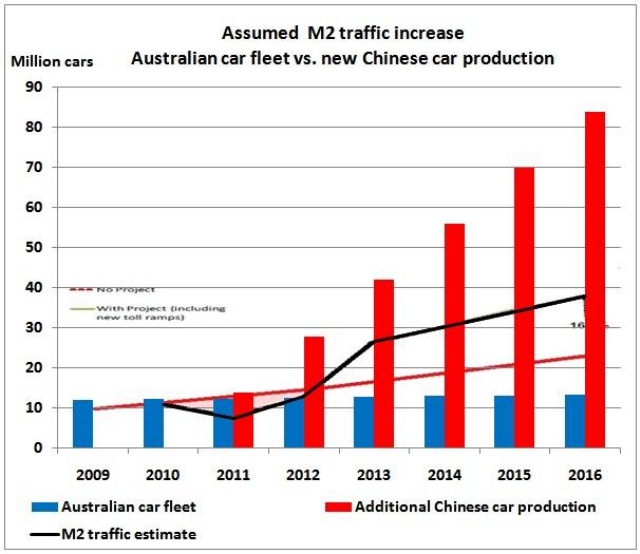
A Transurban crash is a magnitude larger than the Lane Cove Tunnel or Cross – City Tunnel demise. There will be no one to buy Transurban when that happens.

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



<<< Terrible mistake: new bridge supports under the Beecroft Rd bridge right on top of bus lanes and later demolition of the bus ramp connecting these bus lanes with the Epping rail hub

This wilful destruction of existing public transport infrastructure will be bitterly regretted. It is reflective of the car oriented mindset of NSW State planners



<<< **70 million additional** Chinese cars (red columns) in the next years and **total** Australian car fleet (blue columns) versus assumed traffic growth on the M2

There will be huge distribution fights for petrol and diesel

Fuel efficiency, alternative fuels and electric cars cannot fill the gap, not in 5 years and not by 2020.

Articles on Transurban and tollways:

4/4/2011 **Sydney's RTA builds M2 exit lanes for $200 oil**
http://crudeoilpeak.info/sydney%e2%80%99s-rta-builds-m2-exit-lanes-for-200-oil

11/2/2011 Money in Transurban's cash box not enough to complete M2 widening
http://crudeoilpeak.info/money-in-transurban%e2%80%99s-cashbox-not-enough-to-complete-m2-widening

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

15/11/2010 Transurban's M7 traffic 38% less than expected
http://crudeoilpeak.info/transurban%e2%80%99s-m7-traffic-38-less-than-expected

11/11/2010 **Tollopoly on Sydney's orbital**
http://crudeoilpeak.info/tollopoly-on-sydney%e2%80%99s-orbital

9/11/2010 **M2 widening increases Sydney's oil vulnerability**
http://www.crudeoilpeak.com/?p=2039

25/10/2010 Sydney's RTA about to pull down public transport infrastructure (part 1)
http://www.crudeoilpeak.com/?p=1992

High energy consumption in rail tunnels

Rail in a tunnel consumes twice as much energy as surface rail. This table is taken from the Rozelle Metro proposal:

Environmental Assessment - Part D2 - Chapter 19.pdf (SECURED) - Adobe Reader

Table 19.12 Annual operational energy consumption (GWh/year) of CBD Metro

	Stations							
	Central	Town Hall Square	Barangaroo-Wynyard	Martin Place	Pyrmont	Rozelle	Traction power	Total
GWh/year	10.0	8.0	12.2	8.5	7.6	7.7	53.9	108.0

Table 19.11 Energy consumption and associated emissions over the construction period

As shown in the above figure there is about a 50:50 split between the energy consumption of the stations and of the traction power.

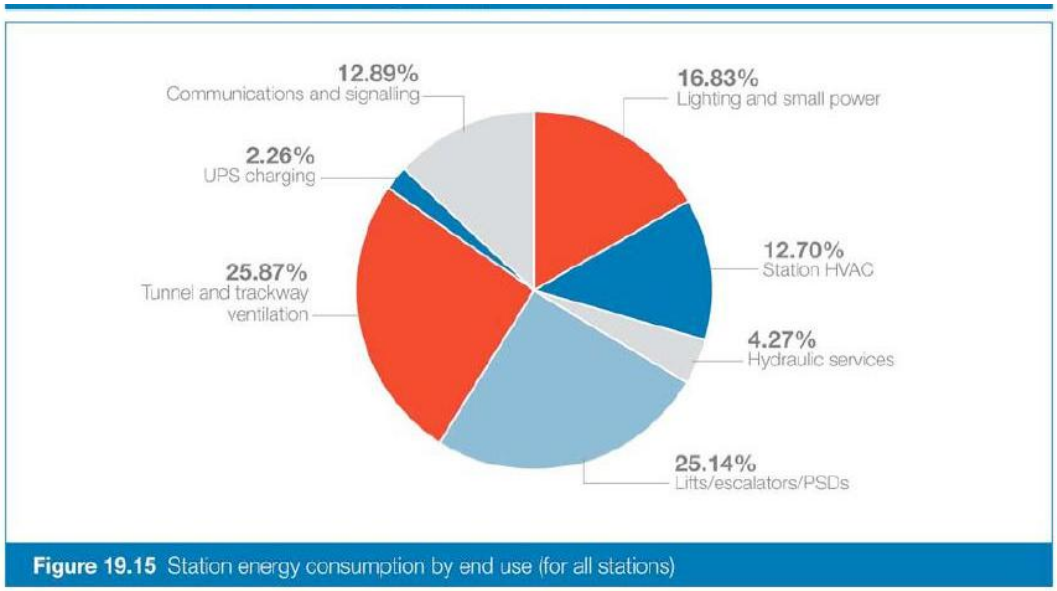


Figure 19.15 Station energy consumption by end use (for all stations)

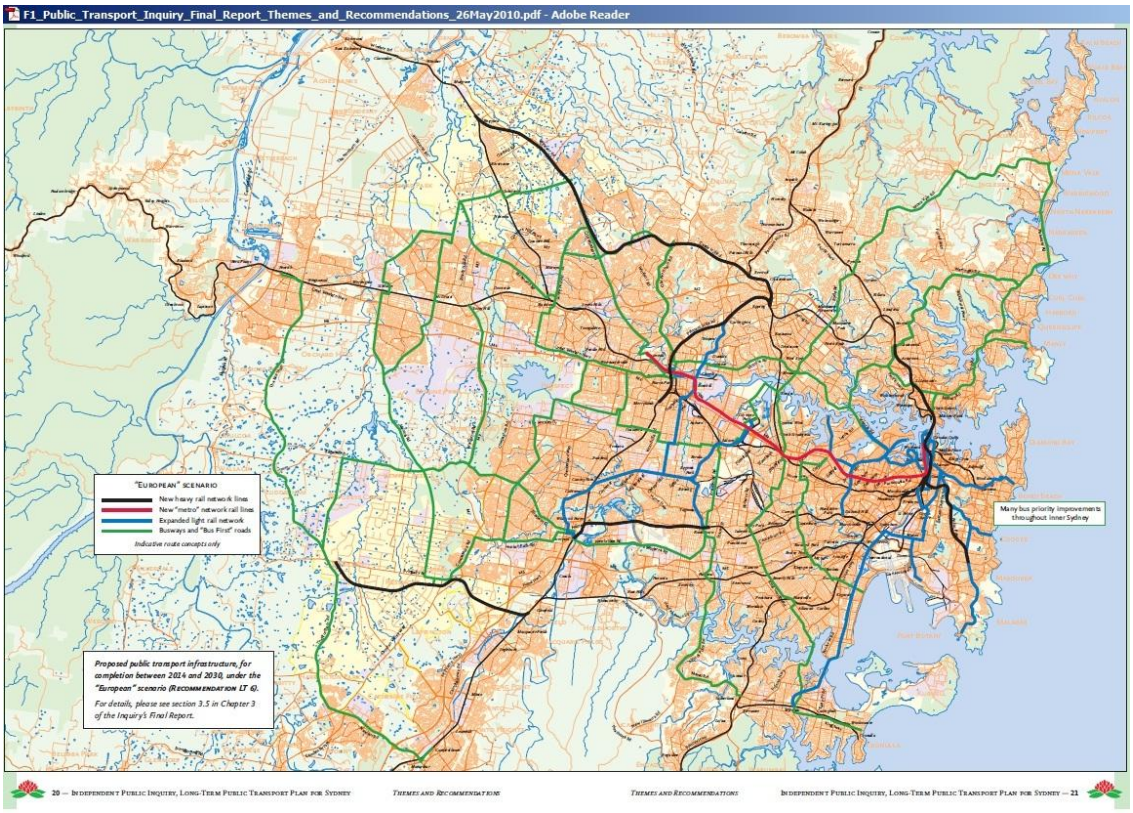
Underground stations 10 levels deep consume as much energy as the operation of trains.

Part 2: Alternative proposal: Transperth model – rail on freeways

There are definitive time limits to solve Sydney's transport problems (i.e. its oil dependency) given by the convergence of several unstoppable events and processes:

(1) Peak oil since 2005 and declining crude oil production by around 8 mb/d by 2020
(2) The disintegration of MENA countries as a result of peaking oil production in key countries with large populations like Egypt – now a net oil importer with diesel shortages during harvesting time - and Iran which will go towards oil export extinction by 2015
(3) Skyrocketing demand for oil in China where in 5 years time 70 million new motorists will snatch away petrol from Australian motorists
(4) The ever evolving accumulated debt crisis in the US and Europe which may trigger another credit crunch any time from now
(5) Increasing CO2 concentrations in the atmosphere until a tipping point is reached (possibly the disappearance of Arctic summer sea ice which will start in this decade) after which it will be obvious to the whole world and imperative to replace coal fired power plants

Processes 1-3 mean the **end of our free-wheeling car culture** by 2020 at the latest, but more likely around 2015. As a result of problem 4 tollway operators may **not be able to roll over debt and go into receivership**. Moreover, there will be again **budget problems** at both State and Federal levels. Process 5 will **physically force us to get out of our coal addiction by 2020** (NASA climatologist James Hansen) which will trigger another primary energy crisis in addition to the oil decline problem.
The above time lines mean the job at hand is to **REPLACE EXISTING car traffic (and not provide for growth) within a very short time and at the cheapest cost possible**. This can only be done by surface rail on road corridors and electric trolley buses. 100s of kms of rail lines, light rail and bus ways are to be built by 2020, not 2040, as envisaged by Ron Christie in the SMH Public transport inquiry in May 2010:



http://www.transportpublicinquiry.com.au/

Christie rail plan 2001: http://www.aptnsw.org.au/christie/5.html

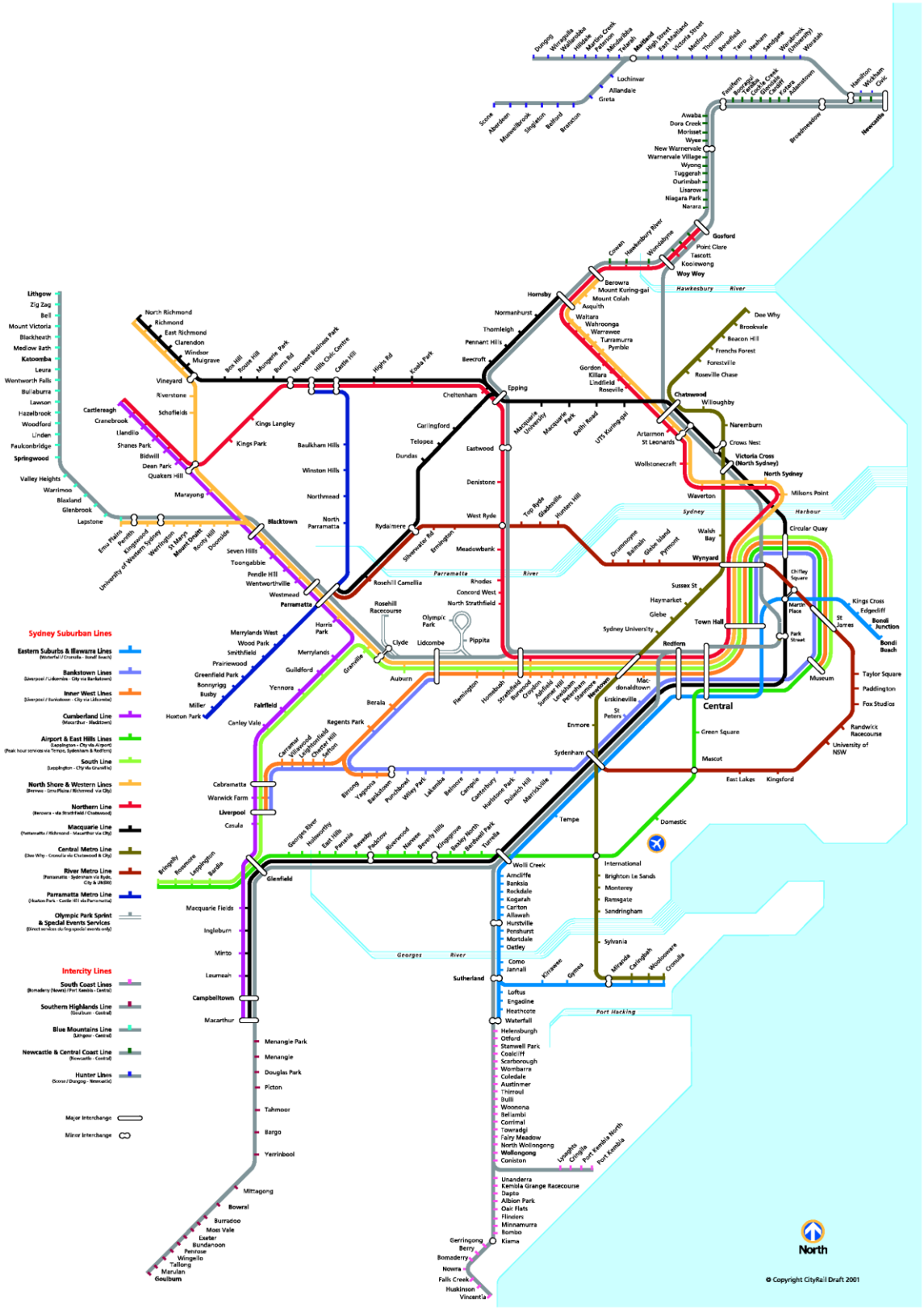
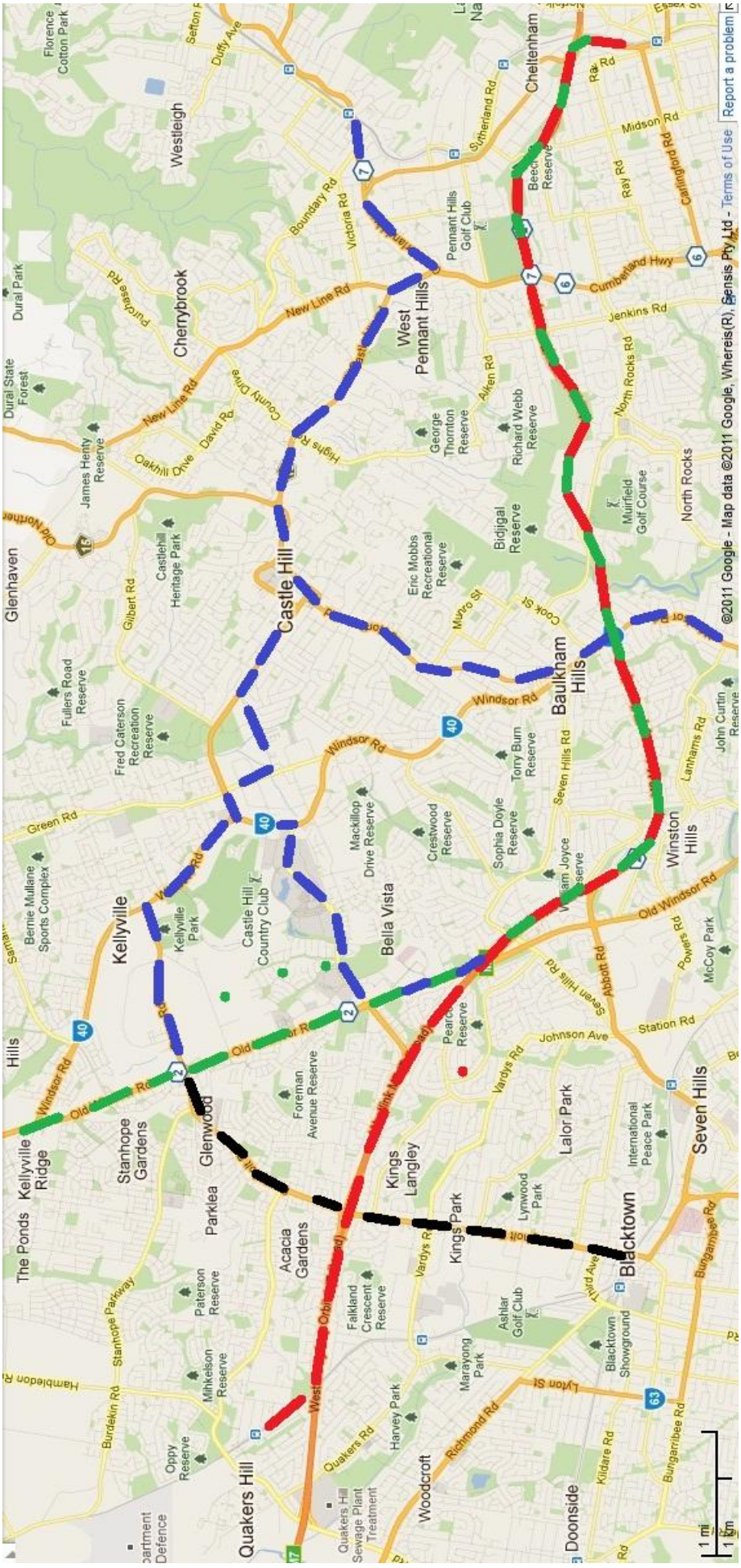


Figure 5.9. Indicative possible train operational patterns on the indicative "ultimate" rail network shown in Figure 5.8.

Only a fraction was implemented in 10 years and now abandoned altogether as a result of a pervasive car culture in the State government and in society in general. Latest example: 2/9/2011 **THE state government's infrastructure body believes projects such as the M4 East could be more important to Sydney than the $8-10 billion North West Rail Link, senior industry sources said yesterday.**
http://www.dailytelegraph.com.au/news/sydney-nsw/m4-east-before-north-west-rail/story-e6freuzi-1226127700361



Alternative solutions

There are no easy solutions for an area which has been built for the motorcar and which sits on a difficult topography

<< (1) red line: Transperth type of rail from Epping to Quakers Hill on M2 and M7

(2) green line: also surface rail Epping – Rouse Hill on M2 and Old Windsor Rd

(3) blue lines: electric trolley buses Pennant Hills station – Castle Hill – Victoria Rd Industrial area – Norwest Business Park – M2 – Epping

(4) blue lines: electric trolley bus Castle Hill – Blacktown

These plans must be prepared and ready in the drawers because we can have an oil crunch plus credit crunch any time from now which will wipe out all illusionary rail tunnel plans.

Motorists must be prepared for car-pooling, too

It would be better to have all blue lines run as light rail but there is a big question mark over whether there is still enough time to do all this.

This alternative proposal has following advantages:

(1) It can be better adapted to the difficult topography which is actually not suitable for heavy rail
(2) More stations/stops can be built which increases the catchment area and reduces the need for feeder buses
(3) It is around 10 times cheaper than a tunnel solution on a cost-per-km basis. This means the same funds can build a whole network instead of just one line.
(4) No high tech machinery is needed during construction which increases the number of jobs local contractors and trades people are familiar with
(5) It can be built in many stages and better tailored to the availability of funds instead of huge up-front financial commitments for large scale projects
(6) Shorter sections are immediately available

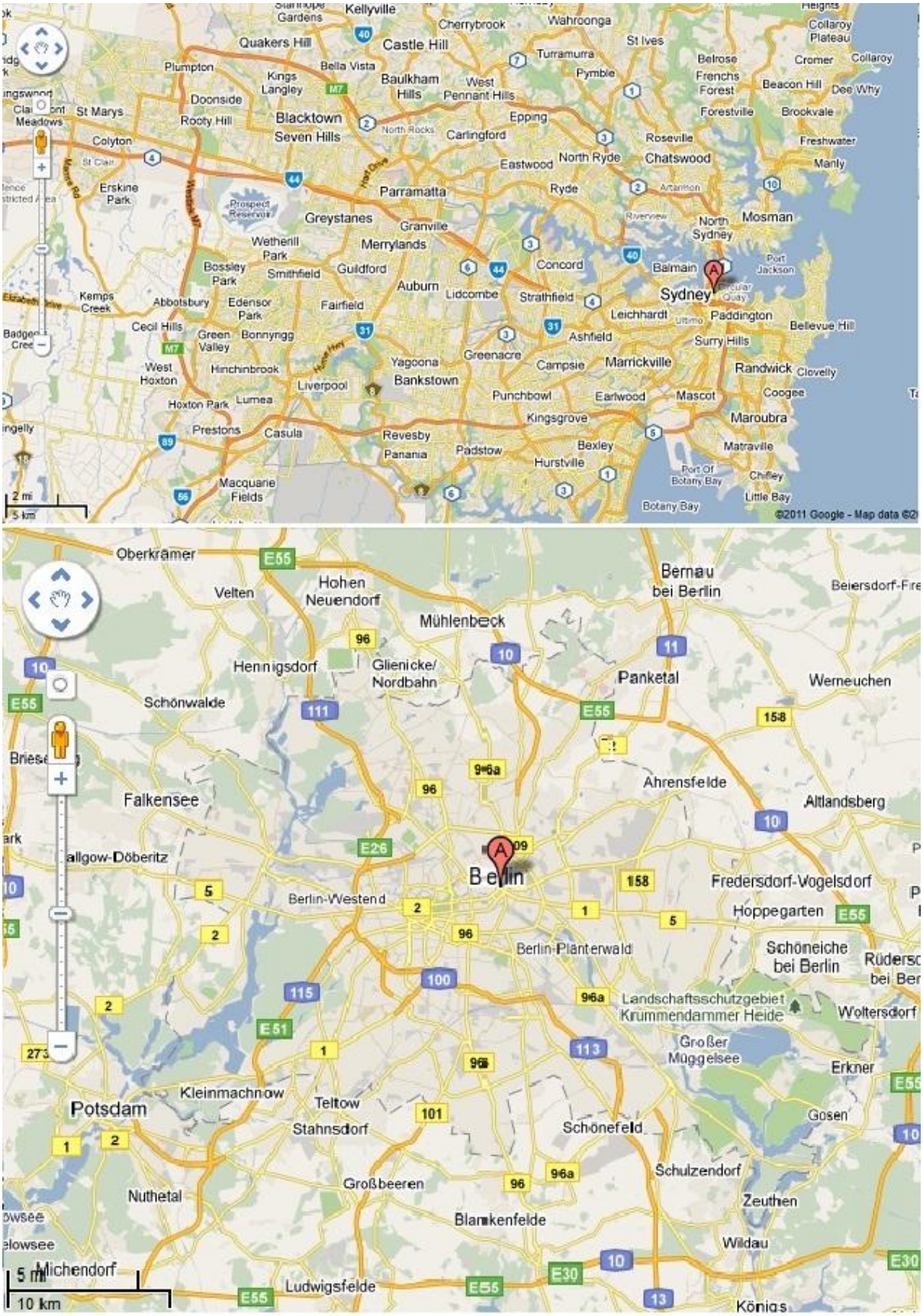
Recommendation: Don't build new energy hungry tunnels and underground stations. This surface rail solution is much more energy efficient and economic:

If the advice in my submission "Too late for metro tunnels"
http://www.crudeoilpeak.com/downloads/CBD_Metro_8MB.pdf
had been followed 400-500 million dollar could have been saved = 20 kms of light rail on Victoria Rd. I had put that proposal to then MP of Bennelong, Maxine McKew, in April 2008 and to then PM Kevin Rudd in May 2008. No action was taken and time irreversibly lost.

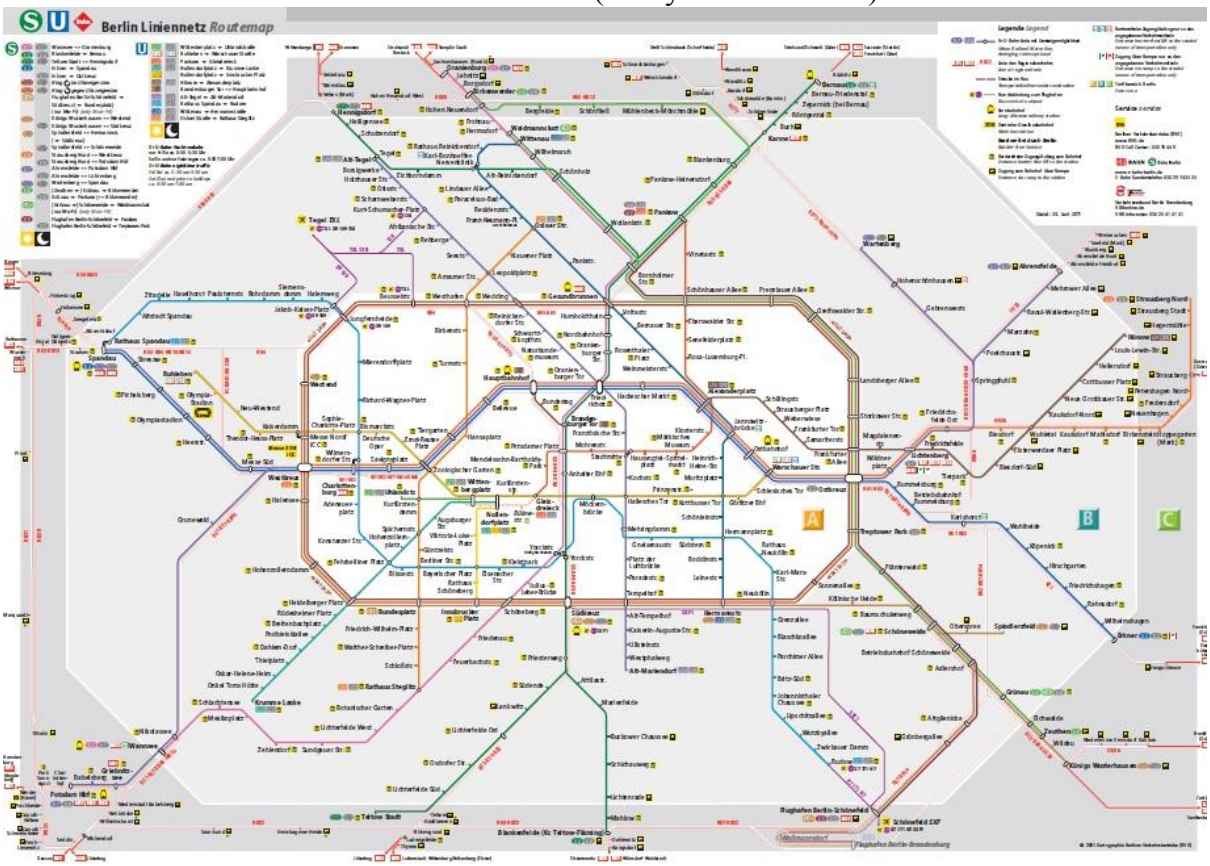
It is to be noted that the timely and well managed procurement of rolling stock from local manufacturers is absolutely critical, for both rail and bus solutions. Currently, all new buses are diesel buses. This will be regretted when diesel shortages arrive at filling stations. New buses should be at least CNG buses to reduce our dependence on oil. The proper solution, however, is electric trolley buses because all genuinely renewable energies produce electricity, not fuels and biofuels should be reserved to run machinery in agriculture itself.

Part 3: Size of the task to prepare Sydney for the post car era

We cannot compare Sydney (4.5 million) with Paris or London which are much larger by population, but Berlin is similar in size although population is smaller, 3.4 million.



Now let's have a look at Berlin's rail network (heavy rail and metro)



http://www.s-bahn-berlin.de/pdf/VBB-Liniennetz.PDF

System	Stations/ Lines/ Net length	Passengers per year
U-Bahn	170 / 9 / 145 km	457 million
S-Bahn	166 / 15 / 331 km	376 million
Tram	398 / 22 / 192 km	171 million
Bus	2627 / 147 / 1,626 km	407 million
Ferry	14 / 6 / -	-

Sydney		
	Stations/lines/net length	Passengers pa
Metro	nil	nil
Rail	206/9/ na	304 million
Tram	14/1/7	3.5 million
Bus	na / 300 / na	200 million

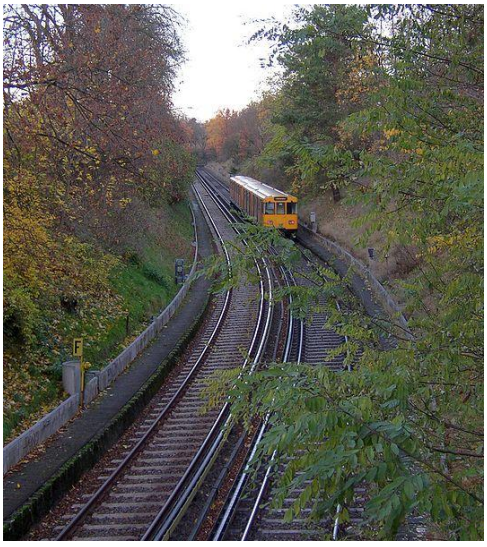
Of course, much of Berlin's network was developed in the era before the motorization took place, but many metro lines were built after WW2. And by the way, metro lines in low density suburbs run above ground, here U3 in a cutting >>>

New rail tunnels in Berlin are prohibitively expensive:

2 new rail tunnel kms (1.3 km plus 2x350 m tie ins and 1 station) cost 300 million Euros = AU$ 400 million

and compare the numbers:

Berlin's rail passengers (metro, heavy rail, trams) are around 1 billion pa. Since Sydney's population is 30% higher, we need to compare a "target" of 1.3 bn with the actual Sydney figure of 307.5 million. In other words, Sydney would need to lift its rail game by more than a factor of 4 to be level with Berlin.

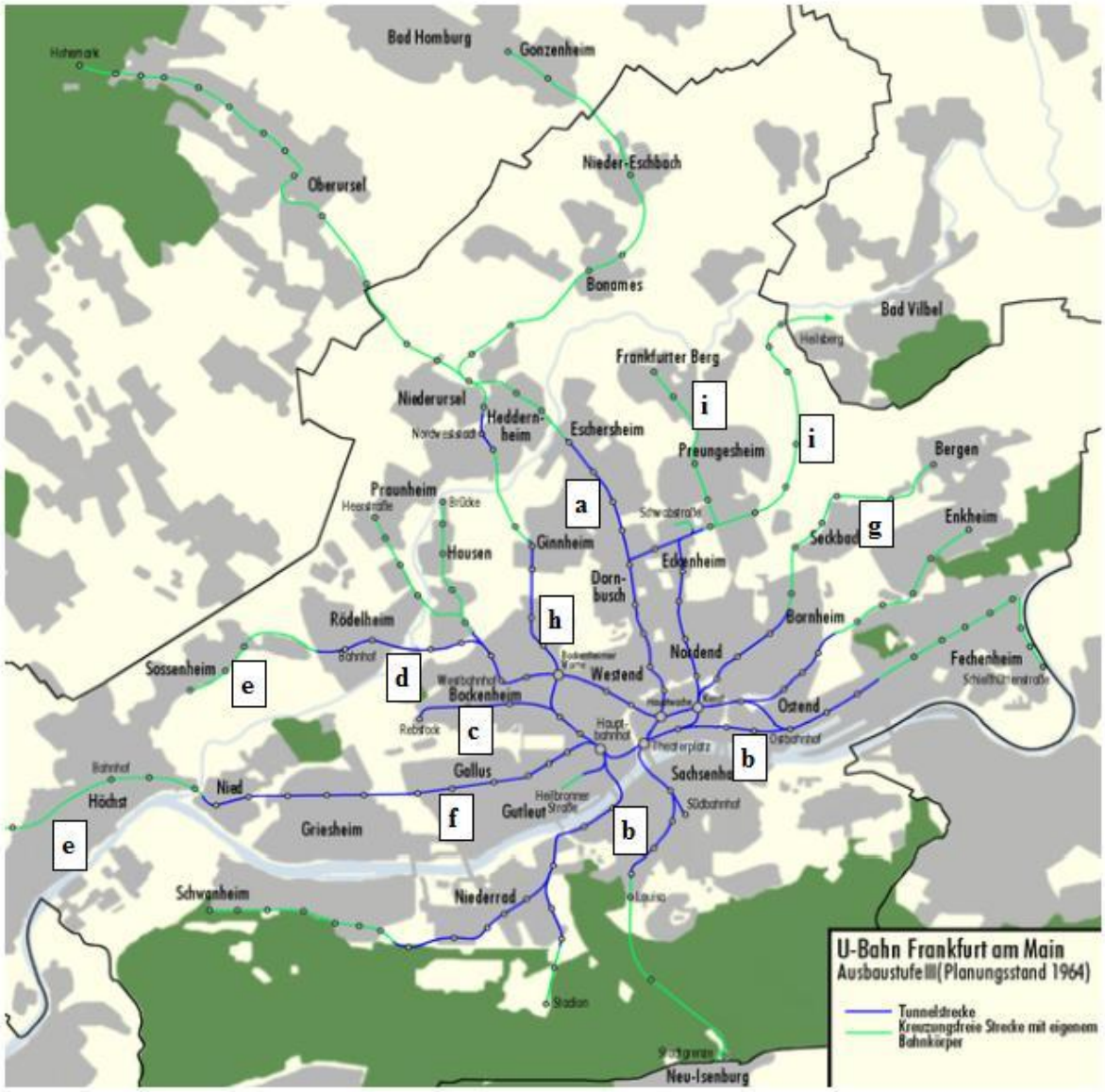


Lessons from Frankfurt

In 1961, the same year in which Sydney closed its last tram line, Frankfurt decided to move its trams underground, thus creating the start of a metro network. Plans proved too ambitious/costly and much of the system remains a hybrid in which metro trains use tunnels in the inner city and aboveground tracks on arterial roads in outer areas.

CBD_Metro_Appendix - Microsoft Word

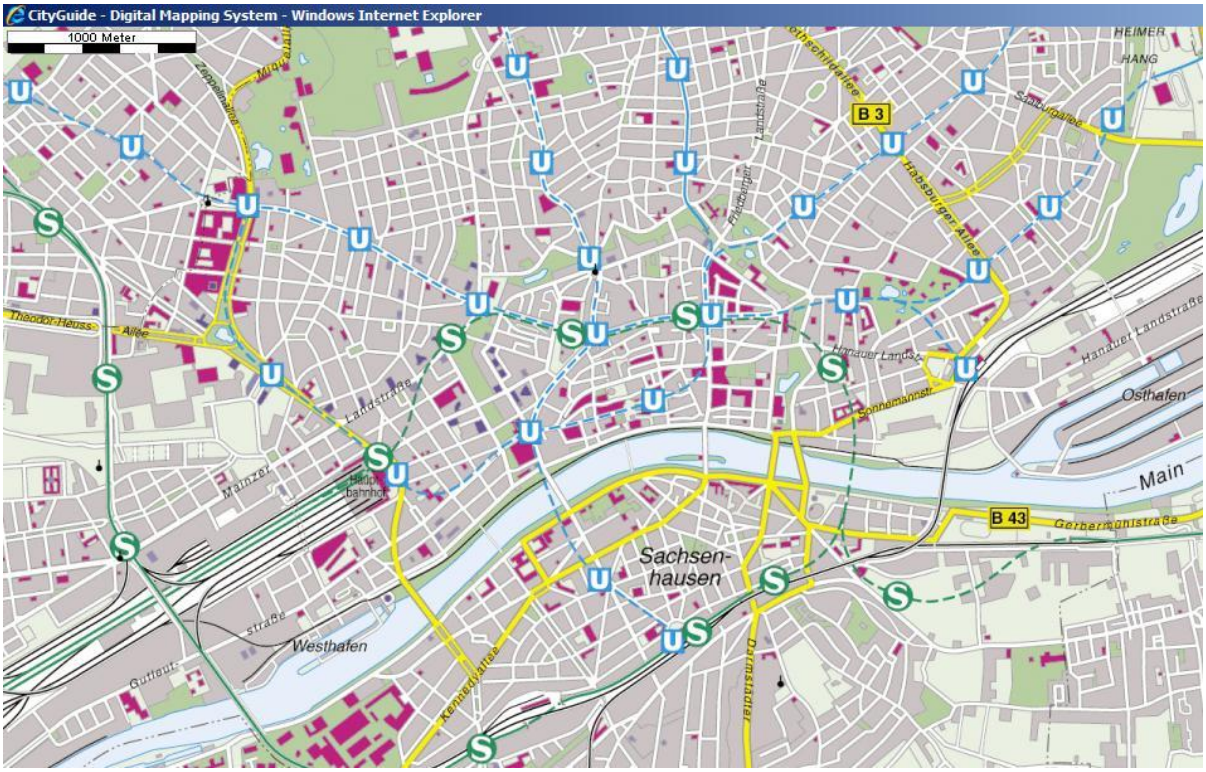
Frankfurt's ambitious Metro plan from 1964



Plan and reality: planned tunnels (blue), metro above ground on separate tracks (green).

(a) tunnel never built, metro trains continue above ground on separate track
(b) tunnel never built, but old tram lines upgraded instead
(c) tunnel never built, but new tram/light rail built instead
(d) tunnel never built, tram line closed and replaced by bus
(e) extension never built
(f) tunnel never built, S Bahn plus tram deemed sufficient
(g) above ground track never built, tram line closed
(h) tunnel never built, locals prefer exiting tram line
(i) never built

This is what Frankfurt managed to implement in 40 years:



Up: Metro (U) and heavy rail (S) stations in the inner city of Frankfurt (6 km x 4 km). That took 40 years. It will be a futile attempt for Sydney to start a metro system 7 years after global crude oil production began to peak in 2005

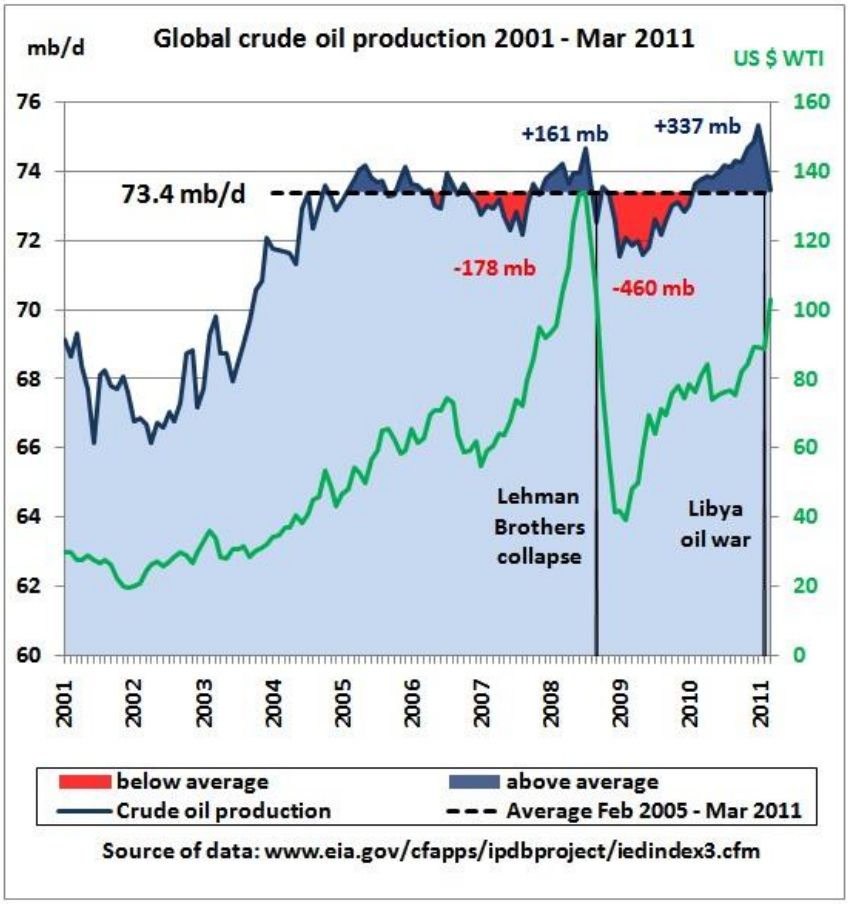
This is what happens when metro plans are too expensive and ambitious: no other choice than to continue above ground.

Hierarchy of Urban Rail System in Frankfurt	
Heavy rail	
 Double deckers are used as city or regional express only; limited stops every 15 mins or so	 Single deckers for all stopper services. Average distance between stations: 2.5 kms
Metro	
 Stops every 800-1000 m, runs every 5 mins	 Also above ground on dedicated track.
Light rail – surface metro	
 8 car trains - high platforms - frequent stops	 Simple stations can be built fast
Trams – low floor	
 Sharing road way	 On dedicated track; car lanes gone

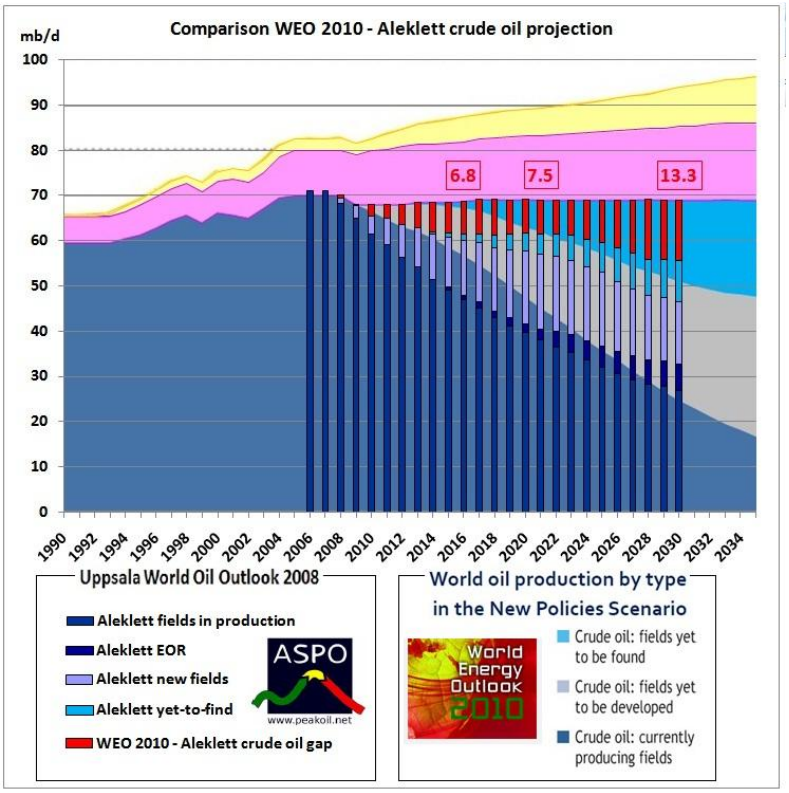
In Sydney, there is little understanding about the different functions of different modes of urban rail. The above table gives an overview

Part 4: Peak oil & global warming

Peak oil – which is a process - started in 2005



http://crudeoilpeak.info/latest-graphs



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

Australian oil supplies

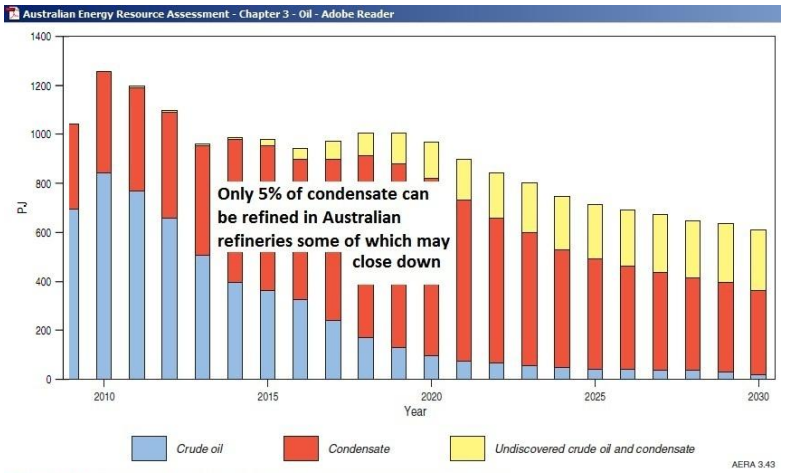
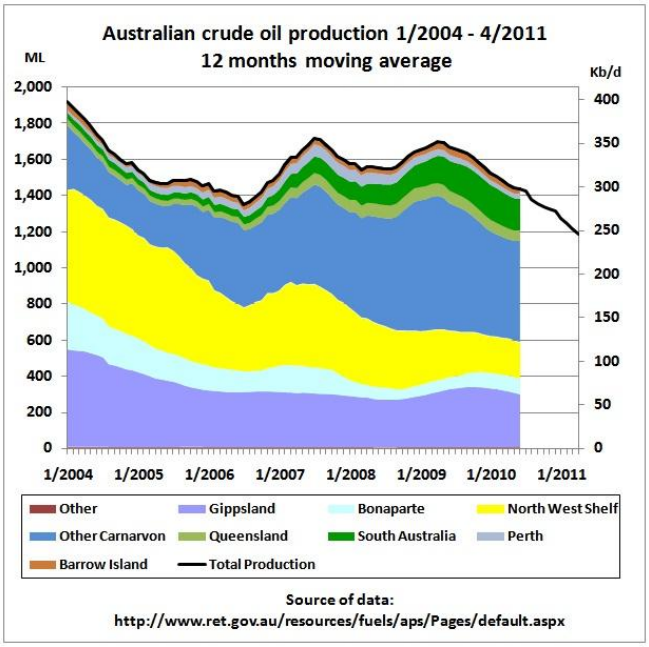
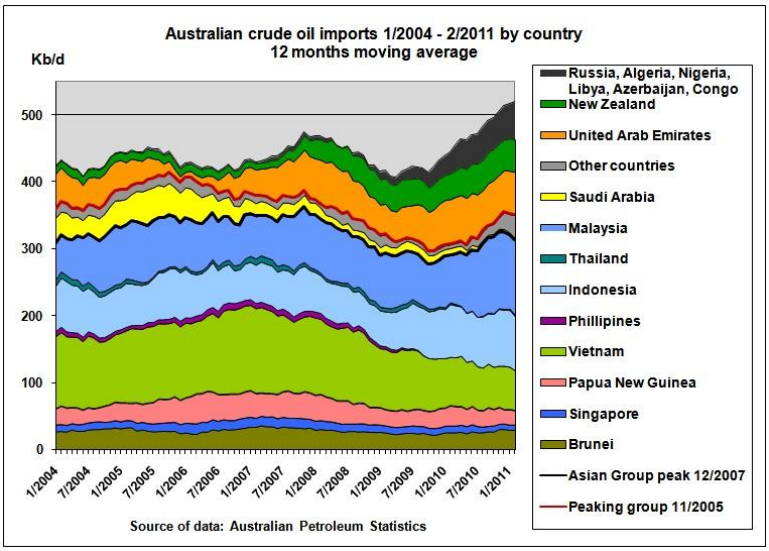


Figure 3.43 Australian oil production outlook from proven hydrocarbon basins

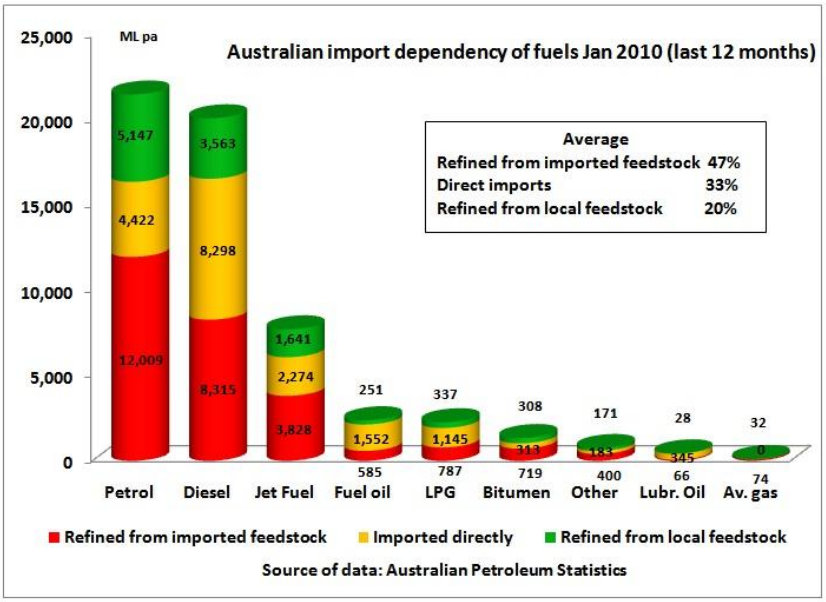
http://www.abare.gov.au/publications_html/energy/energy_10/ch_3.pdf



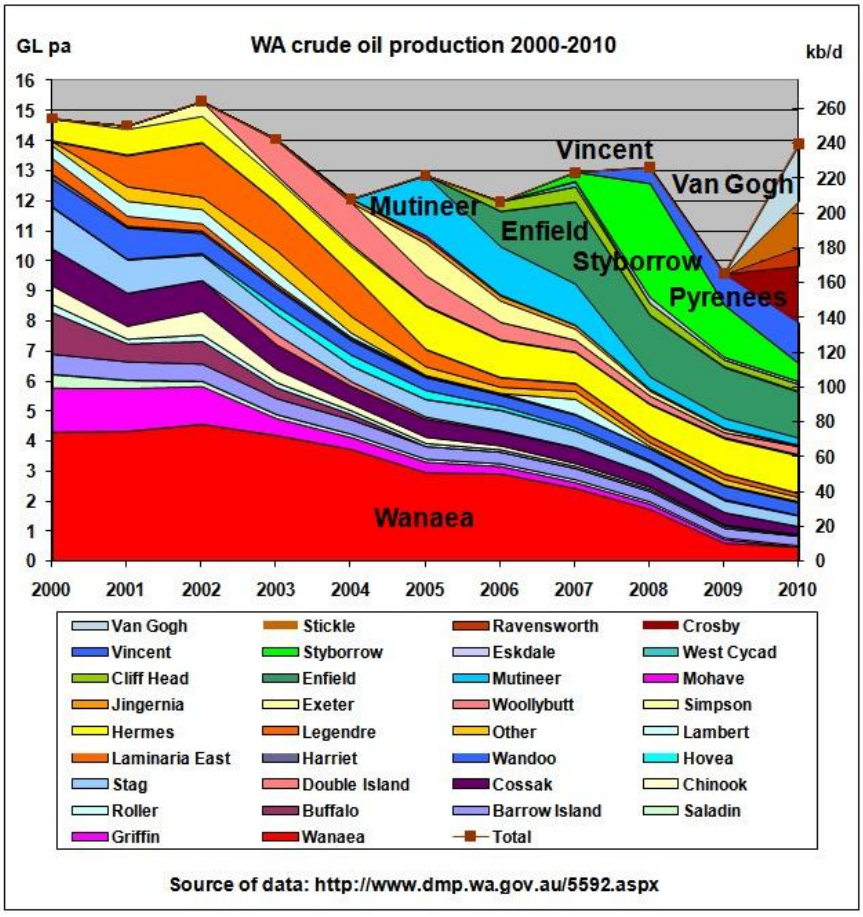
http://crudeoilpeak.info/australian-crude-oil-production



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



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

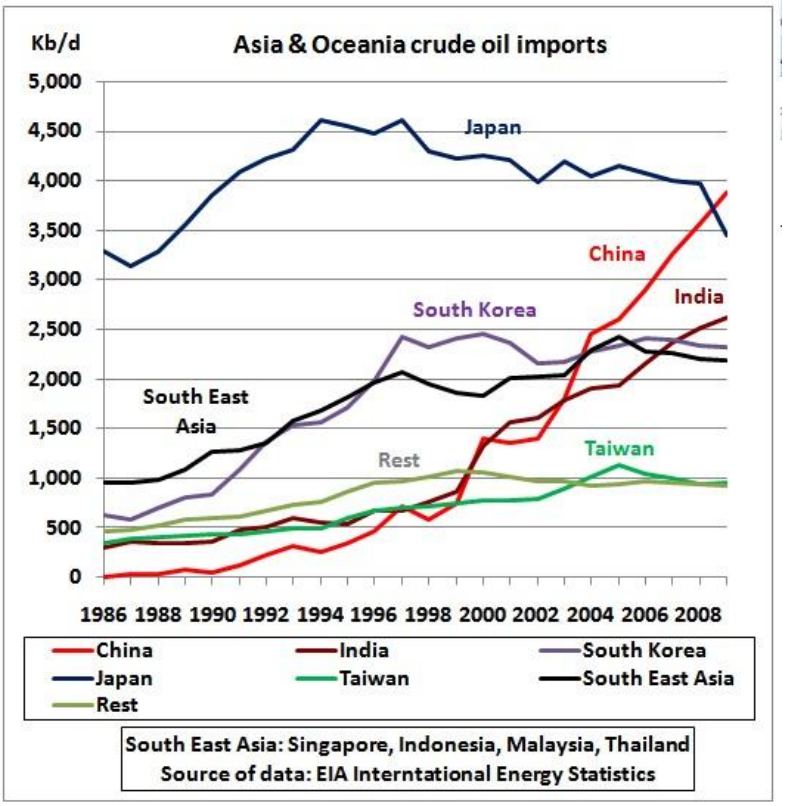


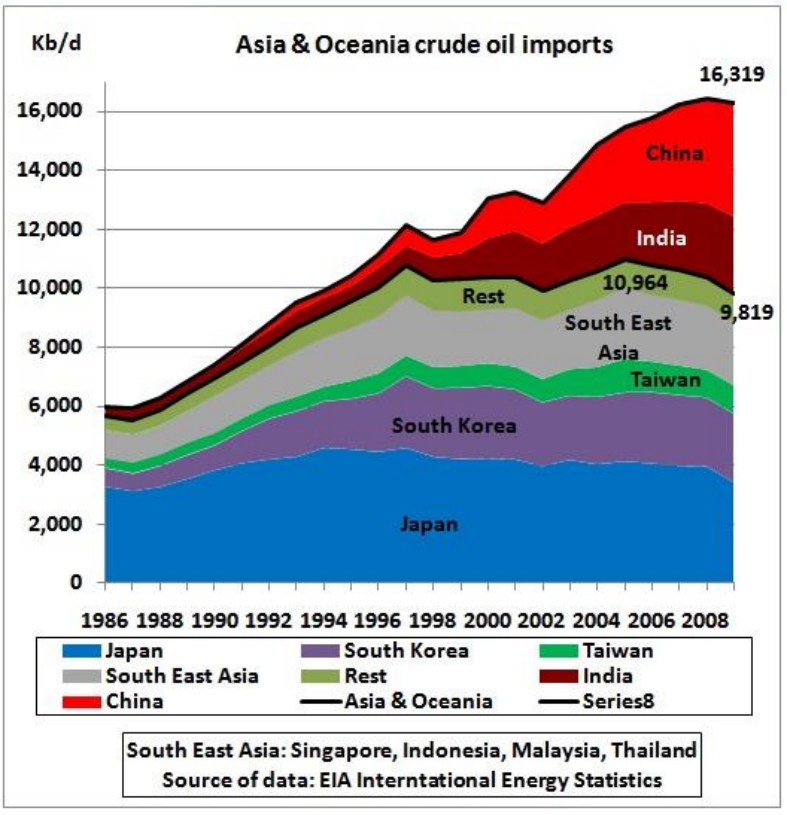
11/7/2011 WA crude oil depleted by 75%
http://crudeoilpeak.info/wa-crude-oil-depleted-by-75-pct

Visit my web site for more details

http://crudeoilpeak.info/

Asia is not immune from peak oil

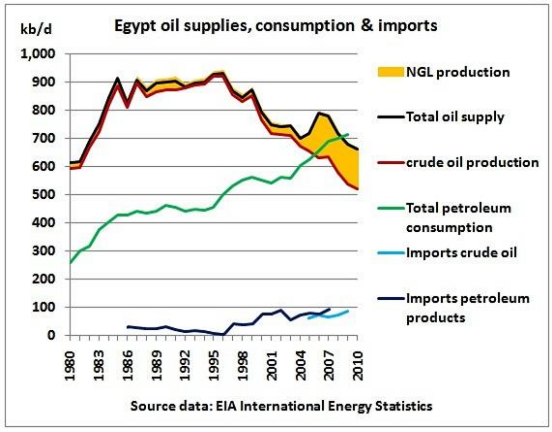




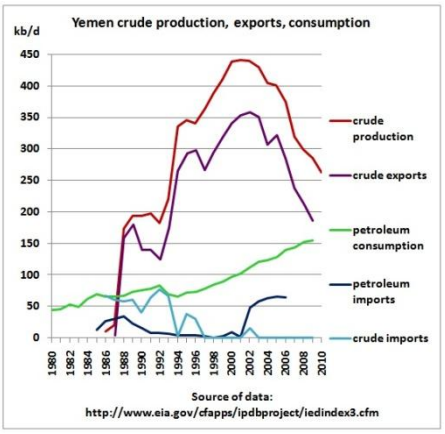
Asian crude oil imports – except China and India – were around 10 mb/d since the mid 90s, had a 2nd peak in 2006 at 11 mb/d and then declined by around 1 mb/d. Given that global crude oil started to peak in 2005, these "savings" are nowhere near enough to allow China and India to grow as they did in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

Disintegration of MENA countries

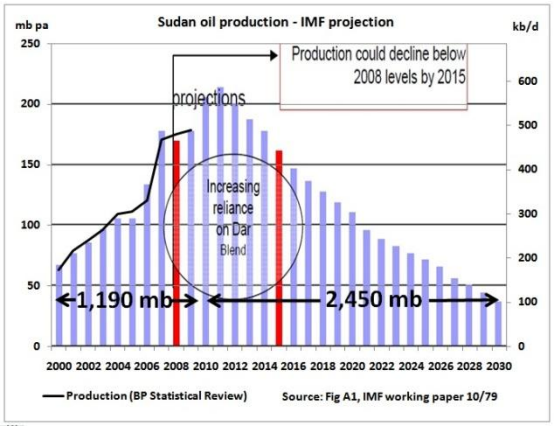
Peak oil in several key countries has left dictators with less money to distribute to their oppressed population:



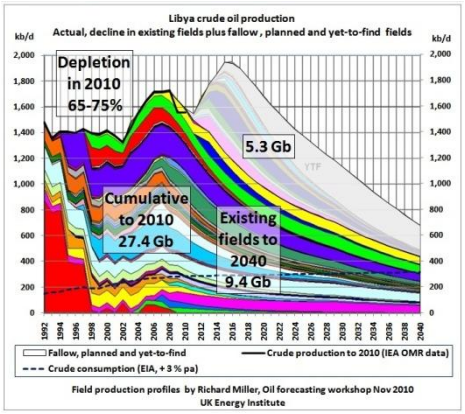
Egypt must import oil now at world market prices



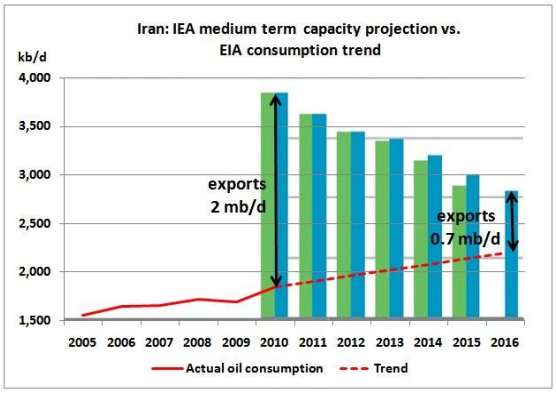
Yemen's oil peak



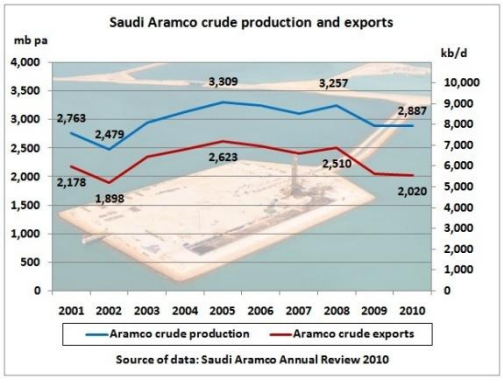
Sudan: oil in the South, pipelines in the North



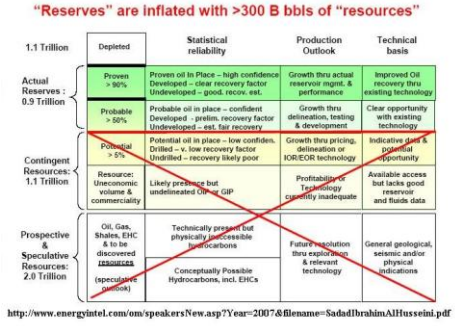
Libya: surprises ahead



Iran heading towards oil export extinction



Saudi exports have peaked

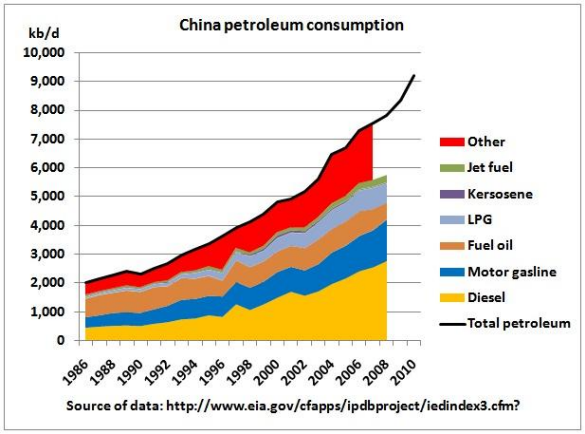


<<< OPEC paper barrels crossed out by Ex-Saudi Aramco chief Sadad al Husseini at an oil and money conference in October 2007 in London, organised by Energy Intelligence.

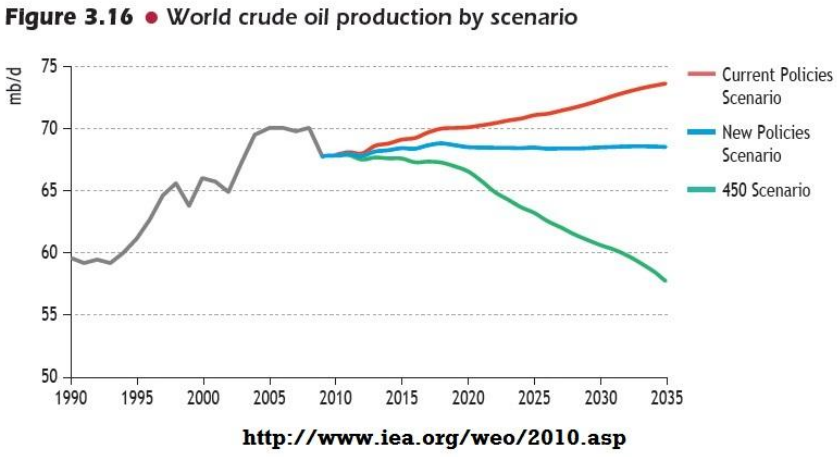
The equivalent of 30 years OPEC oil supplies are speculative resources, not easily or economically recoverable reserves.

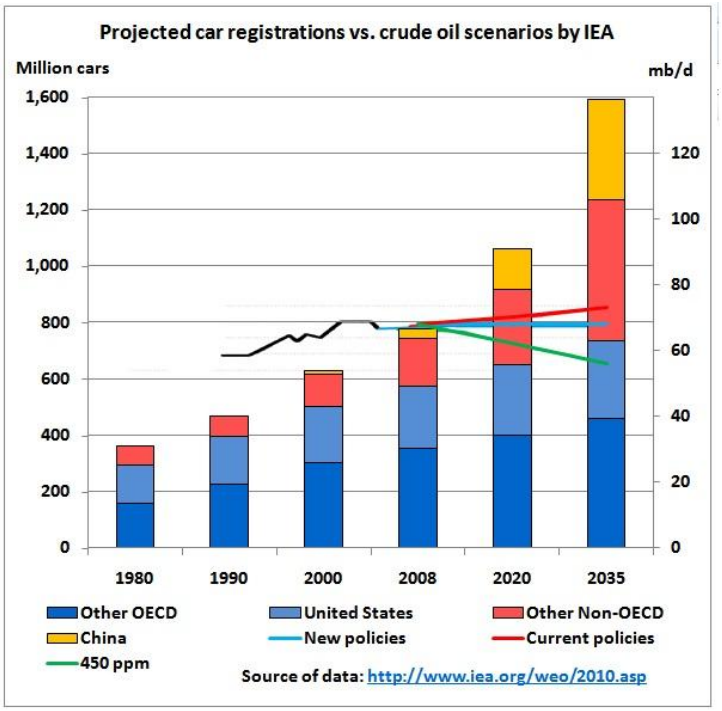
China, the elephant in the oil demand room

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



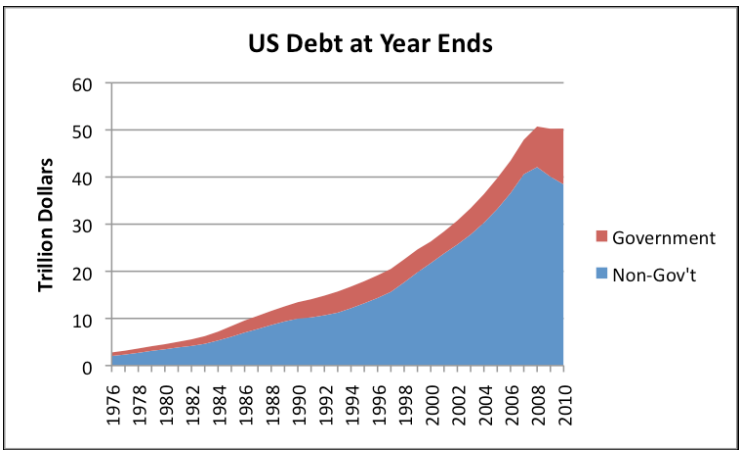


World car fleet versus IEA oil production scenarios: too many cars

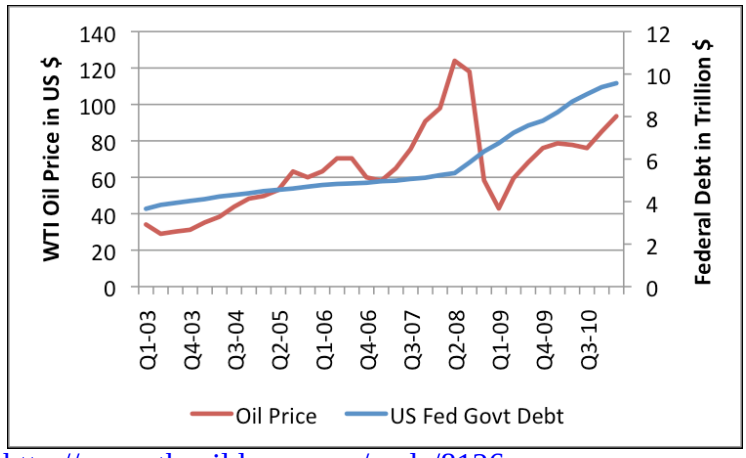
http://crudeoilpeak.info/1-billion-vehicles-in-year-7-of-peak-oil

Peak oil = peak debt

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

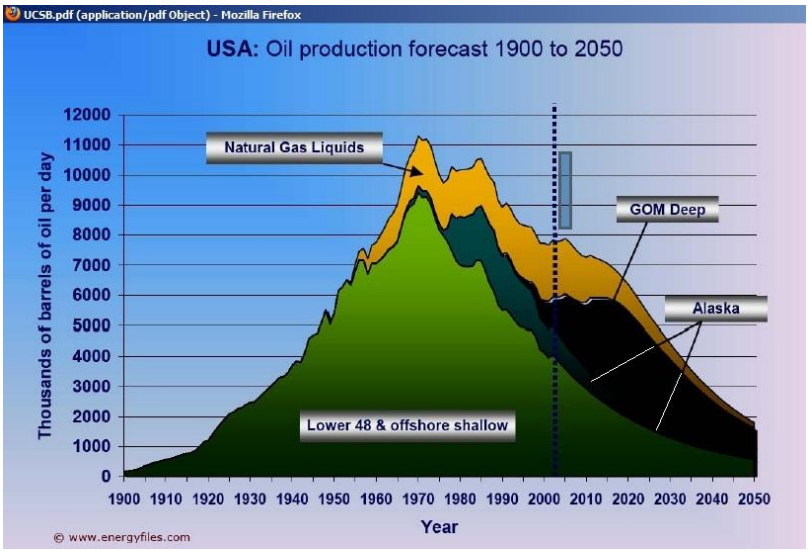


The economy is closely linked with the physical resources that underlie it. Most economists assume debt can rise endlessly, just as they assume GDP can rise endlessly.



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

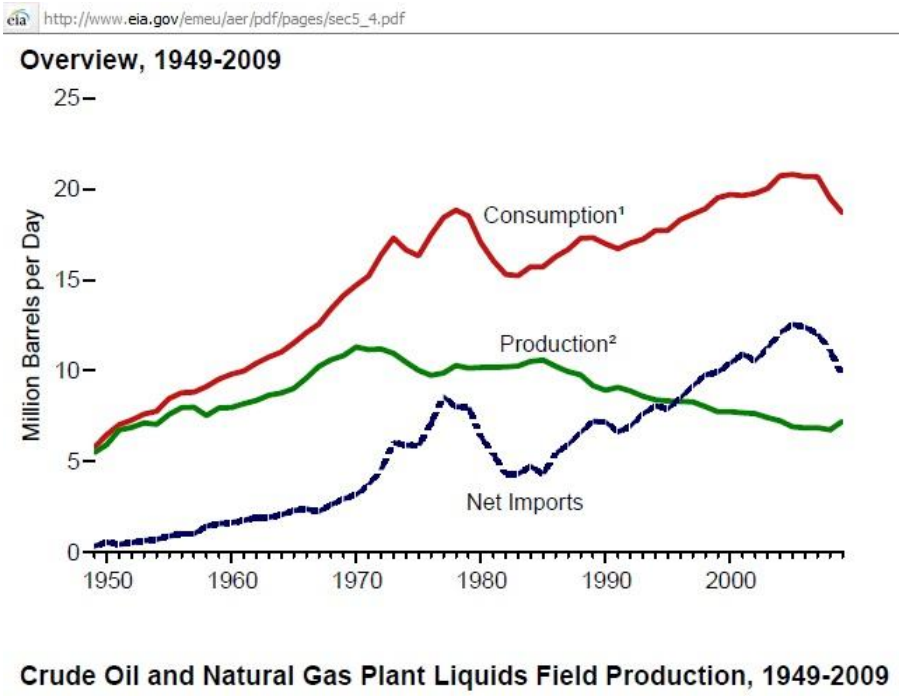
http://www.theoildrum.com/node/8126



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.

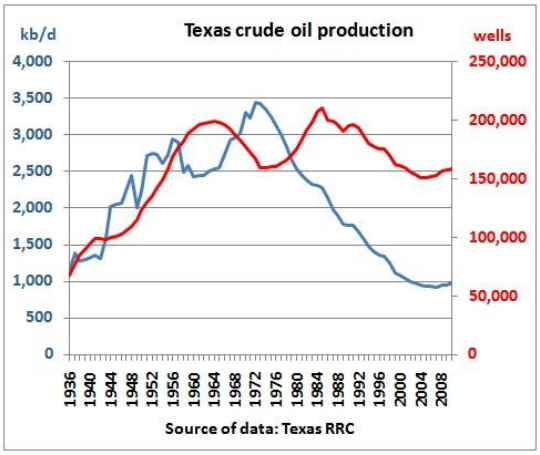
http://en.wikipedia.org/wiki/Bretton_Woods_system



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.**



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.

Debt can only be paid back in a growing economy. But an oil dependent economy cannot genuinely grow if oil production does not grow. The only way out is to dramatically increase the productivity in the use of oil in the economy. But the current portfolio of projects does not do this:

13/5/2011 Australian 2011 budget allocation road/rail will not mitigate oil crunch
http://crudeoilpeak.info/australian-2011-budget-allocation-roadrail-will-not-mitigate-oil-crunch

In principle, the NWRL is a project which would increase the productivity in the use of oil (e.g. park & ride at its stations) but as is argued above, for the same funds, more oil savings could be achieved with surface rail.

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

8/3/2010

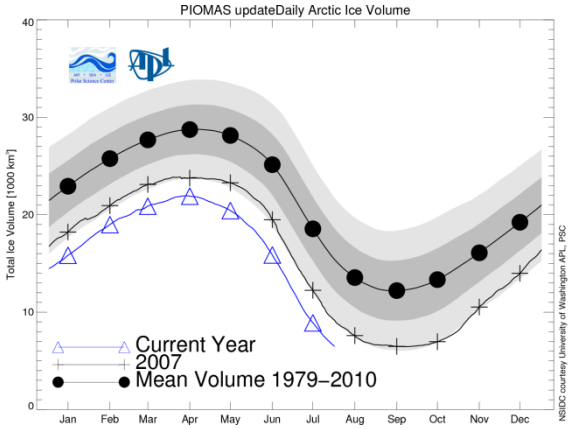
NASA climatologist James Hansen at Sydney Uni: "Australia doesn't agree now that they got to stop their coal, but they are going to agree. I can guarantee you that within a decade or so because the climate change will become so strongly apparent that's going to become imperative"

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://nsidc.org/images/arcticseaicenews/20110816_Figure5.png

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