Submission on WestConnex M4East

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Contents

November 2015

(1) M4 and M4East tunnel not financially viable

Let's do a back-of-the-envelope calculation what the tolls would have to be if this toll-way were to be financed by the private sector, without a whopping government contribution of $ 3.3 bn, as mentioned here:

Funding

The NSW Government is investing $1.8 billion in WestConnex, while the Australian Government has committed $1.5 billion to WestConnex over the next four years. This allows construction work on the first stage to get under way in 2015.
http://www.westconnex.com.au/about/index.html

Note the word "Funding" is incorrect. It should read "Financing" because funding comes actually from the taxpayer. Therefore, "Investing" is an embellished term. It is actually a subsidy which allows toll-way operators to make profits. Hopefully, that is. Transurban did not pay much tax, around half the bonus for the CEO.

Why Transurban says the taxman can wait
11/5/2015
Yet the corporate income tax it paid was static, at just $3 million…..
While taxpayers have to take a number, Transurban executives are in a different queue. Chief executive Scott Charlton picked up $5.8 million in remuneration last year, up from $4.9 million prior, despite the red ink at the bottom line.
http://www.smh.com.au/business/why-transurban-says-the-taxman-can-wait-20150811-giwl34.html

M4 and M4East construction cost in 2013

Table 3: Staging description

Stage	Location	Key features	Estimated Capital Cost (including contingency)
1	Parramatta to Haberfield	M4 • Widening 7.5 km of the existing M4 to 2x4 lanes between Church Street, Parramatta and Homebush Bay Drive. • Widening 1 km and new 5 km 2x3 lane tunnels to extend the M4 from Homebush Bay Drive to Parramatta Road and the City West Link.	$3.4 billion – $3.6 billion
2	Beverly Hills to St Peters	M5 East Airport Link • Widening the existing M5 East to 2x4 lanes between King Georges Road, Beverly Hills and Bexley Road. • An up to 6 km tunnel from St Peters to join the widened M5 East surface section. • A 2x3 lane surface and viaduct connection to St Peters and Sydney Airport.	$3.6 billion – $3.8 billion
3	Haberfield to St Peters	M4 South • A new 8.5 km 2x3 lane tunnel from Haberfield to St Peters, near Sydney Airport via Camperdown. • This will link Stages 1 and 2 and complete the 33 km WestConnex network.	$4.0 billion – $4.1 billion
	Total		**$11 billion – $11.5 billion**

http://www.westconnex.com.au/documents/westconnex-executive-summary-september-2013.pdf

On 15/10/2015

Expected Start/Finish:	8 March 2015 - Mid-2023
Estimated Project Cost:	$15,400,000,000
Australian Government Contribution:	$1,500,000,000

http://investment.infrastructure.gov.au/projects/ProjectDetails.aspx?Project_id=048726-12NSW-NP

total Westconnex cost had gone up to $15.4 bn, that is by 34%. This means the $3.6 bn for the M4 would come to $ 4.8 bn. Since the WestConnex Project Overview Sep 2015 has no update on cost (an unacceptable, possibly deliberate omission) let us take as construction cost a figure of 4.4 billion, mentioned in this article by the SMH.

http://www.smh.com.au/nsw/westconnex-builders-face-first-private-funding-test-20150614-ghngv0.html

In 2021:

Loan repayment over 20 years	220 $ million pa
Interest at 5.5%	242 $ million pa
Operating cost etc	5 $million pa
Total	467 $ million pa

This total is excluding depreciation, profit of banks, bonus for toll-way CEO and other perks

Average Weekly Traffic (AWT) is from following table:

m4_east_eis_volume_2a_app_g_part_2_traffic_and_transport.pdf - Adobe Reader

Table 8.1 WRTM screenline analysis – AWT (2021)

Screenline | Road Location	2021 AWT – 'do minimum'						2021 AWT – 'do something'					
	Eastbound		Westbound		Two-way		Eastbound		Westbound		Two-way	
	Vol (veh/ day)	SL%	Vol (veh/ day)	SL%	Vol (veh/ day)	SL%	Vol (veh/ day)	SL%	Vol (veh/ day)	SL%	Vol (veh/ day)	SL%
Western screenline												
Concord Road	16,600	13%	20,200	15%	36,800	14%	19,300	15%	22,400	16%	41,700	15%
M4 East	-	-	-	-	-	-	22,800	17%	23,900	17%	46,700	17%
M4 Motorway	40,100	30%	39,700	29%	79,800	30%	11,700	9%	10,100	7%	21,800	8%
Parramatta Road	16,000	12%	13,100	10%	29,100	11%	21,600	16%	20,400	15%	42,000	15%
Liverpool Road	10,300	8%	13,400	10%	23,700	9%	10,000	8%	13,300	9%	23,300	8%
Punchbowl Road	24,900	19%	23,900	17%	48,900	18%	25,100	19%	23,900	17%	49,000	18%
Canterbury Road	23,900	18%	26,300	19%	50,100	19%	23,700	18%	26,300	19%	50,000	18%
Total	131,800		136,600		268,400		134,200		140,300		274,500	
Central screenline												
Lyons Road West	10,000	8%	9900	8%	19,900	8%	9800	8%	9300	7%	19,100	7%
Queens Road	6000	5%	6700	5%	12,700	5%	4800	4%	4400	3%	9200	4%
M4 East	-	-	-	-	-	-	33,500	26%	34,200	26%	67,700	26%
Parramatta Road	37,200	31%	41,000	33%	78,200	32%	14,700	12%	21,700	16%	36,400	14%
Hume Highway	14,600	12%	14,800	12%	29,400	12%	13,100	10%	13,200	10%	26,300	10%
Georges River Road	22,100	19%	22,700	19%	44,900	19%	21,900	17%	22,600	17%	44,500	17%
Canterbury Road	29,100	24%	27,400	22%	56,500	23%	29,000	23%	27,200	21%	56,200	22%
Total	119,000		122,500		241,600		126,800		132,600		259,400	

Tolls are from the following table

M4 East - Project Overview - September 2015 - Adobe Reader

WestConnex Stage	Indicative min/max toll ($2013 incl. GST)
Stage 1 - M4 Widening & M4 East	Refer below
M4 Widening (Parramatta to Homebush)	Min: $1.50 Max: $3.90
M4 East (Homebush to Haberfield)	Min: $2.00 Max: $3.60
Stage 2 - New M5 (Beverly Hills to St Peters)	Min: $1.70 Max: $4.80
Stage 3 - M4-M5 Link (Haberfield to St Peters)	Min: $1.80 Max: $4.10
WestConnex total	**Min: $1.50 Max: $7.35 (capped)**

Table 3-5: WestConnex indicative tolling

http://www.westconnex.com.au/documents/m4east_project_overview_sept_2015.pdf

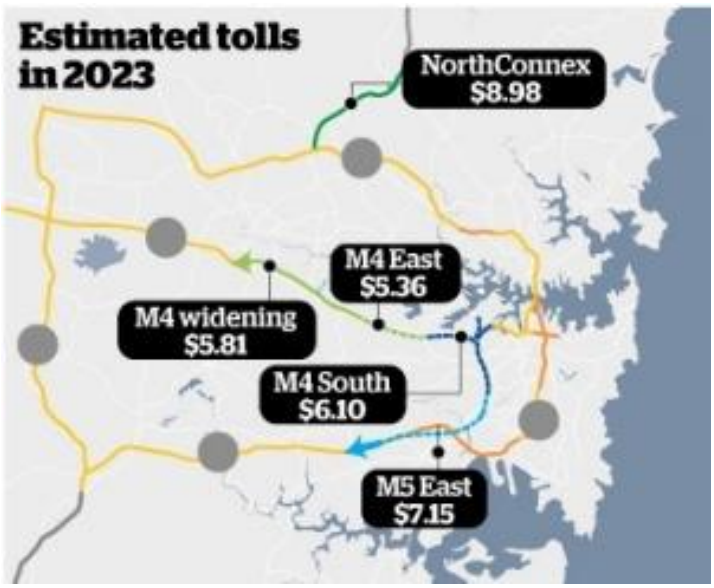
Let’s use the 2013 tolls and calculate toll-revenue

	AWT	toll	days	Subtotal		Commercial toll
M4 motorists	21800	$3.95	365	31.4		$10.0
M4 + M4 East	46700	$7.35	365	125.3		$18.6
M4East only	21000	$3.60	365	27.6		$9.1
Total				184.3		
Factor annual cost/revenue				467/184.3	2.53	
Financing and operating cost recovery				184.3/467	39%	

So tolls would have to be 2.53 times higher. Or, in other words the financing and minimum operating cost recovery is only 39%

No motorist would pay such tolls. This means that Sydney has grown so big and is so badly structured, ie. produces so much traffic that it is financially not viable. Therefore, it is a very bad idea to grow Sydney.

Now let’s recalculate this for the case of the government subsidy of $3.3 bn and construction cost of $4.8 bn. Private financing would then have to be $1.5 bn. Tolls are inflated by 1$ per quarter



http://www.smh.com.au/nsw/westconnex-new-sydney-motorway-to-push-toll-to-11-per-trip-20150507-ggw9ky.html

In 2021:

		In 2021 million dollars			
Repayment	$ 1,500	20	$75	pa	
Interest	$ 1,500	5.5%	$83	pa	
Operation			$5	pa	
			$163	pa	
	AWT	toll	days	Subtotal	
M4 motorists	21800	$5.45	365	43.3	
M4 + M4 East	46700	$10.14	365	172.8	
M4East only	21000	$4.96	365	38.1	
Total				254.2	
Financing and operating cost recovery				254/163	1.56

Oh dear, the taxpayer is getting a very bad deal. The government subsidy is so high that the financing cost recovery factor for private investors is greater than 1. Which means the toll-way operator would be getting rich.

It would be a waste of time to do a similar calculation for 2031 because we have no idea how the Middle East looks like in that year and what oil supplies would be coming through to Australia.

(2) Average Weekly Traffic (AWT) growth

Appendix G **"Traffic and Transport Assessment"** for chapter 8 introduces the concept of screenlines to get a handle on how traffic may change in the East-West road corridor on both the Northern and Southern side of Parramatta Rd.

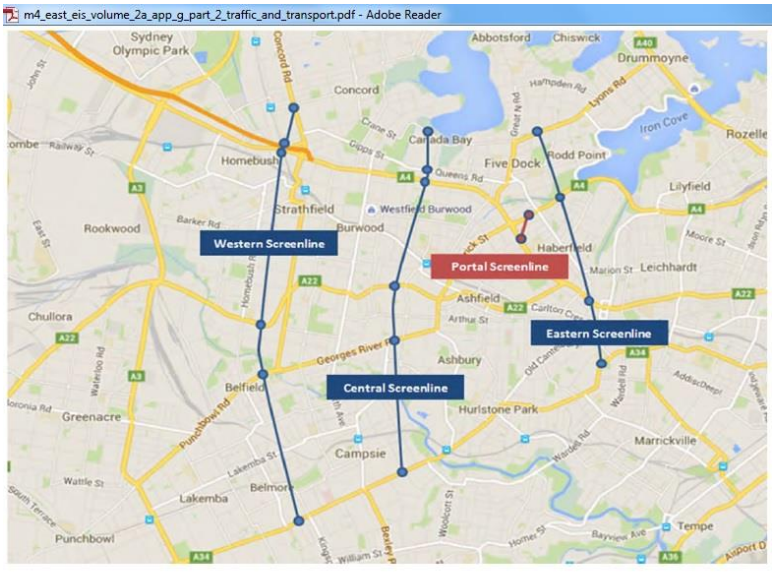


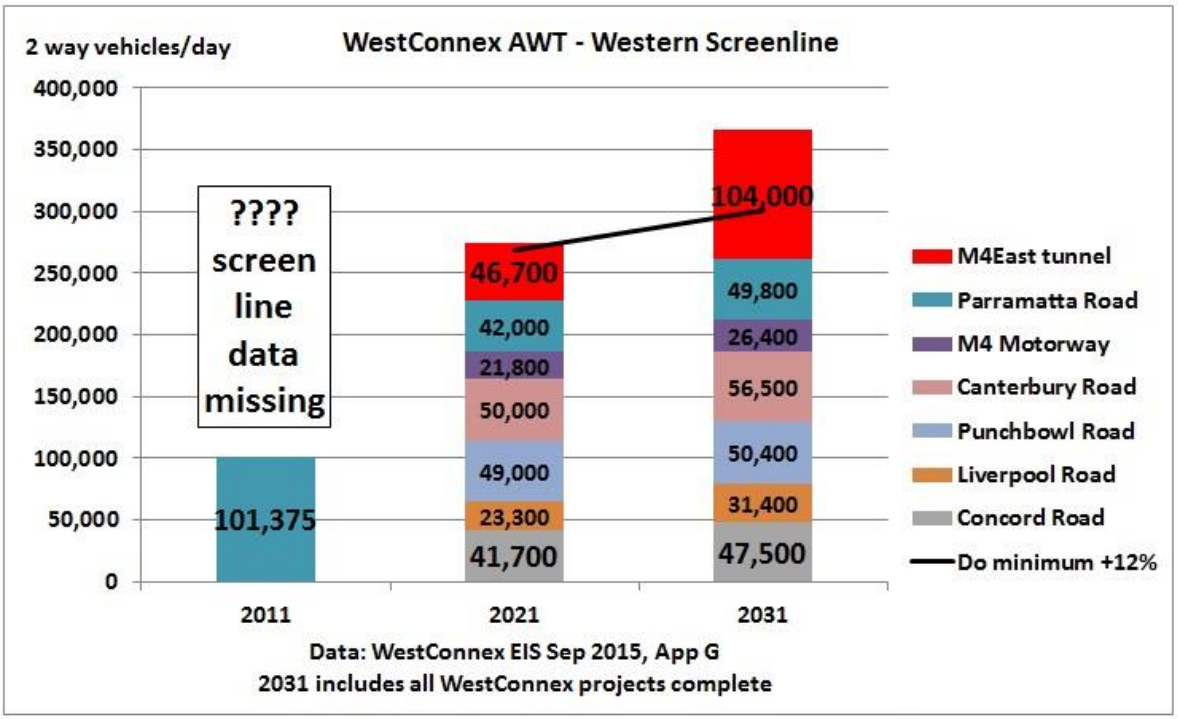
Figure 8.3 Modelled screenline locations. (Source: AECOM)

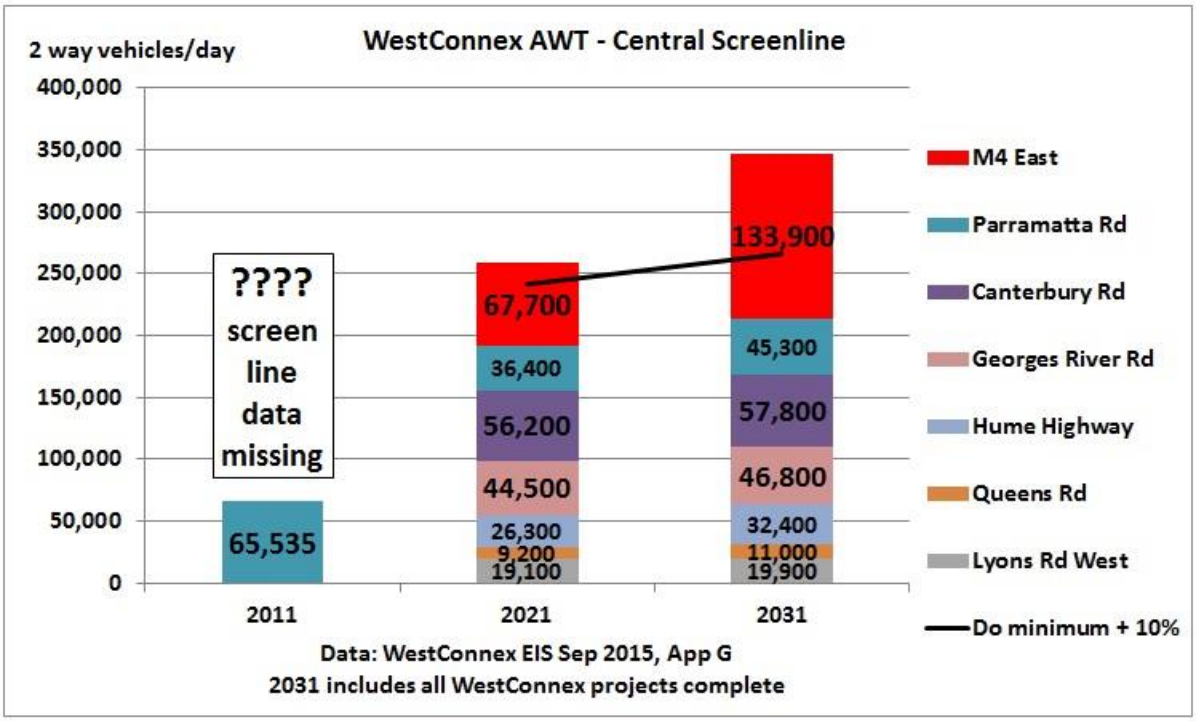
Table 8.1 covers 2021 and table 8.2 relates to 2031 but there is no table for the base year 2011 (or 2012). This is unacceptable. It should have come in section 5 "Existing Environment" and 5.4 "Traffic volumes and patterns". This information is necessary to check on assumptions how Parramatta Rd traffic would be re-distributed to other roads to avoid tunnel tolls. For this reason alone the EIS should be resubmitted with sufficient data.

In Appendix G it reads:

"A comprehensive suite of automatic traffic count (ATC) surveys were completed between 2012 and 2014 to understand and analyse existing traffic volumes and patterns within the study area. On Parramatta Road, two-way average weekday traffic (AWT) ranges from 101,375 east of the M4 Motorway to 89,060 west of Wattle Street, which equates to a 12 per cent reduction in daily traffic along Parramatta Road between these two locations. Moreover, AWT decreases to 63,535 vehicles per day on Parramatta Road at the Hawthorne Canal, which is a 37 per cent and 29 per cent reduction in comparison to the respective volumes east of the M4 Motorway and west of Wattle Street."

Sot let's put tables 8.1 and 8.2 into graphs. The EIS should actually have done this. The most interesting screenlines are the Western and the Central. We assume that 101,375 vehicles are on the Western screen line and 65,535 vehicles are on the central screenline.





The black line shows the "do minimum" AWT. We see a huge increase in artificially created, so-called induced traffic. Well done. Good for the toll-way operator. Bad for motorists.

The AWT growth 2021-2031 in the above graph is 3.3% pa. Compare that to population growth in the Greater Sydney area of 1.5% (Table 4.1).

Table 4.1 WRTM land use projections

Demographic	Land use projections (September 2014 BTS release) 2011	2021	2031
Population			
Total	4,146,074	4,895,173	5,654,288
Growth from 2011	-	749,099	1,508,214
Average annual growth	-	1.8%	1.6%
Employment			
Total	2,135,338	2,513,655	2,879,108
Growth from 2011	-	378,317	743,770
Average annual growth	-	1.8%	1.5%

(Source: WDA)

This can indicate 2 problems: Sydney has exceeded a size threshold where additional population creates more per capita traffic and/or because 65% of population growth comes from immigration the (rich) newcomers immediately adopt wasteful Australian lifestyles. It could also be that the authors of the EIS have gone over the top in their traffic projections as happened before.

My 2006 warnings on 2 road tunnels in Brisbane were not heard and are now in my I-told-you-so menu

http://crudeoilpeak.info/i-told-you-so/north-south-bypass-tunnel-clem7-brisbane
http://crudeoilpeak.info/airportlink-brisbane

If I had charged a success fee of 1:1,000, I would be a millionaire.

In the M4East EIS this graph this is the only illustration showing traffic growth.

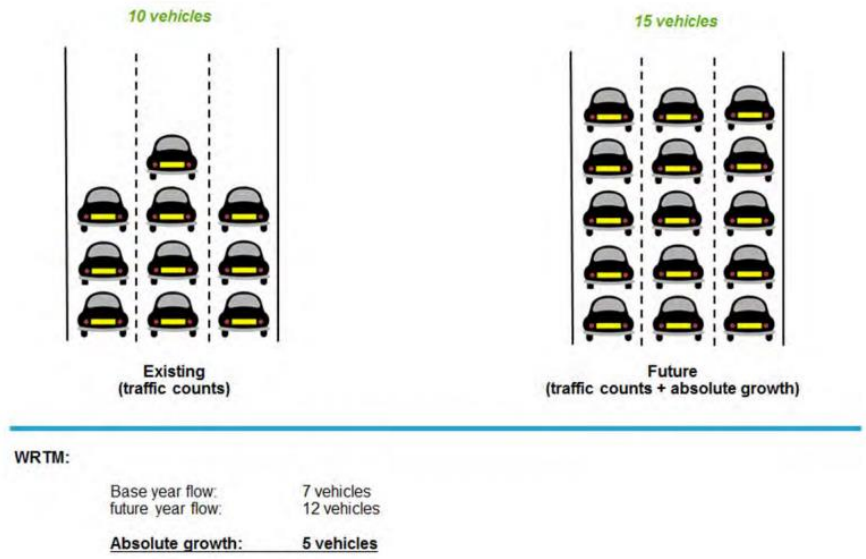


Figure 4.3 Illustration of the application of absolute growth. (Source: AECOM)

It is on primary school level.

(3) Huge risks

As usual, given the above twists in what we can only call tollopoly, no risk analysis is done in relation to oil supplies, or, more generally, on energy supplies for vehicles using the tollway during the planning period..

The M4East EIS is yet another set of documents where the word "oil" is only contained in the word "spoil", making the whole paperwork spoil itself. Because without sufficient oil supplies over the next 20 years, nothing will move. Especially in a country where not even the main rail lines between capital cities are electrified and where the only feasible transport fuel, natural gas, is exported and squandered in quantities equivalent to the total petrol, diesel and LPG consumption – leaving the emperor without clothes when the moment of the truth arrives. The number crunching is here:

7/4/2015
Australia's alternative transport fuel: The East Coast gas-ship has sailed
http://crudeoilpeak.info/australias-alternative-transport-fuel-the-east-coast-gas-ship-has-sailed

And all these pet EVs – if in any meaningful numbers on the road when the curtain falls – can't bring food to the cities.

The problem here is of course that the Secretary's Environmental Assessment Requirements (SEAR) do not include a resource analysis, a fatal flaw which will guarantee the failure of the project.

Already in a 2010 Sunset Seminar at the Sydney Uni

Planning for Sustainable Growth - Issues and Directions
http://sydney.edu.au/news/architecture/295.html?eventid=5893

I asked the then Director General for Planning, Sam Haddad in Q&A:

"Have you calculated how many million tons of coal, million m3 of gas and million barrels of oil you need to implement the Sydney Metropolitan Strategy for, say, 10 years and what would be the CO2 absorption capacity of the atmosphere when burning these fossil fuels?"

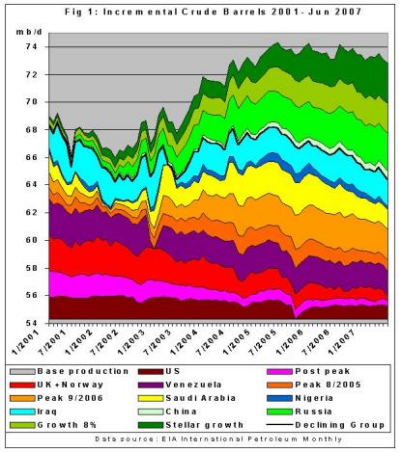
Answer: "Oh, that question is too hard"

Note the title of the event was already a contradiction. Endless growth as envisioned by the government is never sustainable. In 5 long years, nothing has changed, nothing has been learned. We get one resource ignorant document after the other. This will take terrible revenge. Because oil is the lifeblood of our economy.

(4) Peak oil. Where are we?

We are in the thick of it. Peaking is a process over many years, not an event limited to the year of maximum global production. We have many peaks.

We have the conventional oil peak in the rear view mirror. It happened around 2006/07 when Saudi oil production declined as maturing legacy fields couldn't produce more. In October 2007 we wrote an article "Did Katrina hide the real peak in world oil production?"



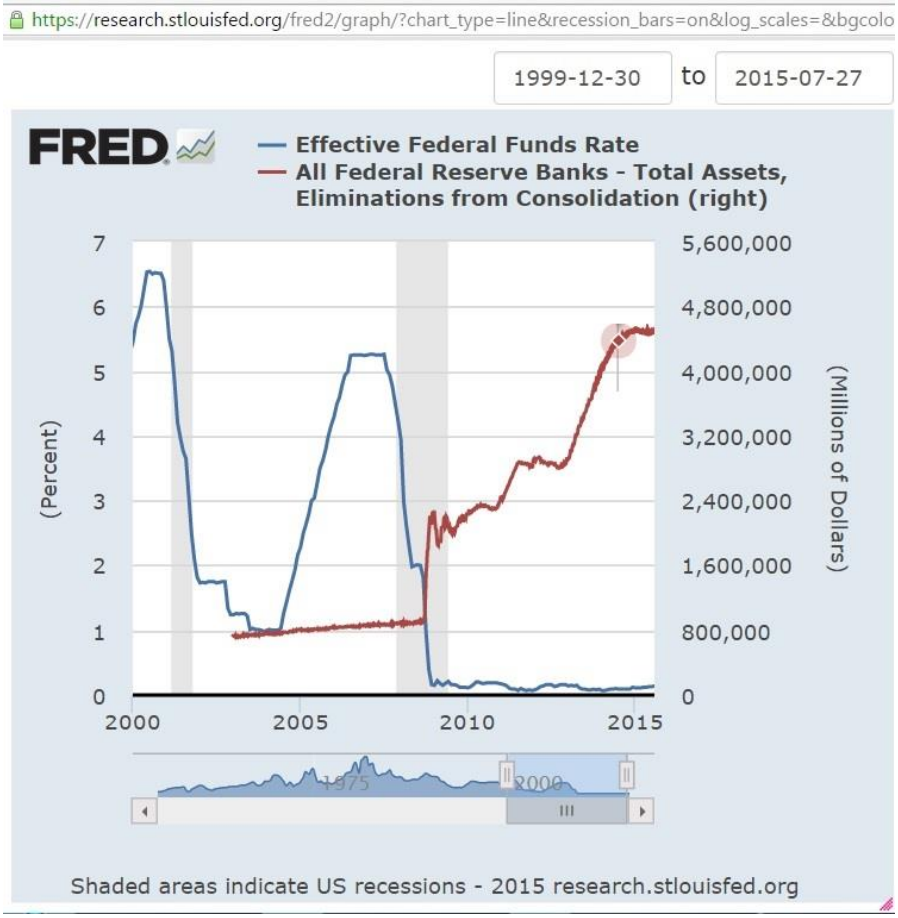
http://www.theoildrum.com/node/3052

High oil prices resulted in a recession in the US end 2007. That contributed to the subprime mortgage crisis. Additional oil demand for the Olympic Games in China drove oil prices sky high mid 2008.

The response to these events was

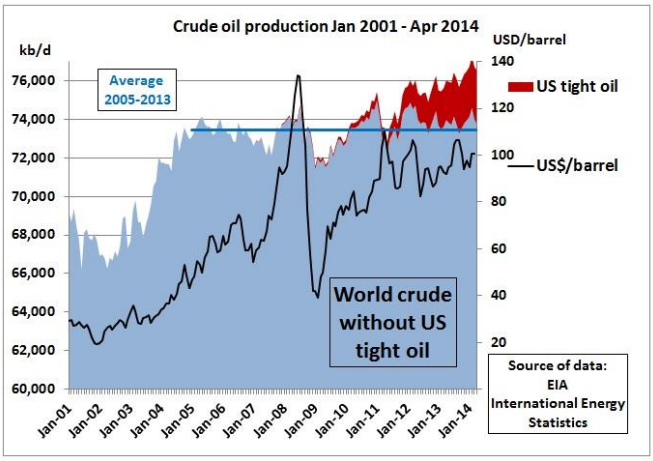
(a) unconventional oil (US shale oil and Canadian syncrude from tar sands)

(b) quantitative easing (money printing) and zero interest rate policy by the US Fed - without which there would not have been any shale oil boom



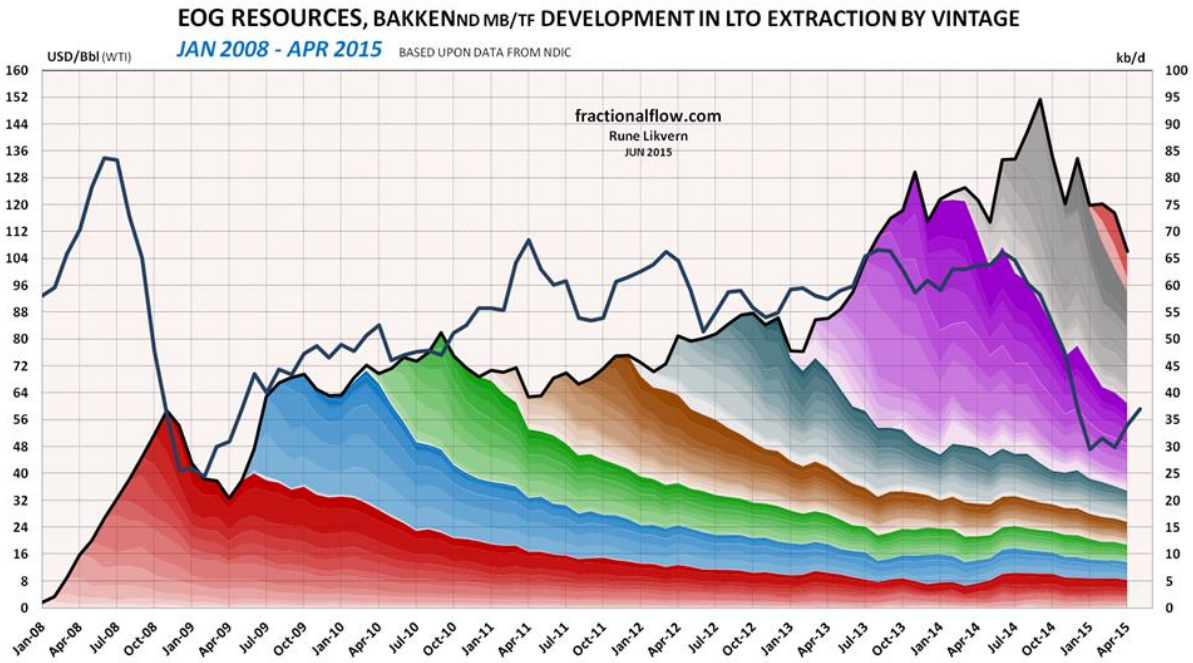
Since around 2007 we see here the desperate attempt of the US Fed to rescue the system by first lowering interest rates to almost zero and then embarking on a massive money printing exercise.

Without US shale oil the world would be in a deep oil crisis and the question of more toll-ways would not have arisen. Transurban would have defaulted on debt repayments (like the Lane Cove Tunnel)



The horizontal line shows that in the rest of world crude production is hardly higher than in 2005

Unconventional oil, however, is very expensive. An average US shale oil well is depleted by 80-90 % within 2 years, requiring continuous drilling of new wells.



https://fractionalflow.files.wordpress.com/2015/06/fig-3-eog-bakken-lto-by-vintage-apr-15.png

Tar sands are actually a mining operation, not oil production.

High oil prices 2011-2014 damaged the economy, also in China. In Australia, 60% of the budget deficit was caused by lower company tax after the GFC. Howard would have had exactly the same problem as Rudd.

28/5/2014
Australian budget hit by global financial crisis and high oil prices (part 1)
http://crudeoilpeak.info/australian-budget-hit-by-gfc-and-high-oil-prices-part-1

It is important to understand that each phase of high oil prices leaves permanent, irreversible damage behind

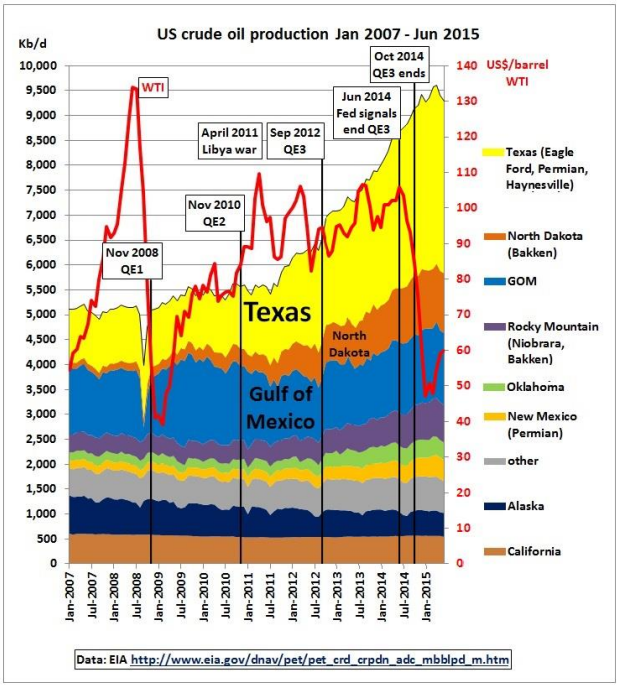
(i) as public and private debt
(ii) when companies close their business e.g refineries
(iii) investments are lost

Oil prices went down

(1) when the end of quantitative easing was announced
(2) as the US dollar went up
(3) while demand decreased due to the preceding period of high oil prices
(4) due to overproduction of shale oil
(5) due to high inventories in the US because light shale oil is not really the oil many refineries need

Current oil prices are insufficient for the oil industry to invest in new oil fields to replace declining oil production in existing fields. US production has already peaked. This has not happened earlier because oil companies have tried to produce as much as possible to meet debt repayment requirements.

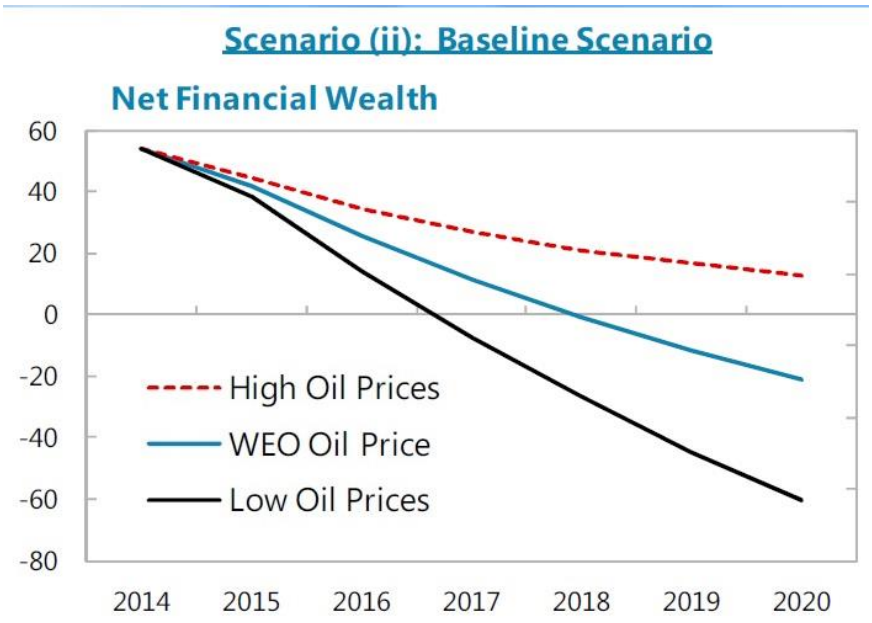
30/9/2015
US shale oil too expensive, peaks 1H2015

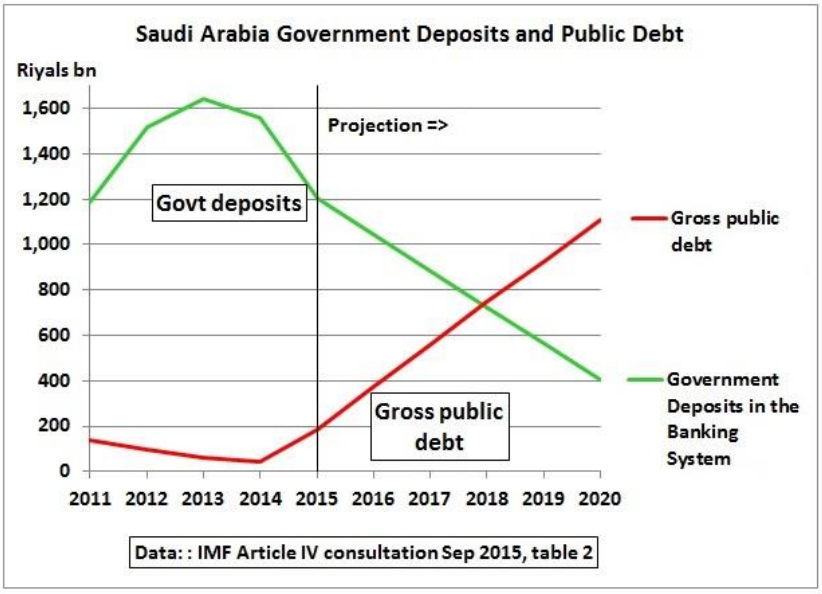


http://crudeoilpeak.info/us-shale-oil-too-expensive-peaks-1h-2015

(5) Next oil change: Arab Spring in Saudi Arabia

In the Middle East, Saudi Arabia's budget is in deficit and the IMF has calculated that net financial wealth will be zero by 2018.





18/10/2015
Saudi Arabia's fiscal break-even oil price to be around $US 100 mark for the foreseeable future
http://crudeoilpeak.info/saudi-arabias-fiscal-break-even-oil-price-to-be-around-us-100-mark-for-the-foreseeable-future

Given that the Saudis fight a costly proxy war against Iran on many fronts the budget situation can only get worse. This will spark social unrest. When (not if) that happens 8mb/d of oil exports are at risk. It would be imprudent, if not naïve to think we can wait until 2031.

The Saudi Collapse

It's Time for the United States to Start Worrying About a Saudi Collapse
7/10/2015
As if there weren't already enough problems to worry about in the Middle East, Saudi Arabia might be headed for trouble. From plummeting oil prices, to foreign policy missteps, to growing tensions with Iran, a confluence of recent events are mounting to pose serious challenges for the Saudi regime. If not properly managed, they could eventually coalesce into a perfect storm that significantly increases the risk of instability within the Kingdom, with untold consequences for global oil markets and security in the Middle East.
http://www.defenddemocracy.org/media-hit/john-hannah-will-the-united-states-help-if-saudi-arabia-starts-to-fall-apart/

Center for Democracy and Human Rights in Saudi Arabia, CDHR, Washington DC
July 2, 2015

Saudi-Wahhabi Schisms, King's Promises and Freedom of Expression, Elites and Public Well-being
The Foreseeable Extinction of The Saudi/Wahhabi Alliance

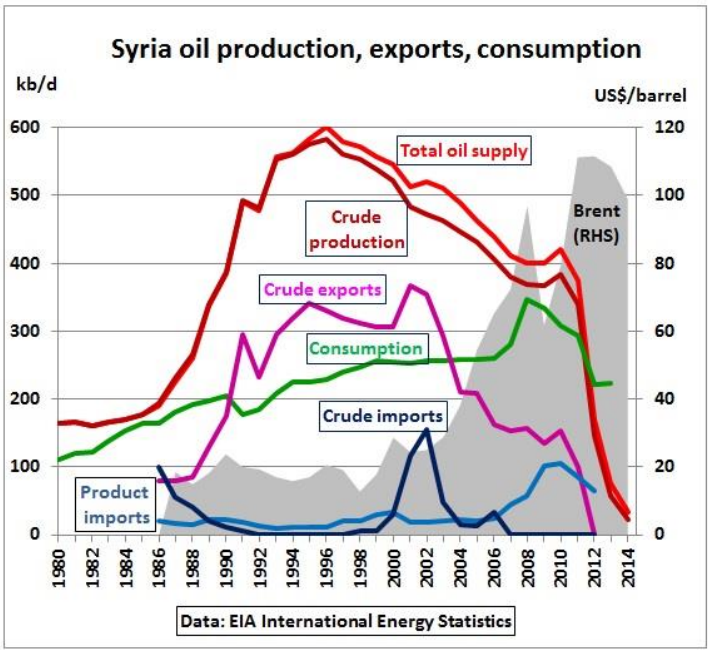
Given the unparalleled domestic and regional threats and amassed enemies facing the Saudi regime and its kingdom, it might only be a matter of time before the targeted Saudi Shi'a or one of the other Saudi regime's enemies, such as ISIS, Al-Qaeda, Al-Houthis or the Muslim Brotherhood, decide to blow up one of the massive and vulnerable oil facilities in Eastern Saudi Arabia where oppressed Shi'a and Western expatriates work and live. Thousands of miles of oil pipelines, as well as scores of storage tank farms, refineries, oil fields, harbors and the expansive oil administrative headquarters in Dhahran are easy targets despite the vigilance of Saudi and foreign security forces.

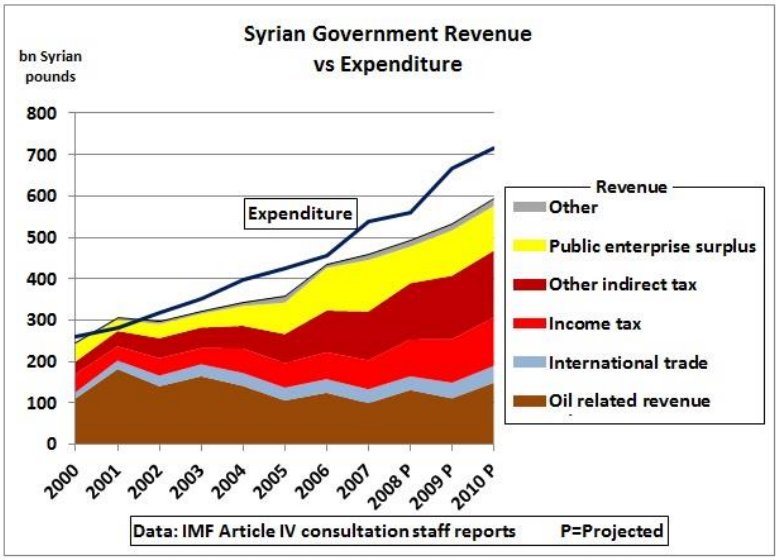
If this scenario were to occur, it's more likely than not that the US will use its Persian Gulf naval and ground military might to ensure the defense, production and shipment of oil to the world's markets in order to prevent global economic meltdown. The question is at what price to the Saudi people, to the US and other oil consuming powers? Can a costly military intervention by the US to protect oil be minimized or avoided? Potentially, yes, if the Saudi oligarchy is willing or can be induced to embark upon doable political reforms so that all citizens (regardless of religion, race, region or gender) are legislatively empowered to participate in all aspects of their country's affairs, including all decision-making processes, disposition of the country's wealth and the formulation and execution of domestic and foreign policies.

http://www.cdhr.info/index.php?view=article&catid=42:catnewsreleases&id=348:saudi-affairs&format=pdf

At present, one of our biggest problems is peak oil in dictatorships, a very dangerous process. Turn on your TV and you see it every day. An example is Syria:

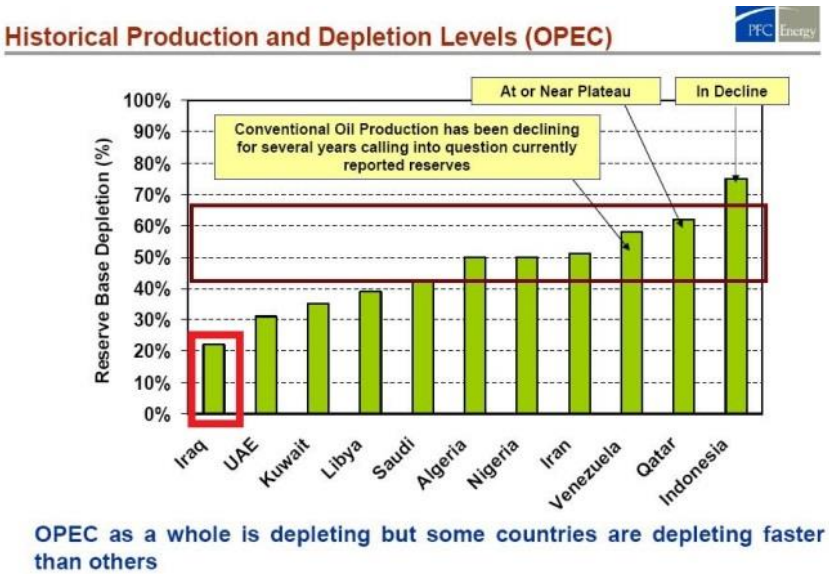
14/9/2015
Syria peak oil weakened government's finances ahead of Arab Spring in 2011





Declining oil revenue brought Syrian budget into deficit
http://crudeoilpeak.info/syria-peak-oil-weakened-governments-finances-ahead-of-arab-spring-in-2011

Russia and Iran now step into the power vacuum left behind by the US who in 2003 started to destabilize the whole area in the first place. Iraq's oil was historically under produced so that depletion levels in 2003 were much lower than e.g in Saudi Arabia or even Iran.



16/3/2013
Iraq war and its aftermath failed to stop the beginning of peak oil in 2005
http://crudeoilpeak.info/iraq-war-and-its-aftermath-failed-to-stop-the-beginning-of-peak-oil-in-2005

Syrian refugees now threaten the integrity of Europe. The sinkhole of the Middle East is growing by the week. Once sanctions on Iran are lifted Tehran will again become more belligerent in order to push up oil prices. Missiles are tested to prepare for that moment. There are no good scenarios there. The end result will be a big oil crisis. We need to get away from oil dependent infrastructure as soon as possible.

(6) Refinery closures

This is another sign of peak oil. This is because global crude oil exports have peaked since 2004. The weakest are hit first.

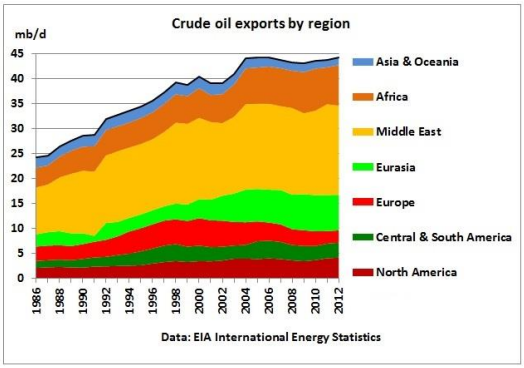
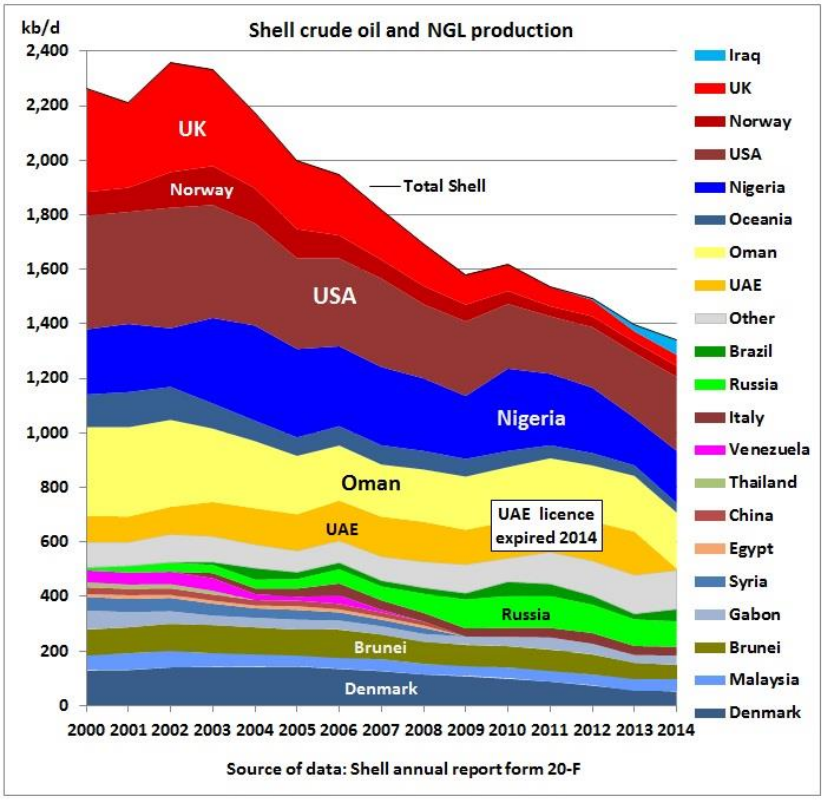


Fig Global crude oil exports by region

Even blind Freddy can see that global crude exports are peaking since 2004

Example Shell

Shell oil production peaked in 2002/03

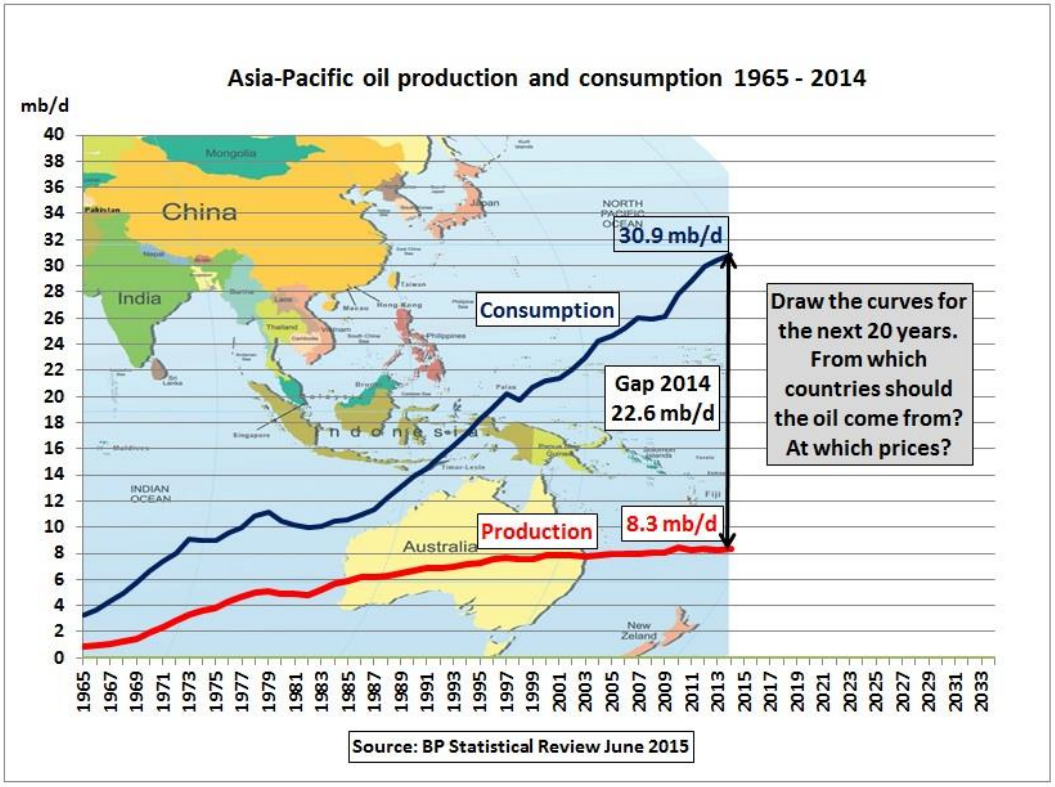


Shell has now given up on Arctic oil.

All this is ignored by the NSW government which seems to live on a different planet.

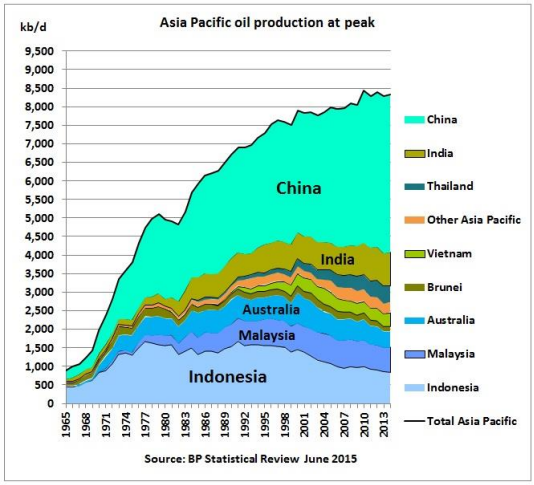
(7) No Asian Century

Those who think we are going to have an Asian Century with 100s of millions new middle class Asians should fill in this graph:



More details are available here:

23/6/2015
Asia's oil consumption at record high while production peaked in 2010

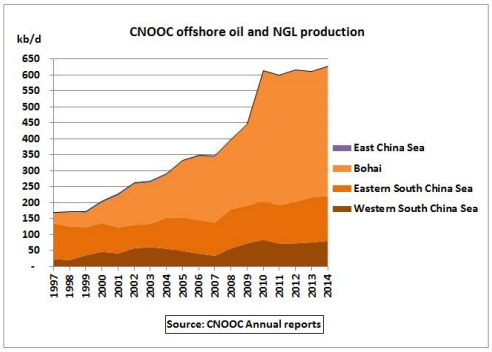


http://crudeoilpeak.info/asias-oil-consumption-at-record-high-while-production-peaked-in-2010

1/7/2015 Asia depends on Middle East for 66% of its oil imports
http://crudeoilpeak.info/asia-depends-on-middle-east-for-66-pct-of-its-oil-imports

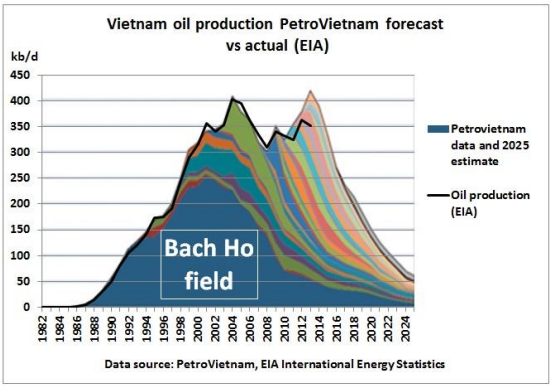
And since we are Asia, look at the South China Sea problem:

10/6/2015 China's offshore CNOOC started to peak in 2010



http://crudeoilpeak.info/chinas-offshore-cnooc-started-to-peak-in-2010

12/5/2014 10 years after peak oil in Vietnam: Asian Century sails into troubled waters in the South China Sea



http://crudeoilpeak.info/10-years-after-peak-oil-in-vietnam-asian-century-sails-into-troubled-waters-in-the-south-china-sea

(8) Conclusion

WestConnex is a narrow minded, Sydney centric project which will not solve any problems but rather add to existing problems. Narrow minded because proponents of WestConnex obviously cannot see that the world has (at least) 4 big problems symptoms of which can be seen every day on TV:

(1) Peak oil
(2) Accumulated debt
(3) Global warming (CO2 debt)
(4) Disintegration of the Middle East

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