

Submission EWP 2013/14 issues paper

This submission relates to following website: <http://ewp.industry.gov.au/>

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Summary

The underlying objective in the issues paper is to dig deeper fossil fuel holes without having done calculations on whether there is sufficient CO₂ absorption capacity in the atmosphere to keep under 2 degree warming. What a 0.6 degree warming means we are just learning in extreme heat waves killing not only our agriculture but also people in cities. Coastal resorts learn it as their beach erodes away. UK learns it in floods. Even the Darwin rail line is interrupted.

Nor does the issues paper propose to do any calculations on oil supplies and oil prices, both locally and globally. The outdated NESO assessment on energy security done by the previous government would not be reviewed.

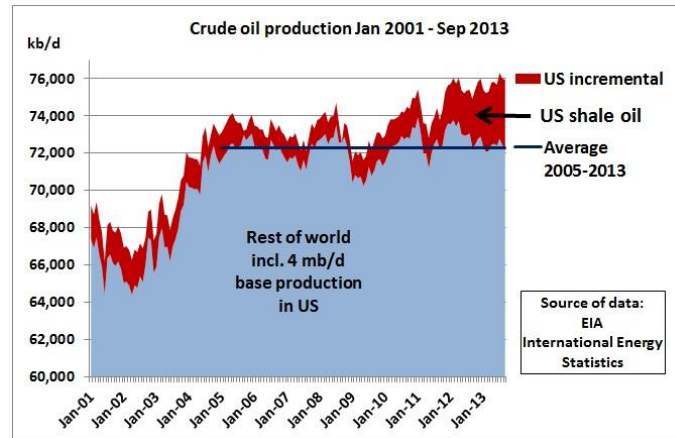
The thorny issue of peak oil has been completely omitted. The global peaking of oil production – the superimposition of many country peaks - has to be understood as a complex process spread over many years rather than an event occurring in the year of maximum production which still lies ahead. The process started with a 1st peak in 2005, followed by decline until 2007. The resulting high oil prices caused a recession in the US in late 2007. At that point in time it was immaterial that oil production would increase later.

In 2008 we had a 2nd peak, the Oilympic peak, mainly Saudi Arabian supplies for the Olympic games in China. The resulting spike in oil prices of \$147 triggered the financial crisis when the economy had a pre-condition of accumulated debt. The problem cannot be solved as paying back debt requires a continuously growing economy but an oil dependent economy cannot grow if crude oil production does not grow commensurate with the requirements of the economy. For every percentage point of GDP growth around half a percent of oil production growth is needed. This percentage differs from economy to economy.

The proper response to peak oil would be to reduce oil consumption in the economy, a fundamental increase in the productivity of using oil. But this is not done. It would require a massive shift away from car and truck based traffic to electric rail development.

Instead, the response in the US was quantitative easing (asset purchases). QE allowed the US economy to pay for oil it could actually no longer afford. Compare \$85 bn per month of QE with \$55 bn per month of expenditure for oil. The EU and also China followed with similar policies of cheap money creating asset bubbles. Part of the printed liquidity found its way into the US oil and gas industry, creating the shale boom.

US shale oil (tight oil) has given us a couple of additional years to get away from oil-dependent infrastructure but this opportunity is not being used because governments still have not understood (or do not want to publicly admit it) that high oil prices in the 1st decade of the 21st century triggered the financial crisis, a crisis which has impacted on budgets, thus reducing the paying capacity of governments for infrastructure.



When US shale peaks in the next years there will be surprises

As the underlying debt problem has not been solved the financial crisis can go into its next, more damaging phase anytime from now. At the same time, US shale oil will peak quite likely before 2020. This is because shale wells deplete at an astronomical rate of 6% per month creating a continuous treadmill to replace declining production. So we are running out of time to prepare for higher oil prices and also oil shortages.

Every economic activity is a transformation of primary energy into useable energy. If this transformation is not efficient or if the costs are too high –including environmental and climate change costs- then the economy suffers. Peak oil and global warming are physical processes which force themselves on us. An energy white paper which does not truthfully deal with this will be of limited use.

About Crude Oil Peak

The website <http://crudeoilpeak.info/> uses government and publicly available company data to design graphs showing the evolving peaking of crude oil production. Peak oil has already happened in many countries (e.g. UK, Egypt, Yemen, Syria) and has affected many companies. Latest examples in Australia are refineries (Clyde, Kurnell), mining (Olympic Dam, Gove), aviation (Qantas) and car manufacturing (Ford, Holden).

The website contains:

- Currently 170 posts spanning a period of 10 years
- A main menu with graphs on oil production, consumption and imports in many countries, with a focus on Australia
- A menu allowing easy access to all posts by category
- A sidebar menu with popular themes on oil
- External links to ABC TV oil crunch stories

Pageviews in 2013: 90 k

Addressing the Terms of Reference

(1) Quote: *Box 2: Additional processes relevant to the Energy White Paper* (p 6)

Comment: Following changes to legislation with relevance to energy have not been mentioned:

- (1.1) The Infrastructure Australia Amendment Bill 2013 which has the purpose to push through an ambitious highways and toll-ways program. The EWP paper needs to calculate how much and which type of energy at which cost can be made available for the operation of infrastructure proposed in this program, over the lifespan of this infrastructure, usually several decades.
- (1.2) Legislation to abolish the Clean Energy Finance Corporation. The EWP needs to explain how it is going to replace the function of this Corporation.

(2) Quote: *The Energy White Paper will be completed in September 2014* (p 5)

Comment: This will miss the IEA World Energy Outlook to be published in November 2014. An even numbered WEO always contains a major analysis of oil production. Previous EWPs in June 2004 and October 2012 have also missed WEO dates and were therefore outdated the moment they were released. <http://www.worldenergyoutlook.org/>

(3) Quote: *The Issues Paper—provides an overview of the identified issues of interest to the Government and outlines questions to prompt discussion and input from stakeholders.* (p 7)

Comment: The issues paper already contains objectives without questioning them e.g. perpetual growth of fossil fuel energies without CO2 limitations.

(4) *Security of electricity supplies* (p 11)

Global warming means that any reliability standards will be hard to meet, at an increasing rate.

Power cut as heatwave bears down

14/1/2014

<http://www.smh.com.au/environment/weather/power-cut-as-heatwave-bears-down-20140114-30rif.html>

The government has not understood that climate change events (floods, droughts, storms) will physically and financially (via huge damage and repair bills) force us to replace coal with renewable energies within a limited timeframe. Therefore, our current electricity supply system is NOT secure. It is made even less secure by adding new electricity consumers like:

- High rise developments, whether residential or commercial
- Hotels, casinos and other power hungry entertainment facilities

So the EWP needs to develop a plan how to transition away from coal. This will have to include a strategy how to retrain the workforce because many coal-related jobs will go – whether the government likes it or not.

(5) Quote: *The Australian Bureau of Statistics estimates that household electricity prices have risen 59 per cent over the past four years. This is mainly due to the significant investment required for new and ageing network infrastructure to ensure supply reliability. The carbon tax and green energy schemes, such as the Renewable Energy Target and state feed-in tariffs, have also had significant impact.* (p 11)

Comment: That really needs to be separately quantified:

- (a) New infrastructure to be paid by new consumers (why should the average household pay for new transformers, grid infrastructure and power plant capacities for e.g. a new casino, international hotels or office skyscrapers in Darling harbour?)
- (b) Ageing network maintenance to be paid by all consumers
- (c) Carbon tax and green energy schemes to be paid by all consumers and to be spent on

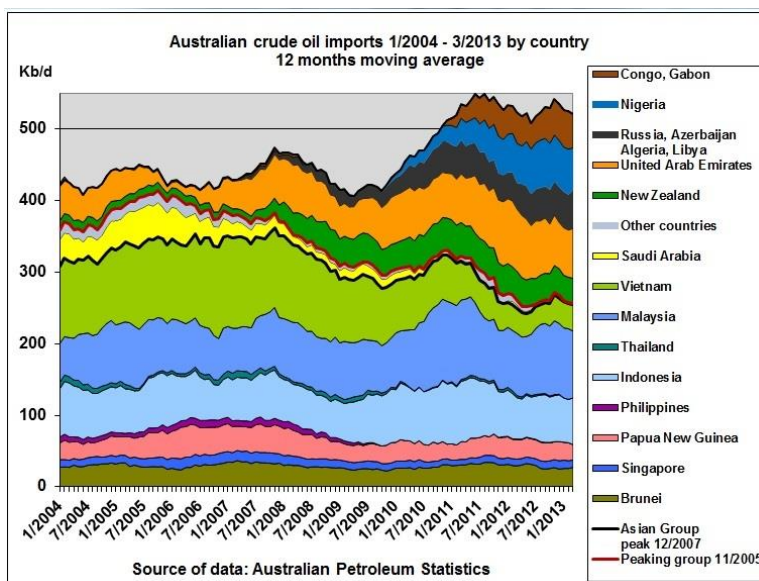
The wording

The Government seeks comment on ways community expectations can be better understood and reflected in reliability standards. (p 11)

needs to be changed to:

How can the government bring the community to reduce power consumption, especially during heatwaves?

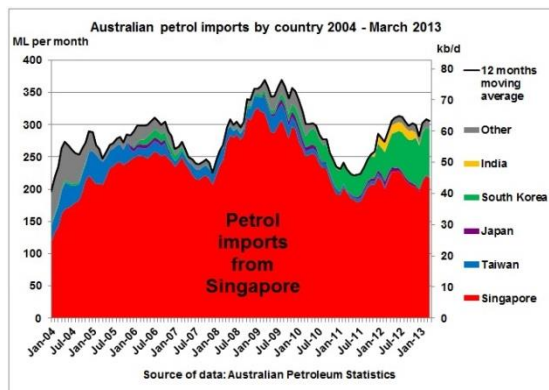
(6) Quote: *Liquid fuel imports are sourced from a diversity of suppliers under stable market arrangements resulting in a high degree of confidence in Australia's liquid fuel security.* (p 11)



Comment: Nothing could be further from the truth. Each closing of an Australian refinery means that the historic diversity of crude oil suppliers is being reduced.

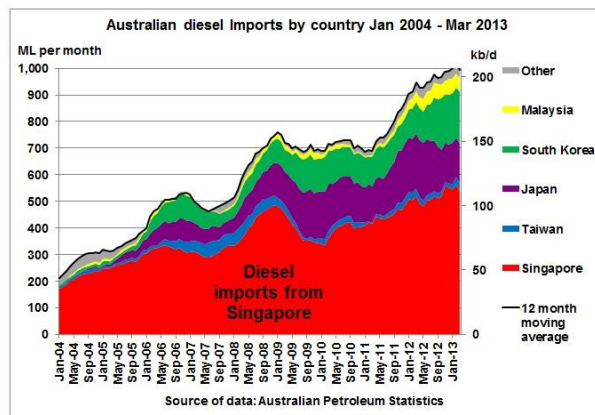
<< this graph from my website indeed shows a diversity of crude oil suppliers. We see the Asian group peak in 2007 and the successful efforts of the Australian refining industry to both offset decline in Asia and provide for growth by getting

crude from Africa and even the former SU. But obviously that has become too hard and that will have contributed to the decisions to close down Clyde and Kurnell.



The import of fuels is much less diversified:

Singapore, South Korea and Japan are not oil producing countries and mainly depend on crude imports from the Middle East.



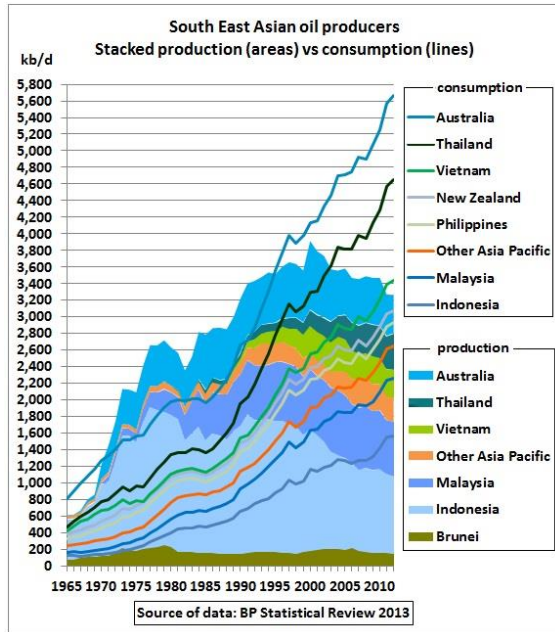
Australia's fuel supplies are now 37% dependent on the Middle East either directly or indirectly:

Apr 2012 - Mar 2013	Total (ML)	Import share	From Asian refineries (ML)	Middle East dependency	From ME (ML)
Refinery production	36,775			14%	5,148
Fuel imports					
Diesel imports	11,225				
Singapore		54%	6,061	94%	5,698
Japan		15%	1,684	82%	1,381
South Korea		20%	2,245	84%	1,886
Petrol imports	3,672				
Singapore		71%	2,607	94%	2,450
South Korea		25%	918	84%	771
LPG imports	1,023			100%	1,023
Aviation fuel imports	2,252				
Singapore		77%	1,734	94%	1,630
Japan		5%	122	82%	100
South Korea		15%	347	84%	291
Subtotal fuels above	18,171			84%	15,229
Other	2,855				
Singapore			710	94%	667.4
South Korea			260	84%	218.4
All imported fuels	21,026			77%	16,115
Refinery production + fuel imports				37%	21,264

24/6/2013 Australian oil and fuel dependency on the Middle East is 37%

<http://crudeoilpeak.info/australian-oil-and-fuel-dependency-on-the-middle-east-is-37>

I had sent this link to the EWP secretariat on 25/6/2013. It is incomprehensible that these important facts have not been checked when writing the issues paper, irrespective of which party is in power.



<< South East Asian oil demand exceeds regional oil production which has already peaked in 2000.

This will guarantee stiff competition for crude oil imports into the region and the distribution of fuels to consumers.

18/6/2013

South East Asian oil producers - the widening gap between oil production and consumption

<http://crudeoilpeak.info/south-east-asian-oil-producers-the-widening-gap-between-oil-production-and-consumption>

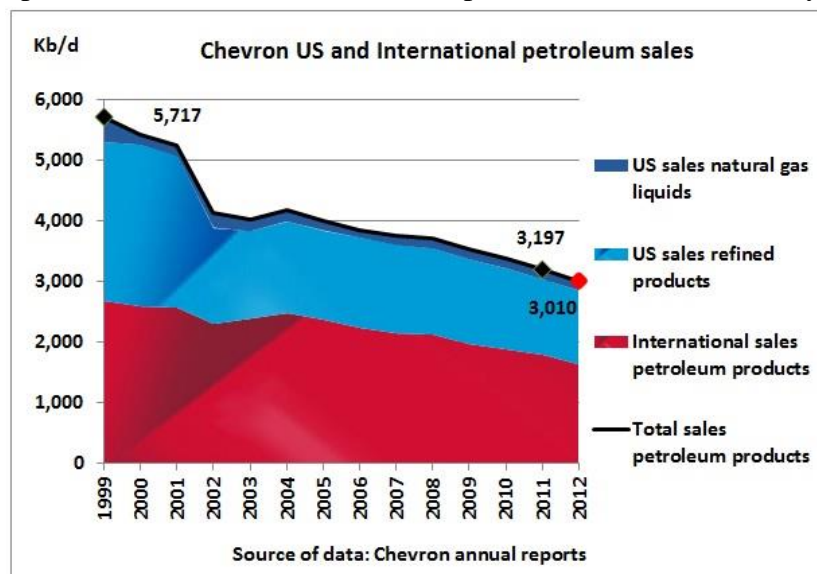
Moreover, the public is not being properly informed about the context in which Australian refineries are closing

27/7/2012

After Sydney's refinery closure: Caltex to import fuel from Chevron's shrinking sales

<http://crudeoilpeak.info/after-sydney-refinery-closure-caltex-to-import-fuel-from-chevrons-shrinking-sales>

Updated in this post: 28/8/2013 Chevron's oil production, sales decline by 5%



<http://crudeoilpeak.info/chevrons-oil-production-sales-decline-5>

That is called “stable market arrangement”? The Caltex CEO promised that Chevron can supply fuels for Sydney’s growing demand. He was not corrected, neither by the then Resource Minister nor the media.

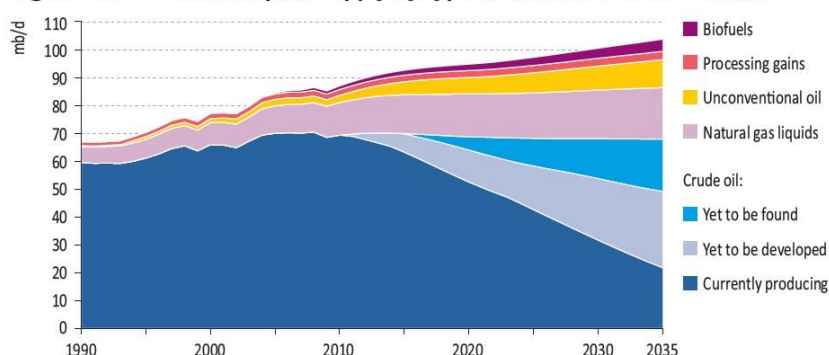
(7) Quote: *Australia relies solely on the commercial stockholding of industry to meet its treaty obligation and is the only IEA member to do so.*

Comment: Why not plainly admit that Australia has no strategic oil reserve. No help can be expected from other IEA member states in an oil supply shortage.

(8) Quote: *The 2011 National Energy Security Assessment concluded there is sufficient global oil production and refining capacity to supply the Australian market to 2035, even with declining domestic refining capacity. Energy security would remain stable whether Australia imports finished products or crude oil, noting around 80 per cent of refinery feedstock is imported. (p 12)*

Comment: The first sentence is only a partial, very selective quote. NES (Dec 2011) uses the IEA WEO November 2011.

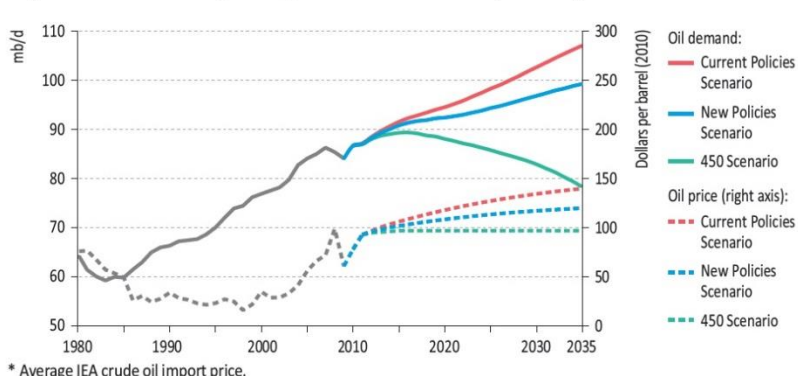
Figure 3.16 • World liquids supply by type in the New Policies Scenario



<http://www.worldenergyoutlook.org/publications/weo-2011/>

What the WEO 2011 really showed in the New Policies Scenario was a declining (conventional) crude production curve from currently producing and yet to be developed fields. Production from yet-to-be-found fields has obviously been tweaked to arrive at a practically flat curve. As this is the main refinery feedstock, especially for diesel and jet fuel, it can hardly be called sufficient in view of demand from Chindia and other developing countries. The other components of “oil”, e.g. natural gas liquids are not as versatile as crude oil. Unconventional oil is of course contentious due its higher CO2 emissions, water requirements and environmental damage.

Figure 3.1 • World primary oil demand and oil price* by scenario



Neither does the issues paper mention the 450 ppm scenario: *“In contrast, under the 450 Scenario, production peaks before 2020, as a result of a peak in demand rather than supply*

constraints, driven by the implementation of ambitious global greenhouse gas reductions, which would encourage the more efficient use of oil and the development of alternatives. This implies that uncertainty and risk over time can be partially mitigated by moderating demand – whether driven by climate change mitigation policy, sustainable planning, incentives for increased use of public transport, or improvements in efficiency stemming from government policy and commercial and technological innovation. However, meeting the projected trends in the WEO 2011 requires significant global investment in oil supply infrastructure.” (p 20) <http://www.innovation.gov.au/energy/Documents/Energy-Security/nesa/LiquidFuelsVulnerabilityAssessmentReport2011.pdf>

These investments have been summarized by region in the IEA WEO 2013:

Table 14.7 ► Cumulative investment in upstream oil and gas supply by region in the New Policies Scenario, 2013-2035 (\$2012 billion)

	Cumulative total		Annual average
	Oil	Gas	
OECD	3 354	2 383	249
Americas	2 826	1 645	194
United States	2 060	1 276	145
Europe	450	562	44
Asia Oceania	77	176	11
Non-OECD	6 041	3 331	407
E. Europe/Eurasia	1 180	937	92
Russia	739	610	59
Asia	664	972	71
China	422	347	33
India	59	117	8
Middle East	872	245	49
Africa	1 507	711	96
Latin America	1 818	466	99
Brazil	1 270	118	60
World	9 394	5 714	657

From page 496, IEA WEO 2013

Given the debt problem it is not clear how all these investments are going to be financed.

On the NESA website

<http://www.innovation.gov.au/Energy/EnergySecurity/nesa/Pages/default.aspx>

there are other interesting documents which need reviewing.

(8.1) ACIL Tasman’s Liquid Fuels Vulnerability Assessment Report October 2011 was already outdated the time it was published:

Quote: Overall, on the basis of analysis conducted for the preparation of this report, ACIL Tasman found that **recent market developments have not resulted in a significant change in Australia's liquid fuels vulnerability since the [November] 2008 review** from the perspective of adequacy, reliability or affordability.

<http://www.innovation.gov.au/energy/Documents/Energy-Security/nesa/LiquidFuelsVulnerabilityAssessmentReport2011.pdf>

Comment: This is surprising as the bibliography contains following publications:

Hamilton, J. (2009a), "Understanding Crude Oil Prices", *Energy Journal*, 30, 2, pp. 179-206.

Hamilton, J. (2009b), "Causes and Consequences of the Oil Shock of 2007-08", *Brookings Papers on Economic Activity*, Issue 1, Spring, pp. 215-261.

In the latter article Hamilton writes:

Whereas historical oil price shocks were primarily caused by physical disruptions of supply, the price run-up of 2007-08 was caused by strong demand confronting stagnating world production. Although the causes were different, the consequences for the economy appear to have been very similar to those observed in earlier episodes, with significant effects on overall consumption spending and purchases of domestic automobiles in particular. In the absence of those declines, it is unlikely that we would have characterized the period 2007:Q4 to 2008:Q3 as one of economic recession for the U.S. The experience of 2007-08 should thus be added to the list of recessions to which oil prices appear to have made a material contribution.

http://muse.jhu.edu/journals/brookings_papers_on_economic_activity/v2009/2009.1.hamilton.html

ACIL Tasman failed to analyse that the financial crisis was caused by the convergence of accumulated debt and high oil prices.

(8.2) ACIL Tasman's Strait of Hormuz disruption scenario (of July 2012) assumes a 1st week closure, a 25% supply restoration in the 2nd week and full resumption in the 3rd week. The incident was thought to last just 7 weeks, with another 16 weeks stock-rebuild. Petrol and diesel prices were estimated to go up by around 50%, to \$2.13 and \$2.47 respectively - on the basis of parity between AU\$ and US\$.

http://www.innovation.gov.au/energy/Documents/Energy-Security/nesa/NESA_IdentifiedIssues-StraitHormuzShockScenario.pdf

Comment: It is doubtful whether IEA member countries will assist Australia which is in violation of its stock holding obligations. But more importantly, the scenarios have changed. Due to increasing civil war/unrest in Syria, Iraq and Yemen as well as the conflict between Saudi Arabia and Iran any disruptions may now extend over a prolonged period of time as fights are likely to spread beyond the straits of Hormuz. What has also changed is what may happen to the AU\$ in an oil shock which will hit China's economy hard. Given uncertainties about China's debt which have emerged recently any weakness in China's growth rates may

put downward pressure on the AU\$, exacerbating the impact of global crude and product prices.

(8.3) Hale and Twomey's Competitive Pressures on Domestic Refining (June 2012) writes:

Along with diesel, the Asian refinery system has excess jet production and this is forecast to continue. (p iii)

Over this decade, FGE is forecasting the Asian petrol balance will move from surplus to shortage. The shortage is forecast to be met from surpluses forecast for the Middle Eastern and European refining systems. (p iii)

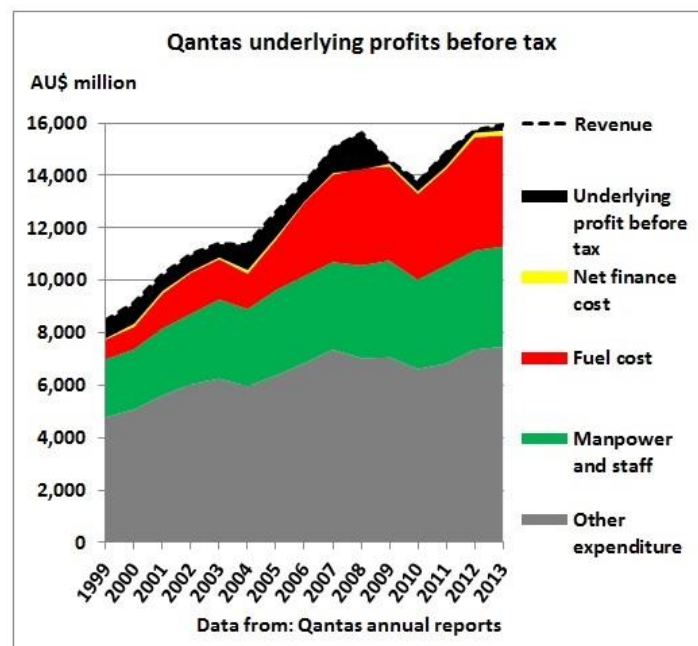
Most product imports will be coming from similar regions as the crude it replaces so it is unlikely to create any new potential choke points. (p iii)

In the hypothetical case of having no refining sector, Australia would lose the ability to refine domestic crude production (while much domestic crude does not suit Australian refineries in an emergency it could be run albeit at reduced rates - forecast production would load four refineries at about 75% producing about 30% of Australia's product demand). (p iv)

The scenarios necessary to cause this sort of market disruption (effectively some sort of market failure) are of low probability. Analysis of the disruption events over the past thirty years show that they are not this severe - the markets kept operating and crude and product could be secured (albeit at higher prices in most events). It is possible those events would have had a similar impact on Australia in the case of Australia having a refining system or if it had been completely dependent on imports. (p iv)

http://www.innovation.gov.au/energy/Documents/Energy-Security/nesa/NESA_IdentifiedIssuesCompetitivePressuresRefining.pdf

Comment: Any excess jet fuel production has not helped Qantas

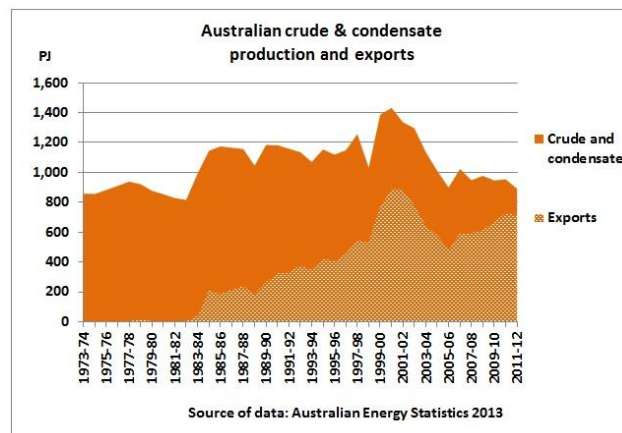


10/12/2013 Qantas fuel cost increased 3 times more than seat kms

<http://crudeoilpeak.info/qantas-fuel-cost-increased-three-times-more-than-seat-kms>

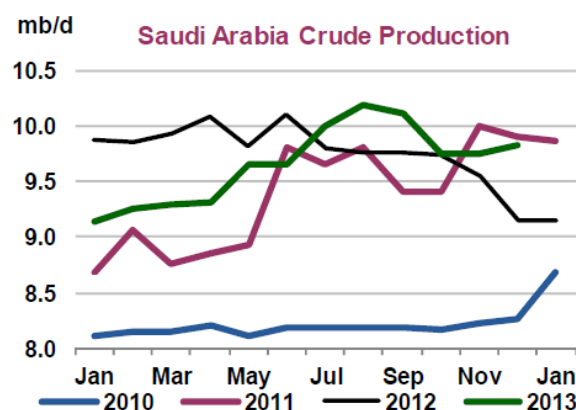
How long the zero-sum game between different regions of the world will continue peacefully, is another question altogether. The regions for crude and fuel imports are different as shown above.

The following graph shows how Australia exports itself oil-poor:



So the theoretical option of producing its own fuels from its own crude (heavier fractions not available) in its own refineries is also fading away. But one or 2 refineries could at least provide for the basic requirements of running inter-state trains, buses, agricultural machinery, trucks to move food, emergency vehicles etc.

The logic “markets kept operating for 30 years so there will be no problem in future” is of course complacent. We are now in the 3rd and last oil crisis with little spare capacities in OPEC. Most important is Saudi Arabia:



<http://omrpublic.iea.org/omrarchive/21jan2014fullpub.pdf>

We can see that end 2013 Saudi Arabian crude production of 9.56 mb/d was slightly below maximum production which was sustained only for 3 months. So in 2 years we have not come far:

2/3/2011 WikiLeaks cable from Riyadh implied Saudis could pump only 9.8 mb/d in 2011
<http://crudeoilpeak.info/wikileaks-cable-from-riyadh-implied-saudis-could-pump-only-9-8-mbd-in-2011>

Recommendation: The Energy White Paper 2014 must contain an updated liquid fuels security assessment, including new modified oil shock scenarios, preferably from a different consultant as ACIL Tasman is unlikely to contradict their previous assessments.

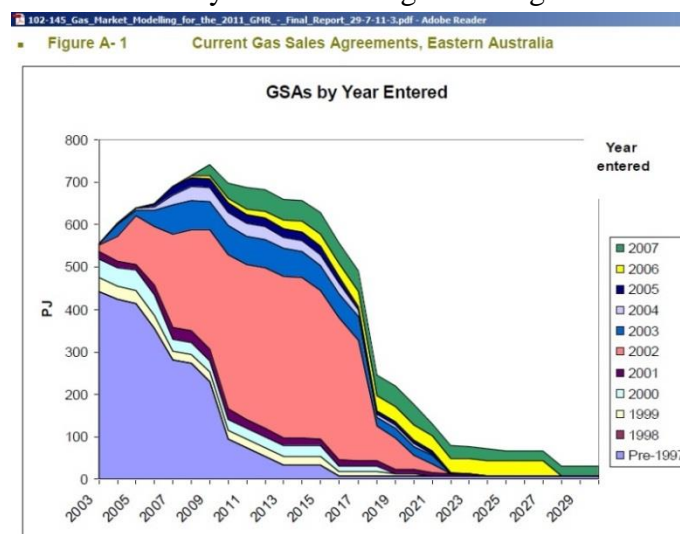
(9) Quote: *The Government seeks comment on the value of developing fuel reserves to meet Australia's international oil security obligations, and augment domestic security.*

Recommendation: The IEA obligations must be met otherwise Australia cannot be expected to be assisted in emergency situations. The costs should be borne by the consumer and not the government. The storage should be located in Australia and not overseas in order to have actual, physical control of the reserves. The mix crude oil/ fuels must be kept flexible depending on local refinery capacity. The best long-term solution would be for government to use subcontractors to explore for oil and once reserves have been delineated, seal the wells and leave the oil in the ground for use later when it is really urgently needed. The government could also buy one of the refineries in which the private sector is no longer interested, mothball it and re-open it using the reserves left in the ground. This is necessary under the assumption that one day global oil markets will become dysfunctional. Few foresaw the GFC. The equivalent of the credit crunch is a physical collapse of oil supplies. It will happen, the question is only when.

The best way to augment domestic security is a strategy to reduce oil demand and to get away from oil. In the transport sector this means a massive electric rail development program, both urban and interstate and both passenger and freight. The objective must be to REPLACE EXISTING oil dependent traffic rather than providing for growth from future immigration, for example. In a transitional phase, freight locos could be converted to dual fuel LNG/diesel.

(10) Quote: *The picture for gas security presents some challenges on the east coast.* (p 13)

Comment: Why not be frank and say there will be gas shortages in the East.



<http://www.globalskm.com/Insights/News/2011/SKM-MMA-Gas-Market-Report.aspx>

This problem is entirely home-made. The Howard government failed to build a transcontinental gas pipeline to bring conventional gas from West to East. As East coast conventional gas reserves are in decline CSG had to be developed, but this is mainly used for LNG exports (57 mtpa committed and planned). NSW would need 220 PJ by 2025 equivalent to 4 mtpa. Details are in this post:

9/5/2012 Queensland plans to export more than 10 times the gas NSW needs (part 3)

<http://crudeoilpeak.info/queensland-plans-to-export-more-than-10-times-the-gas-nsw-needs-part-3>

The expected shortages are the result of a lack of a long-term domgas policy in Queensland and the failure of the federal government to coordinate the States. This episode is a 1st order energy planning blunder and must be exposed so that this does not happen again.

Moreover, the LNG exports will not reduce CO2 emissions because the Federal government failed to include clauses in supply contracts stipulating that in the destination country the energy equivalent amount of coal is to be left in the ground for good. More details are here:

7/11/2011 Why coal seam gas will not reduce CO2 emissions

<http://crudeoilpeak.info/why-coal-seam-gas-will-not-reduce-co2-emissions>

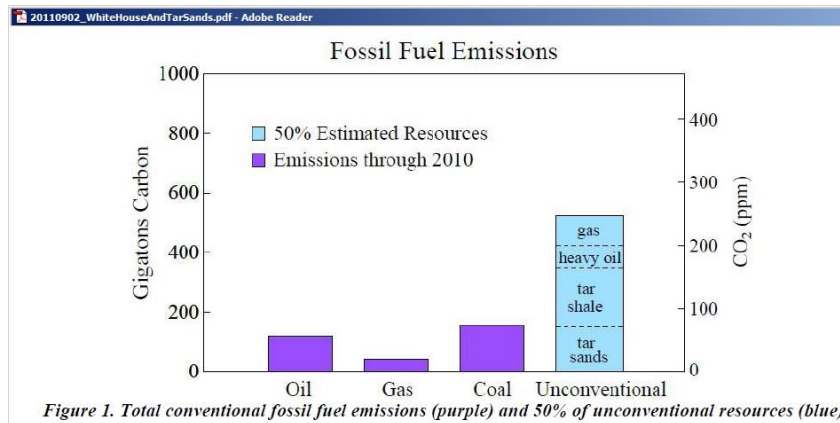
So the end result of all this is that for a meagre amount of royalties (which the States spend on yet more fossil fuel projects) and for the benefit of mainly foreign companies, the gas is depleted, not available for domestic companies, the environment and agriculture are damaged from 1000s of wells and CO2 in the atmosphere is increased.

(11) Quote: *While resources in the ground are sufficient to meet both export and domestic demand, the timeline for proving up and extracting these resources is critical.*

Comment: Sufficient for which period? And will these resources economically and affordably be turned into reserves? Where in all these assertions is the future demand for gas as transport fuel?

(12) Quote: *There is also the potential to develop Australia's onshore tight and shale gas reserves. Preliminary work on these resources is underway, mostly in Western Australia, Queensland, South Australia and the Northern Territory, with continued exploration and developing technology projected to unlock further resources.*

Comment: Where is the CO2 absorption capacity for these unconventional shale resources (not reserves)?



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

NASA climatologist James Hansen calculated that if all unconventional oil and gas were burned, CO₂ concentration in the atmosphere would go up by an additional 250 ppm which will guarantee planet Earth is cooked to such an extent that large areas will become uninhabitable and all ports be flooded from sea level rises.

Australia's solar energy resources and production

The Australian continent has the highest solar radiation per square metre of any continent and consequently some of the best solar energy resource in the world. The regions with the highest solar radiation are the desert regions in the northwest and centre of the continent.

Australia receives an average of 58 million PJ of solar radiation per year, approximately 10 000 times larger than its total energy consumption

<http://www.ga.gov.au/energy/other-renewable-energy-resources/solar-energy.html>

It is incomprehensible that Australia's continued fossil fuel addiction makes the government so blind not to see our solar energy.

(13) Quote: *The Government seeks comment on ways to increase new gas sources to meet demand and measures to enhance transparency in market conditions.* (p 13)

Comment: Just increasing supplies does not solve the underlying problems. First, a moratorium on future LNG projects including planned extensions should be put in place. Australian companies using gas should get priority. Gas has to be set aside for peaking power plants which is important when replacing coal fired power plants. Households have to save (e.g. by prohibiting gas for warm water heaters which should be replaced by solar hot water systems which have to be compulsory for new housing). Immigration has to be reduced to limit demand growth for gas.

(14) Quote: *Risks and trends in the security of the electricity, gas and liquid fuel supply chains are collectively analysed at a national level through the regular publication of the National Energy Security Assessment, with the next due to be published in late 2014.* (p 13)

Question: Is NESAs part of the EWP consultation process? If not, will there be a separate public consultation process for the updated NESAs or will that be a consultant's report without any public input

(15) Quote: *The Government seeks comment on possible approaches and impacts of review of tariff structures including fixed network costs, further time-of-use based electricity tariffs and the use of smart meters.* (p 16)

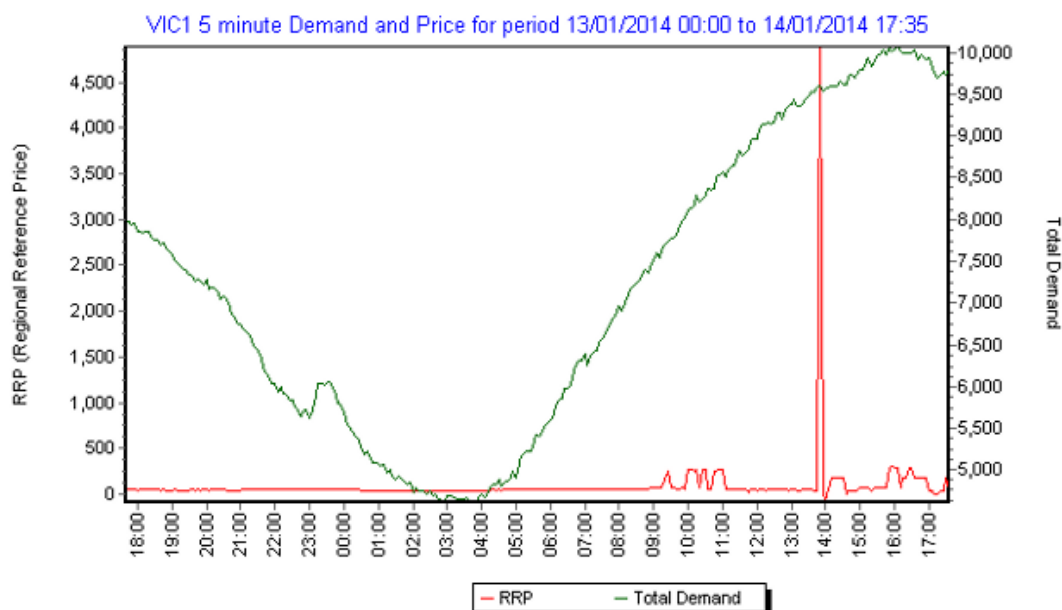
Comment: The climate change denial of State and Federal governments (approving more coal mines and terminals) will ensure a maximum contribution to this problem:

Victorian Premier warns 100,000 premises may lose power during extreme heatwave

16/1/2014

On Tuesday in 40 degree plus heat with demand peaking at at 9,591MW, Kerry Burke, an energy market analyst tweeted in the early afternoon that "Loy Yang A unit 3, one of Australia's largest brown coal units just tripped as VIC demand soars. 431MW gone in 5min. Intermittent." But the grid was able to handle this outage through use of 420 MW spare hydro electricity in the ten minutes following the trip, Burke explained.

Current Dispatch Interval Price and Demand Graph: VIC



<http://climateactionmoreland.org/2014/01/16/victorian-premier-warns-100000-premises-may-lose-power-during-extreme-heatwave/>

(16) Quote: *The Government is seeking comment on areas where further privatisation of government-owned assets would contribute to more effective regulatory frameworks and better outcomes for consumers.* (p 17)

Question: What is the value of coal fired power plants? Maybe that will help:

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"

20 seconds clip:

<http://www.youtube.com/watch?v=qMD2sdolPeg>

Full lecture:

<http://www.youtube.com/watch?v=5E5EdbiB4HU>

From here:

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

(17) Quote: *The current phase of the commodity price cycle, with declining prices of most commodities over the past 12–18 months, is presenting challenges for investment in energy and resources projects.....Higher costs are becoming harder to absorb, even with the deployment of new technology. Cost reductions and consolidation is occurring with a number of older high cost operations ceasing or scaling back production.* (p 19)

Comment: The combination of weak prices on the demand side and rising cost on the supply side is exactly what peak oil and limits to growth are all about. What we have is not a classical economic cycle. The government needs to acknowledge this.

(18) Quote: *The Government seeks comment on commercial or market initiatives that could enhance growth and investment in the energy and resources sectors.* (p 20)

Comment: Growth of the fossil fuel based energy industry will contribute to astronomical damages to our natural system including agriculture. It is not an objective we can wish for.

(19) Quote: *The Government seeks comment on areas where approvals processes could be further streamlined while maintaining proper environmental safeguards.* (p 20)

Comment: The proper environmental (global warming) safeguard is to introduce the human species as endangered species in the Environment Protection and Biodiversity Conservation Act 1999. NASA climatologist James Hansen:

One implication is that if we should "succeed" in digging up and burning all fossil fuels, some parts of the planet would become literally uninhabitable, with some time in the year having wet bulb temperature exceeding 35°C. At such temperatures, for reasons of physiology and physics, humans cannot survive, because even under ideal conditions of rest and ventilation, it is physically impossible for the environment to carry away the 100 W of metabolic heat that a human body generates when it is at rest. Thus even a person lying quietly naked in hurricane force winds would be unable to survive. Temperatures even several degrees below this extreme limit would be sufficient to make a region practically uninhabitable for living and working.

http://www.columbia.edu/~jeh1/mailings/2013/20130415_Exaggerations.pdf

(20) Quote: *The Government seeks comment on the impacts of variable land access policy and ways the community could be better informed and engaged on development in the energy sector.* (p 21)

Comment: “Better information and engagement” will not solve environmental problems associated with e.g. fracking and the CO2 emissions problem. Land access should not be forced on land-owners.

(21) Quote: *Around two thirds of our energy production is exported, which in addition to boosting export revenue, further enhances Australia’s prosperity by creating new export markets for our services sector.* (p 23)

Comment: Where are the economic calculations which prove that energy exports increase Australia’s prosperity? Nature returns every coal ship, every oil tanker and every LNG ship as a fire-bomb on our forests, farms and now also suburbs. Set aside CO2 emissions, using Australia’s energy locally to manufacture energy-intensive products for export would create more jobs than the quarry strategy.

And that raises the question: prosperity of whom? The federal government which has \$400 billion debt and a budget in deficit? The fossil fuel industry? Banks and financial consultants? Overseas consumers and shipbuilders? Australian workers? Australian managers?

Recommendation: The EWP should present a model calculation who benefits when \$1 is invested in the fossil fuel industry.

(22) Quote: *While Australia is value-adding to its gas resources by conversion to LNG for export....*(p 23)

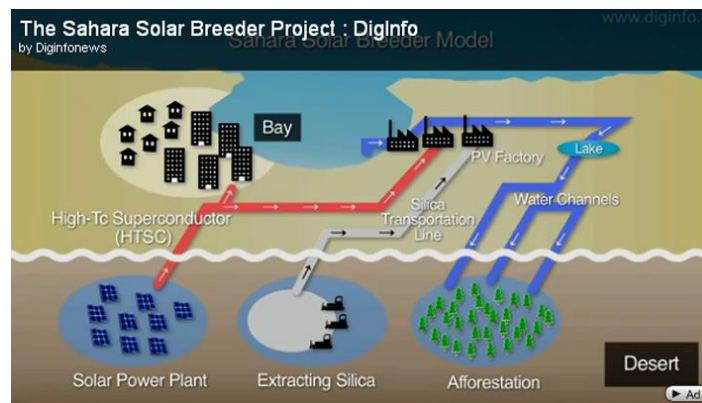
Comment: Where is the calculation for this? Energy is lost in liquefaction so this is a very inefficient use of a precious resource. The literature quotes – for the entire process - anything between 5 and 15% losses, dependent on technology and the use of excess heat. A genuine value adding would be alumina production, for example. But just there the government has completely failed to supply the Gove refinery with gas.

Recommendation: The EWP should present plans how the rest of Australia’s gas is used in Australia itself, for generations to come, not just 20 years.

(23) Quote: *The Government seeks comment on ways to grow the export of value-added energy products and services.* (p 24)

Recommendation: Australia must use whatever fossil fuel reserves can still be burned (not much) to manufacture renewable energy systems.

Otherwise we may come into the situation that solar breeding is required, a slow process.



http://throughthesandglass.typepad.com/through_the_sandglass/2011/01/self-breeding-solar-power.html

(24) Quote: *The Government seeks comment on ways it can strengthen support for access to export markets.* (p 24)

Comment: It is possible that nuclear power will experience a revival in Europe and Japan as global warming will get worse and worse. The biggest problem there is disposal of nuclear waste. Export of Australian uranium could be made more attractive by offering disposal sites in Australian desert locations.

(25) Quote: *The Government seeks comment on ways to support business to maximise export opportunities for Australia's energy commodities, products, technologies and services including the value of Australia's participation in the variety of international forums.* (p 25)

Comment: In relation to services: Australia signed an APEC agreement to reduce energy intensities.

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

Recommendation: The EWP should show ways how this energy intensity reduction can be done and export its expertise as service.

(26) Quote: The rapid shift from construction to production will increase demand for specialist operators including roles that require particular experience. It will be challenging to source many of these experienced workers domestically, which could impact on productivity. (p 27)

Comment: This raises the question why large scale projects exceeding the capacities and capabilities of the local workforce were approved in the first place. Obviously no proper manpower planning and training was done. The resource boom mentality allowed unsustainable projects. The future problem will be that there will not be enough skilled staff to build up renewable energy systems.

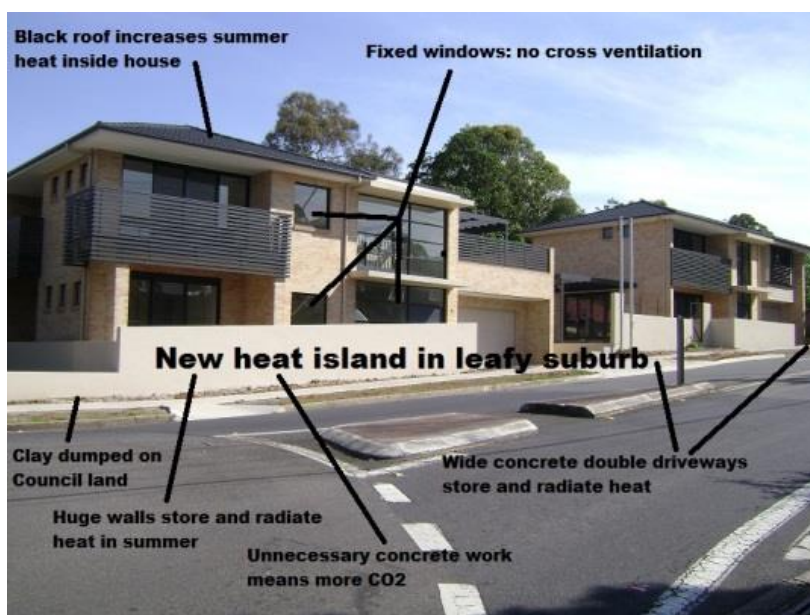
(27) Quote: In 2009, the Clean Energy Council (CEC) carried out a survey of renewable energy training. Key findings of the CEC survey included too few university and TAFE courses covering renewable energy technologies, the need for flexible delivery of accredited courses that could be used toward a diploma or Masters degree, a lack of management training for technical staff and a need for more qualified trainers. (p 29)

Comment: This is the result of Australia's continuing fossil fuel addiction. There are not enough renewable energy projects to create a growing labour market even for existing graduates with a renewable energy engineering degree. Now that the government wants to abolish carbon trading and the Clean Energy Finance Corporation it has actually killed any future job prospects in this industry. Well done!

(28) Quote: *The Government seeks comment on specific long-term training and skills development needs for alternative transport fuels, renewable energy, energy management and other clean energy industries.* (p 29)

Recommendation: This requires a societal re-orientation which the government does not want to embark on. As long as governments and the media are in denial mode over peak oil and global warming how will the public and the young generation in particular develop motivation to support and participate in new initiatives in these professional fields? The whole business-as-usual approach of government – of which this issues paper is proof - is not conducive to innovation in sustainable energy solutions. Unless the systematic replacement of coal fired power plants by renewable energies and the dismantling of the coal industry is made a priority national task there is no chance that the educational system will deliver the above outcomes.

(29) Quote: *Minimum building standards also apply to residential buildings where space heating, hot water systems and lighting are the three largest energy uses.* (p 32)



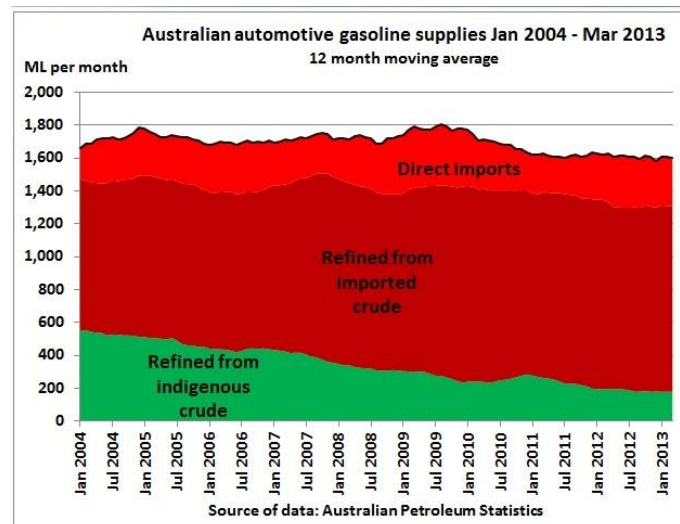
Comment: NSW BASIX is totally inadequate in this regard. It allows black roof tiles and driveways. There is no mandatory requirement for solar hot water heaters and PV panels. The brick veneer design is inherently inefficient (insulation must always be OUTSIDE not inside between the studs of the wooden frame). These 2 houses are an example of energy inefficiency. One

unit is now on sale for \$1.4 million. If the market accepts such a price for such a poor design then this shows how energy-illiterate real estate agents and the general public are.

Quote: *In transport, fuel quality standards, and fuel economy disclosure help to improve efficiency* (p 32)

Comment: Since there are no mandatory standards, this has not helped the Australian car industry.

9/1/2014 GM Holden did not prepare for peak oil - since 1998 (Part 1: The Howard years)
<http://crudeoilpeak.info/gm-holden-did-not-prepare-for-peak-oil-since-1998>



In almost 10 years, petrol consumption has hardly declined

(30) Quote: *The Government seeks comment on measures to increase energy use efficiency in the transport sector.* (p 33)

Comment: the magnitude of the problem is not acknowledged. The actual question should be: which projects are needed to neutralize the impact of a 4-fold increase in oil prices over the last 10 years? Definitely not more road tunnels and toll-ways:

12/11/2013

Sydney's Westconnex road tunnel proposal based on too many untested assumptions
<http://crudeoilpeak.info/sydneys-westconnex-road-tunnel-proposal-based-on-too-many-untested-assumptions>

5/9/2013

Melbourne's East West Link tunnel proposal has low benefit cost ratio and high oil price risk
<http://crudeoilpeak.info/melbournes-east-west-link-tunnel-proposal-has-low-benefit-cost-ratio-and-high-oil-price-risk>

(31) Quote: *The Government seeks comment on ways to encourage a lower emissions energy supply that avoids market distortion or causes increased energy prices.* (p 35)

Comment: First, the existing market distortion in the form of fossil fuel subsidies must be removed like fuel tax credits, reduced excise for aviation fuels, accelerated depreciation for

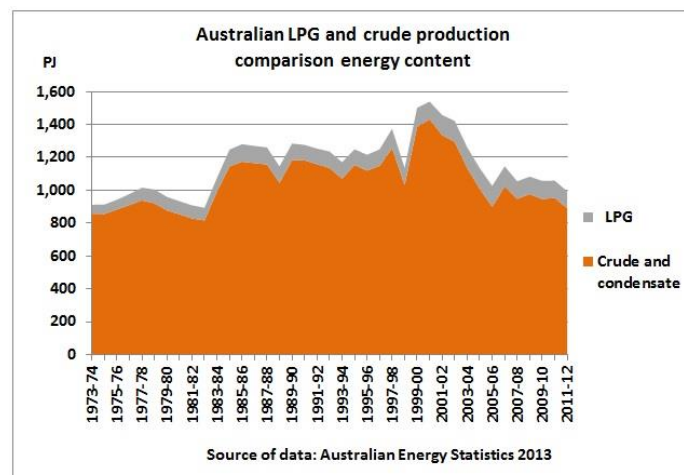
fossil fuel assets, zero tariffs for aircraft, tax concession for private use of company cars and car parking, other fringe benefit exemptions and no fuel excise indexation

(32) Quote: *The Government seeks comment on the need to review existing network tariff structures in the face of rapidly growing deployment of grid-backed-up distributed energy systems, to ensure proper distribution of costs.* (p 36)

Recommendation: The government has to regulate feed-in tariffs for solar PV systems on roof tops. For the consumer the best solution is that feed-in tariffs equal the price paid for power imports. It is very important to promote the installation of PV systems as these power air-conditioners during heat waves thus reducing the need for expensive peaking plants.

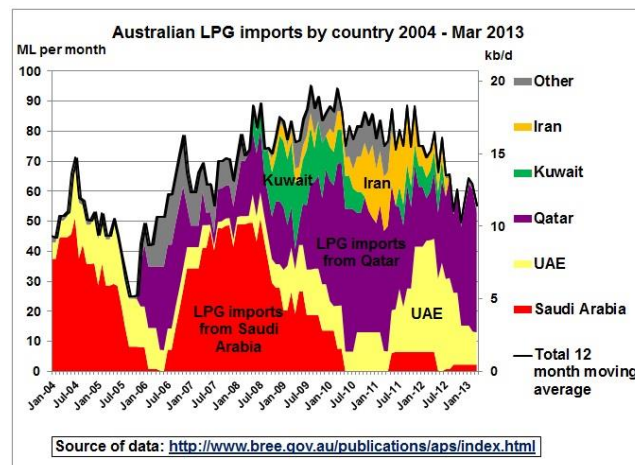
(33) Quote: *The most common alternative fuel is LPG, used mostly in passenger cars with an established and growing refuelling infrastructure.The Government seeks comment on any barriers to increased uptake of LPG in private and commercial vehicles and CNG and LNG in the heavy vehicle fleet.* (p 38)

Comment: LPG production in Australia is only 10% of oil production



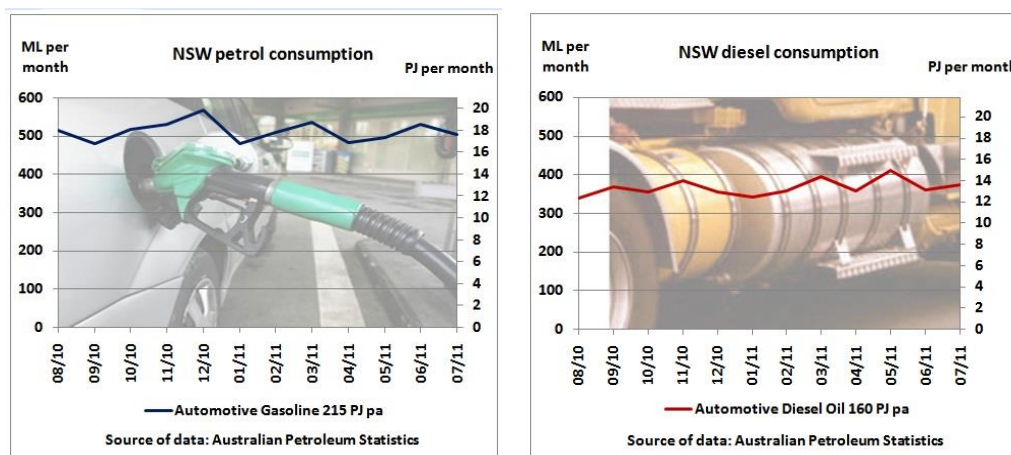
From: <http://crudeoilpeak.info/lpg>

LPG is also imported:



Conversion to LPG cars will not solve the peak oil problem.

The only viable alternative fuel is natural gas (CNG and LNG) but as already mentioned above, Australian gas is exported in quantities required to replace all oil use. For NSW:



That's 160 PJ pa for diesel and 215 PJ pa for petrol, in total the equivalent of 1.7 LNG export trains @ 4 mt pa. More details are here:

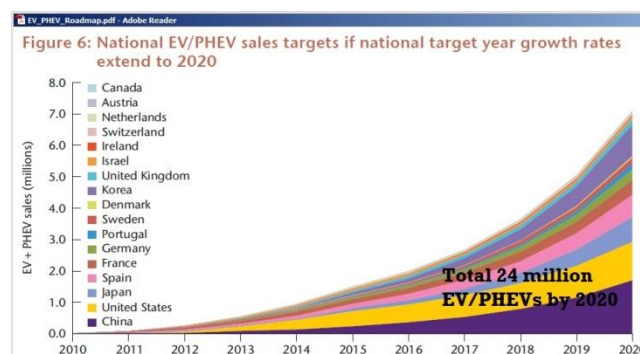
13/10/2011 NSW gas as transport fuel. Where are the plans?

<http://crudeoilpeak.info/nsw-gas-as-transport-fuel-where-are-the-plans>

It is now basically too late as all export contracts have been signed. The public will get a bad surprise when the time comes.

(34) Quote: *However the widespread adoption of fully electric vehicles is presently very limited due to high upfront capital costs, battery storage constraints, lack of vehicle recharging infrastructure, electricity grid integration challenges and capacity constraints and consumer performance uncertainty.Biofuels are expected to play a role in Australia's future fuel mix, particularly for light passenger cars.The Government seeks comment on any barriers to the increased uptake of electric vehicles and advanced biofuels.* (p 38)

Comment: The IEA has compiled EV plans from various countries:

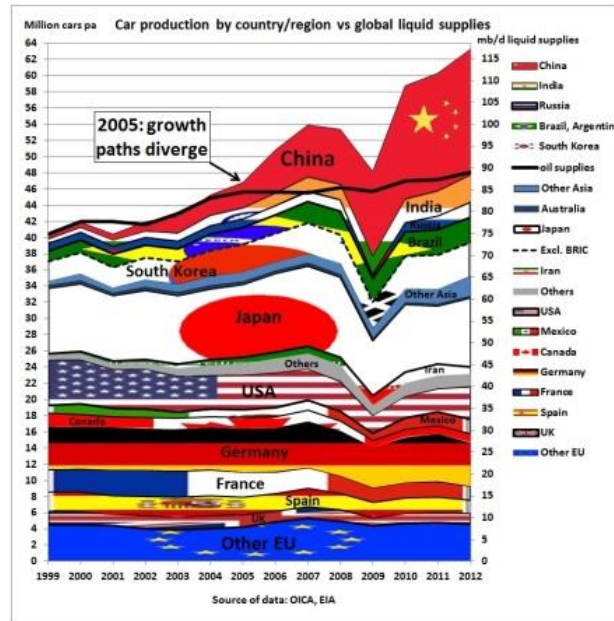


At a global scale, 24 million EVs will make no difference. More details can be found in these articles:

31/8/2011 1 billion vehicles in year #7 of peak oil

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

27 May 2013 World car production grows 3 times faster than global oil supplies



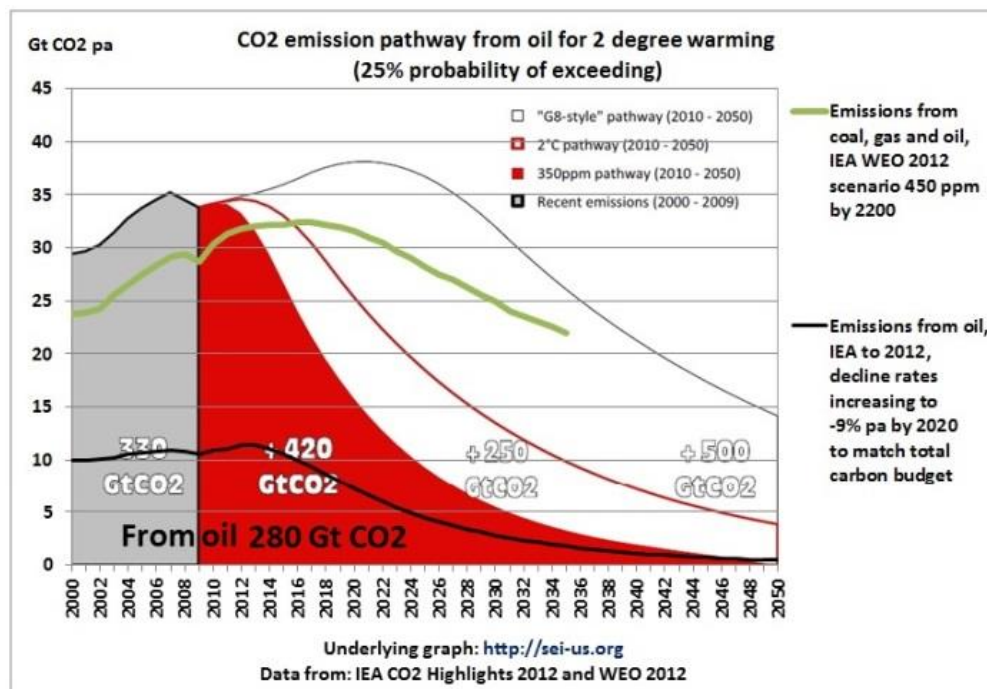
<http://crudeoilpeak.info/world-car-production-grows-3-times-faster-than-global-oil-supplies>

30/1/2012 Ethanol blended E10 would take 14 years to replace ULP in Australia

<http://crudeoilpeak.info/ethanol-blended-e10-would-take-14-years-to-replace-ulp-in-australia>

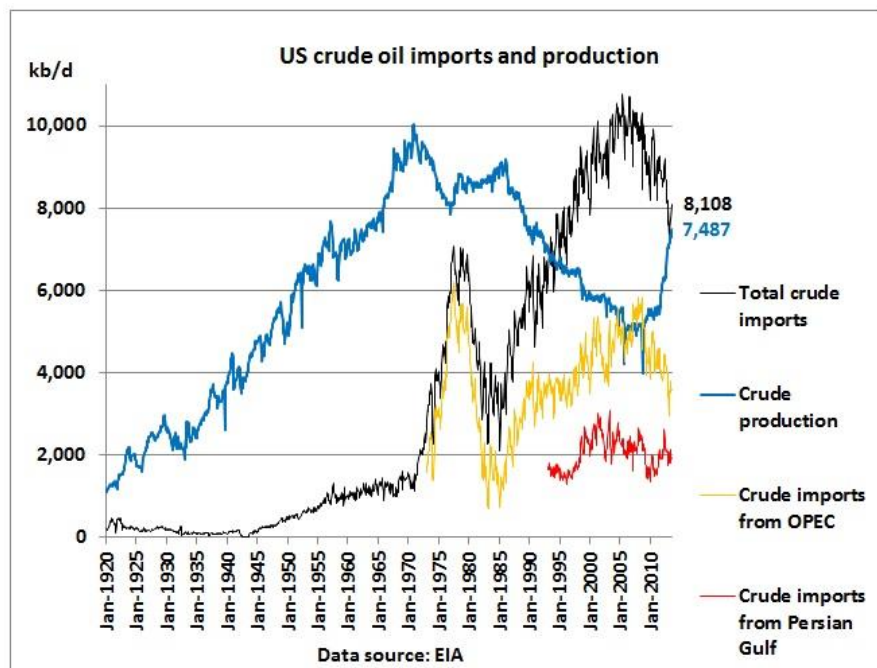
It should also be clear that we cannot even burn all the oil there is:

16/5/2013 Half of oil burnable in 2000-2050 to keep us within 2 degrees warming has been used up as we hit 400 ppm



<http://crudeoilpeak.info/half-of-oil-burnable-in-2000-2050-to-keep-us-within-2-degrees-warming-has-been-used-up-as-we-hit-400-ppm>

The main barrier to the uptake of EVs and alternative fuels is the misinformation by governments and the media on the true oil supply situation. News about an (assumed) energy independence of the US has brought the public into sleep mode.



The US now imports around 8 mb/d of crude oil. If the EIA's projections are correct that shale oil can be increased by another 2.5 mb/d in the 2020s, there would still be a crude oil import requirement of 5.5 mb/d. More details can be found in this article:

29/10/2013 US will always remain crude oil importer

<http://crudeoilpeak.info/us-will-always-remain-crude-oil-importer>

Recommendation: The first step in all efforts to get away from oil to other energy sources and electric transport systems is a proper information of the public on peak oil and global warming.



<http://www.transperth.wa.gov.au/>

Missing issues:

(1) Peak oil

As already mentioned, there is no word on peak oil in the issues paper. The previous government had a good try with its BITRE 117 report which it did not dare to publish. Senator Kim Carr refused to table the report and the peer review responses it received before the Senate. More details are here:

24/2/2012

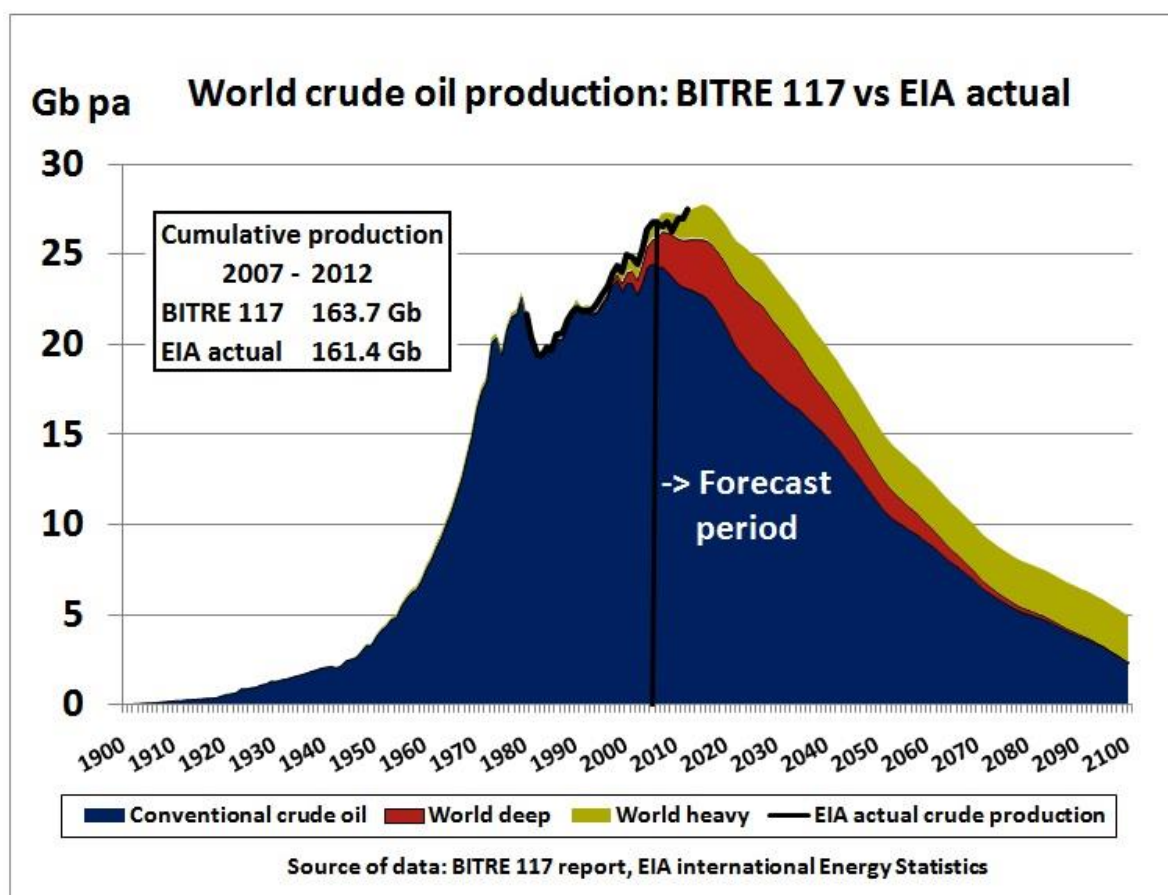
Australian Government kicks own goals in Senate peak oil debate (peaky leaks part 3)

<http://crudeoilpeak.info/australian-government-kicks-own-goals-in-senate-peak-oil-debate-peaky-leaks-part-3>

The following article compares actual production with the BITRE estimate of 2009, country by country. As usual with estimates of large systems, there is a lot of plus and minus but the total comes pretty close. What has not been included in the BITRE report – which is based on data available up to 2006 – is US shale oil

25/2/2013

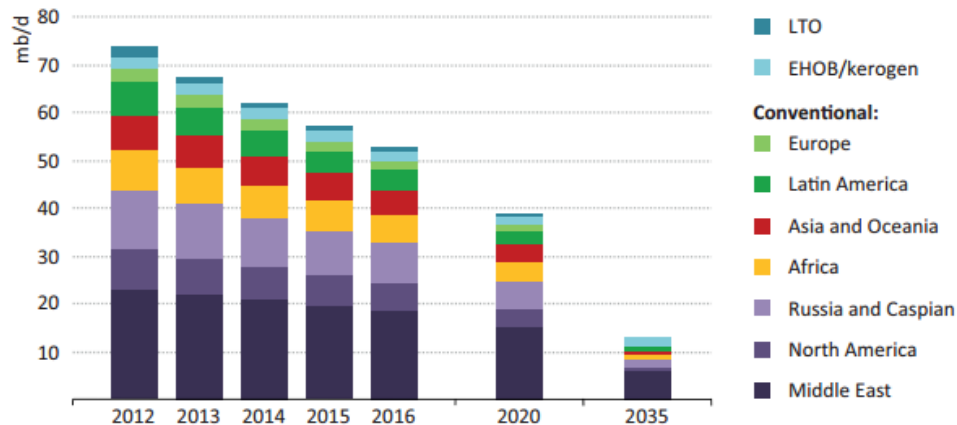
How good was the Australian peak oil report BITRE 117? (peaky leaks part 4)



<http://crudeoilpeak.info/how-good-was-the-australian-peak-oil-report-bitre-117>

The IEA WEO 2013 includes following graph showing decline in currently producing fields.

Figure 14.6 ▶ Production that would be observed from all currently producing fields in the absence of further investment (excluding NGLs)



Note: EHOB = extra-heavy oil and bitumen.

This is similar to Fig 3.16 of the WEO 2011 shown under issue (8). The question is now: how is the gap to be filled?

Recommendation: Because Australia has become so much dependent on crude oil and fuel imports, the Energy White Paper needs to do its own peak oil research instead of relying on partially embellished IEA World Energy Outlooks.

(2) Australian oil and gas reserves

Recommendation: Geoscience Australia needs to update its latest OGRA report which is from 2010

<http://www.ga.gov.au/products-services/publications/oil-gas-resources-australia/2010/reserves/table-3.html>

Oil, condensate and LPG reserves (1P, 2P and 3P) have to shown separately including the likely production cost similar to Fig 13.17 in IEA WEO 2013. Production projections should be done for the next 10-15 years.

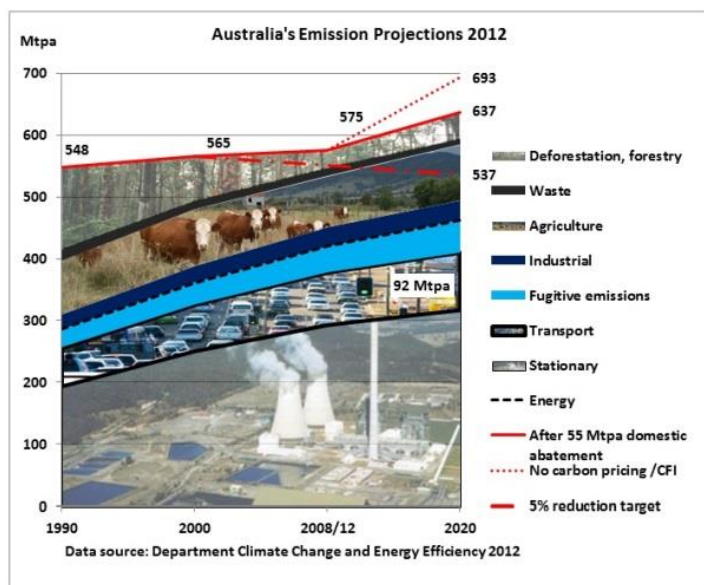
(3) Global warming and CO2 absorption capacity of atmosphere

Although the issues paper confirms a commitment to reduce Australian emissions by 5% by 2020 there is no item in the issues paper which would indicate that calculation will be made how much of Australia's fossil fuel reserves can actually be burned within the given global carbon budget until 2050.

The proposed high-way and toll-way projects as listed in the "Coalition's Policy to Deliver the Infrastructure for the 21st Century"

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

are NOT in line with this 5% target. More details are in the following article:



18/11/2013

Abbott's roads for the 21st century will not even reduce CO2 emissions by 5% in 2020
<http://crudeoilpeak.info/abbotts-roads-for-the-21st-century-will-not-even-reduce-co2-emissions-by-5-in-2020>

(4) Compensation claims from global warming damage

It is naïve to assume that production and burning of fossil fuels can continue without punishment. Every coal ship, oil ship and LNG ship generates future compensation claims from 3rd parties.

15/11/2013

Typhoon Haiyan: "We fear this will not be the last"

In 2008, our islands suffered the deluge brought by Typhoon Fengshen. In 2009, Typhoons Ketsana and Parma; followed by Megi in 2010; then, Nesat and Washi in 2011; Bopha in 2012, the costliest – and now Haiyan: we fear this will not be the last. Haiyan shows the worst possible outcome, but as it lashed our communities, affecting millions of innocent people, we may run out of our unique Filipino resiliency. We thank the world for their kindness but we expect developed countries to take ambitious steps to prevent more Haiyans. **We have suffered enough.**

A lawyer by profession, Atty. Christina Barroga, is exploring how to raise the recent event to the International Criminal Court.

<http://climaterealityproject.org/2013/11/15/typhoon-haiyan-we-fear-this-will-not-be-the-last/>

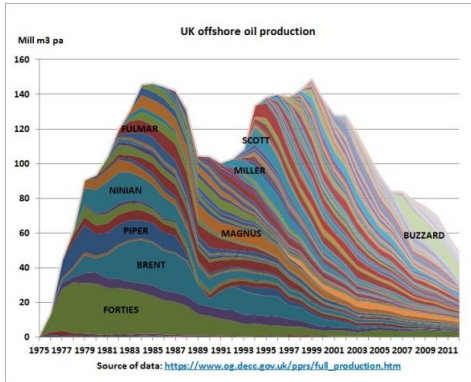
More details are here:

<http://crudeoilpeak.info/compensation-claims-from-global-warming-damage>

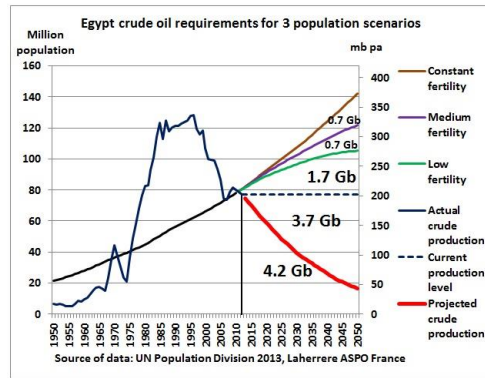
Therefore, before getting too excited about Australia's "abundant" coal reserves the EWP needs to explore the legal consequences of coal production – both in Australia and internationally. A model calculation could estimate the compensation claims due for 1 million ton of coal, for example.

Prepared by Matt Mushalik mushalik@tpg.com.au 7/2/2014

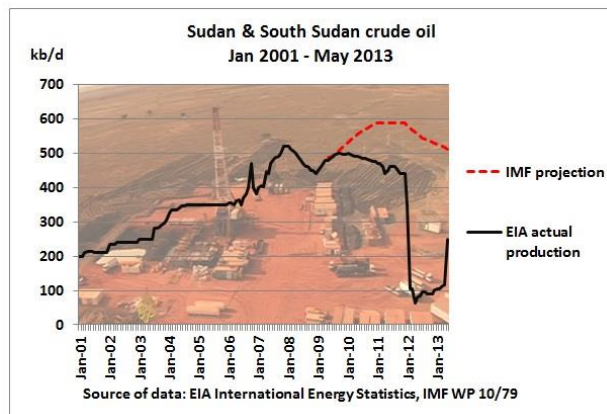
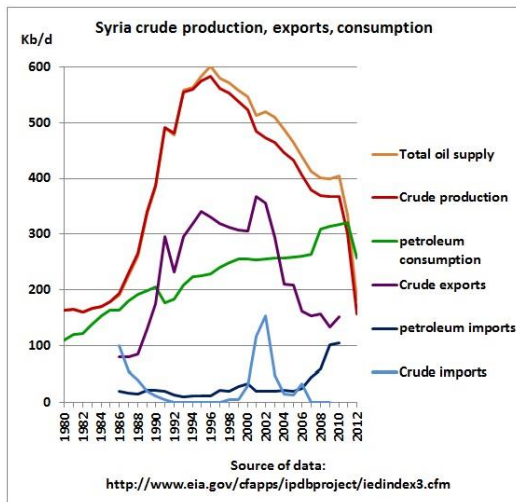
Appendix A: Peak oil examples



UK is in plain descent

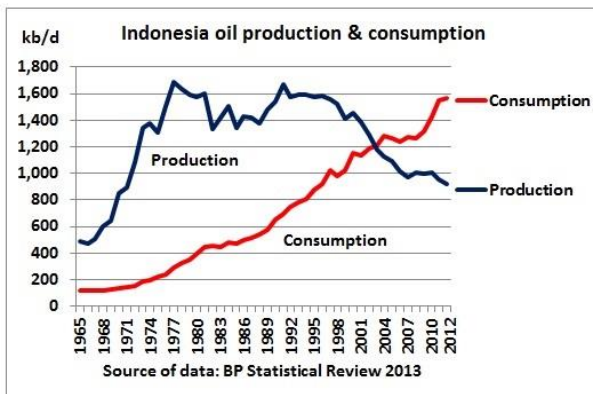


CCASG will need to supply discounted oil to Egypt at a cost to Asia.



When oil peaks, fights over oil intensify. Production declines or collapses.

When oil peaks, dictators have problems

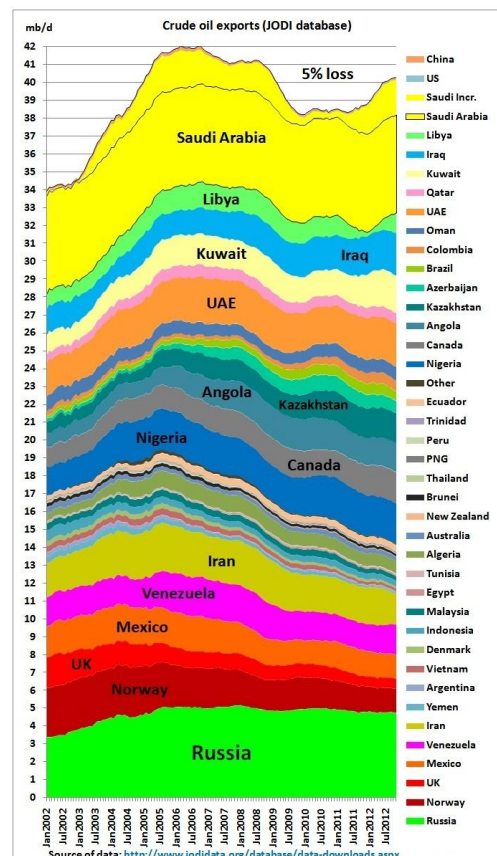


When consumption is higher than production, subsidies for imports become unaffordable

Peak exports>>

Extracts from a slide show for Macquarie Uni in October 2013

<http://crudeoilpeak.info/wp-content/uploads/2013/11/Slide-Show-For-Macquarie-Uni-Oct-2013-final-version.pptx>



Appendix B: Global warming



<http://www.stormsofmygrandchildren.com/>

By NASA climatologist James Hansen

<http://www.columbia.edu/~jeh1/>



<http://www.theguardian.com/environment/2014/feb/05/uk-storms-live-updates>

2006

"The effects of a rising sea level would not occur gradually, but rather they would be felt mainly at the time of storms. Thus for practical purposes sea level rise being spread over one or two centuries would be difficult to deal with. It would imply the likelihood of a need to continually rebuild above a transient coastline"

http://www.columbia.edu/~jeh1/2006/CaseForCalifornia_20060630.pdf

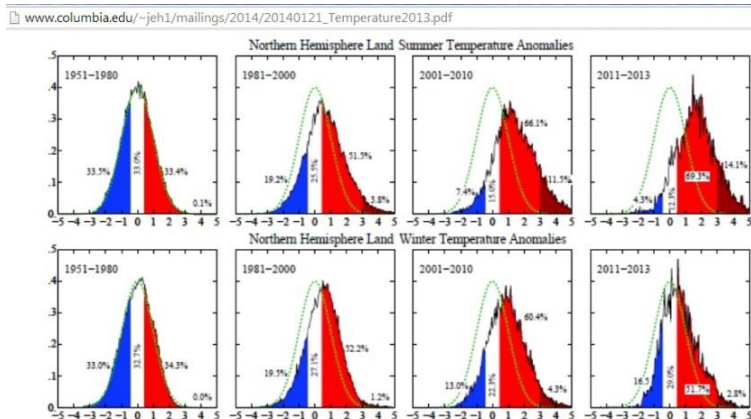


Fig. 9. Frequency of occurrence of local Jun-Jul-Aug (top row) and Dec-Jan-Feb (bottom) temperature anomalies for Northern Hemisphere land areas in units of the local standard deviation (horizontal axis).

Summary. Global surface temperature in 2013 was $+0.6^{\circ}\text{C}$ ($\sim 1.1^{\circ}\text{F}$) warmer than the 1951-1980 base period average, thus the seventh warmest year in the GISS analysis. The rate of global warming is slower in the past decade than in the prior three decades. Slower growth of net climate forcings and cooling in the tropical Pacific Ocean both contribute to the slower

warming rate, with the latter probably the more important effect. The tropical Pacific cooling is probably unforced variability, at least in large part. The trend toward an increased frequency of extreme hot summer anomalies over land areas has continued despite the Pacific Ocean cooling. The "bell curves" for observed temperature anomalies show that, because of larger unforced variability in winter, it is more difficult in winter than in summer to recognize the effect of global warming on the occurrence of extreme warm or cold seasons. It appears that there is substantial likelihood of an El Niño beginning in 2014, and as a result a probable record global temperature in 2014 or 2015.

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