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

Epping - Chatswood Tunnel Conversion

Reduction of operational flexibility

Submission by Matt Mushalik 17/11/2014 relating to:

http://nwrail.transport.nsw.gov.au/The-Project/Epping-to-Chatswood/Review-of-Environmental-Factors-and-Temporary-Tran

Summary:

The objective of physical segregation of the existing Epping-Chatswood rail tunnel is an unnecessary self-mutilation because it is **reducing operational flexibility of the Northern part of Sydney's rail network.** It is bad enough that tunnel boring machines are drilling right now a new tunnel Epping – Rouse Hill which cannot accommodate double deckers. It is also politically wrong because if a private company is allowed to use publicly financed infrastructure it has to adapt its system to that existing infrastructure and not the other way around.

What's worse, NSW tax payers have now to pay for the removal of infrastructure which they financed just 5 years ago. One may ask in which interest the government is acting, for a private company or the NSW taxpayers. This conversion debacle comes on top of the risk of building an expensive rail tunnel in a low density area of Sydney without having a network function with Western rail lines. The original network objective of an East-West rail tunnel starting in Chatswood was to create a relief for the congested Strathfield – CBD lines. Then Transport Minister Costa cancelled the Epping- Parramatta link. His legacy continues to this very day.

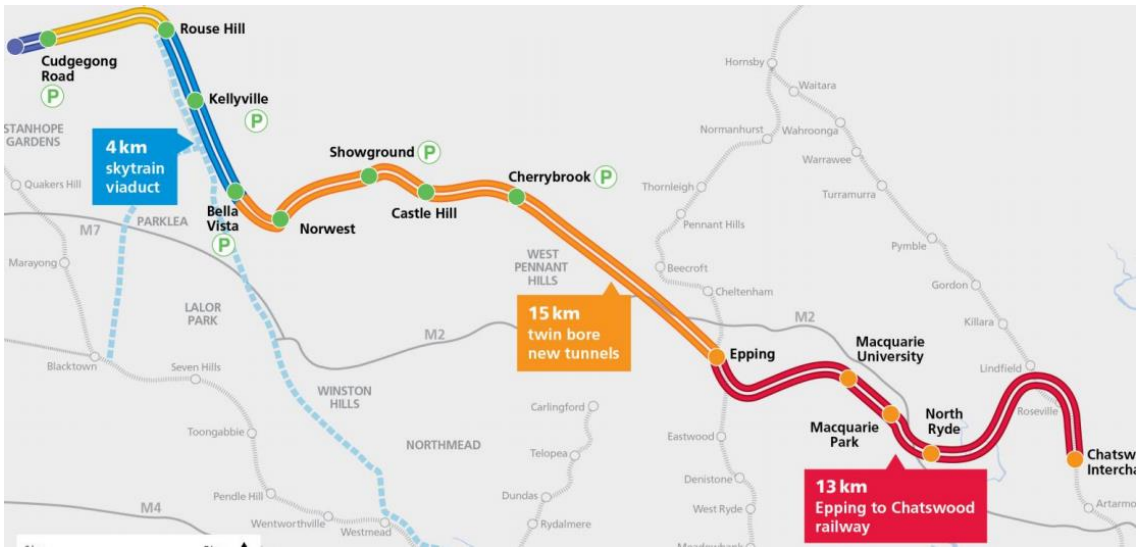

Fig 1: Epping – Rous Hill is a branch line without network function for Western lines

Likely outcomes:

Entry in Sydney's history book in the chapter of botched rail planning. Financial failure of private operator. Public backlash. Broken careers of senior bureaucrats and politicians.

Recommendation:

Since all (wrong) decisions have been made: The Transport Minister and all consultants who worked on this EIS should get a bonus of 73 min free, but compulsory daily bus travel between Epping and Chatswood return for the duration of 7 months.

Comments on works proposed

This is the summary of works proposed:

(1) Removal of existing Epping to Chatswood railway track connections at Epping and Chatswood to achieve operational segregation of the Epping to Chatswood railway from the Sydney Trains network
(2) Modification to the existing track network to the south of Chatswood station to allow for connection to SRT.
(3) A range of building modifications within the existing stations (Chatswood, North Ryde, Macquarie University, Macquarie Park and Epping) including:
(4) Modification to platform seating, signage and other infrastructure.
(5) Installation of platform safety screen doors.
(6) Modifications to station rooms, signage and customer information displays.
(7) Installation of air-control units within the station precincts at Epping, Macquarie University, Macquarie Park and North Ryde.
(8) Removal of equipment in the Epping to Chatswood railway corridor that is no longer required for the future operation of the Epping to Chatswood railway as part of the rapid transit network.
(9) Provision of new cable routes to accommodate rapid transit services and signalling systems.
(10) Modifications to systems including electrical, signalling, communications, fire and life safety, mechanical and fire systems. Modification to traction power supply.
(11) Implementation of the Epping to Chatswood Railway – Temporary Transport Plan
(12) Segregation of the existing Chatswood North substation, which currently services the Sydney Trains network, for the future operation of the NWRL.
http://nwrail.transport.nsw.gov.au/NorthWestRailLink/media/NWRL/Original/ECRL/REF/01_Epping-to-Chatswood-Railway_Review-of-Environmental-Factos_Part-A.pdf

Fig 2: Existing service In Epping – Chatswood tunnel (Common photo)

Comments on (1)

Operational flexibility sacrificed for the convenience of a private operator

The EIS is not very specific what work is actually meant here. Only after a clarification over the phone I was told:

(a) The existing Epping Chatswood tunnel will be connected to the new Rouse Hill tunnel via the stubs which were originally provided for the continuation of the Parramatta Link

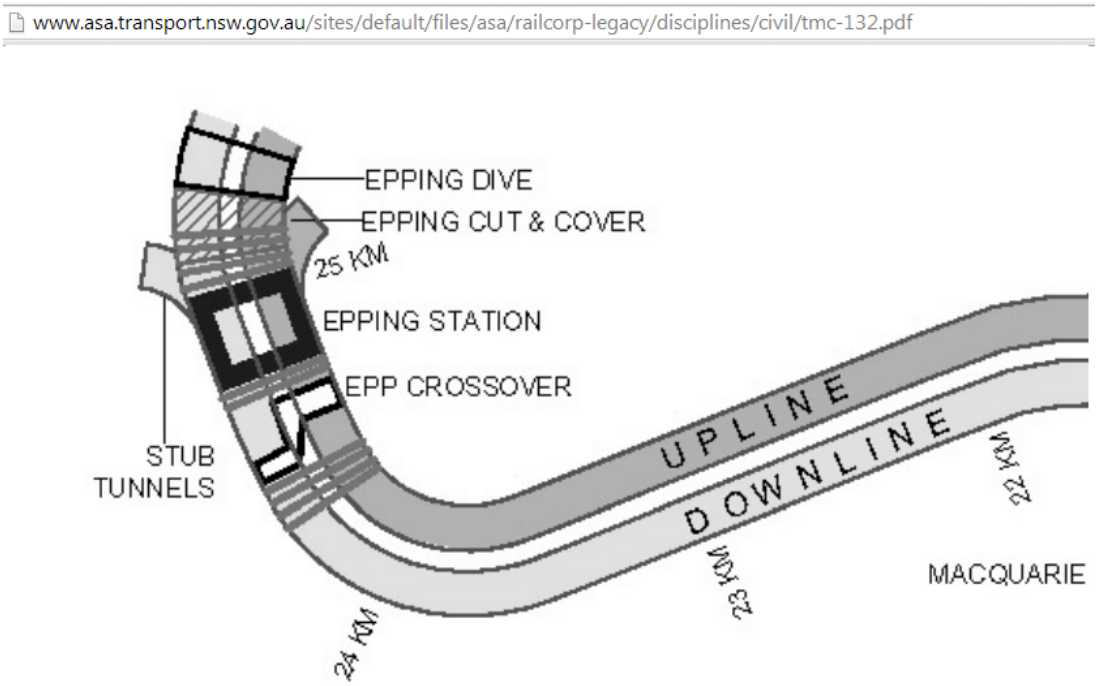

Fig 3: Location of dive structures and stub tunnels

http://www.asa.transport.nsw.gov.au/sites/default/files/asa/railcorp-legacy/disciplines/civil/tmc-132.pdf The EPP crossover should not be removed

(b) The points on the surface tracks which allow trains of the Strathfield – Hornsby line to enter/leave the Chatswood – Epping tunnel via the dive structures will be removed

(c.) The overhead wires in the dive structures will be disconnected but the dive structures will remain in place

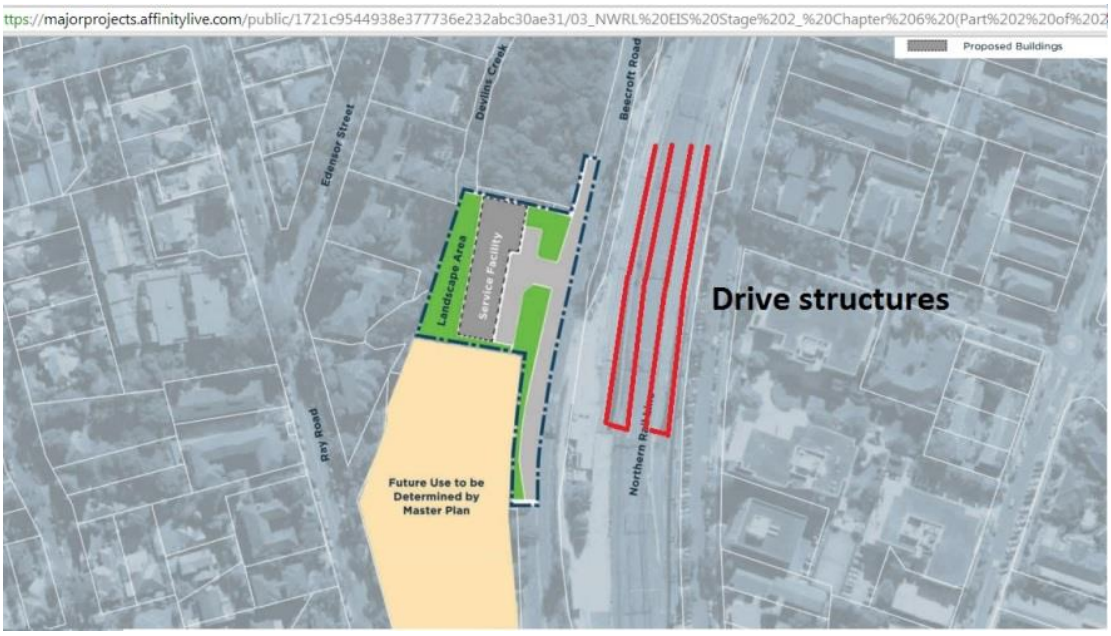

Fig 4: Areal view of dive structures at Epping station

(b) and (c) means a reduction in operational flexibility. This is unacceptable. Imagine the rail line Epping – Strathfield is interrupted by fallen trees in one of the ever increasing storms under global warming conditions. Then you lose the freedom to move double deckers through the Epping – Chatswood tunnel

(b) means that the tunnel cannot be accessed in emergencies by e.g. diesel powered rescue vehicles from Hornsby. Let us assume a breakdown of a train in the Chatswood – Epping tunnel. How will that be pulled out? The whole tunnel up to Currajong would have to be emptied to do that. The principle is that you have as many rail based access points to a tunnel as possible.

Provided the tracks in the dive structure remain in place (b) and (c) can be reversed at modest cost if that is later required. It is not clear why points have to be removed as there are very simple means to stop points from operating in an undesired direction.

If a private company is allowed to use a publicly funded piece of infrastructure it has to accept its existing physical properties.

In Berlin, for example, technically compatible trains from 2 different companies use the same track

Fig 5: ODEG (left) and DB (right) using the same track
http://commons.wikimedia.org/wiki/File:ODEG_445_103_Berlin_Hauptbahnhof.JPG

Comments on (5)

Screen door installation unnecessary

The installation of screen doors on platforms in the existing stations is **unnecessary work**. It is possible to run automatic metro trains without screen-doors. The speed of automatic trains when entering stations is not much different from that of driver operated trains because the mechanics of deceleration is given by the braking distance and the friction between wheels and rail. In modern metro trains this is already optimised anyway, together with regenerative braking. If safety were the real concern, then all stations on the Sydney network should get platform doors, designed for double deckers.

Fig 6: Automatic metro trains in Nuremburg without platform screens. This has allowed the transport authority to run driver operated trains in the same tunnel.

https://www.youtube.com/watch?v=c5JDBaqUZ_Y http://en.wikipedia.org/wiki/Nuremberg_U-Bahn

Comment on (8) and (10)

Why remove signalling for double deckers? You just disable it and re-commission it when this is necessary. Why is the Chatswood substation disconnected from the rest of the network? The larger the power supply system, the better regenerative braking will work.

Comments on (11)

7 month buses replacing trains: Open heart surgery

To close the Epping – Chatswood rail tunnel for 7 months in 2018 and replace it by buses is like open-heart surgery without a viable bypass machine. Add some complications like another credit crunch, oil crisis or similar and the patient dies. The following table is totally academic:

nwrail.transport.nsw.gov.au/NorthWestRailLink/media/NWRL/Original/ECRL/Temporary%20Transpost%20%20Plan/Temporary-Transport-Plan-Appendix-I.pdf

I1. Demand Scenario A

I1.1 Morning peak

		Distance (km)	Av speed (km/h)	Trip time(min)	Return trip time (min)	Min layover (round trip)	Total round trip time	Bus numbers	Headway assumption (min)
1	Epping to Chatswood	13.7	22	38.00	73.00	10	83	17	10
1	Chatswood to Epping	11.6	20	35.00					5
2	Epping to Chatswood	12.9	29	27.00	54.00	5	59	30	2
3	Beecroft to St Leonards	17.3	28	37.00	61.00	5	66	16	4
3	St Leonards to Macquarie University	9.8	25	24.00					
4	Eastwood to Macquarie Park	5.5	15	22.00	40.00	5	45	9	5
5	Gordon to Macquarie University	6.9	12	34.00	47.00	5	52	6	10
	Total including spares							**85**	

During the Christmas and July school holidays the morning peak bus fleet requirement drops from 85 to 61.

During the Easter school holidays the morning peak bus fleet requirement drops from 85 to 69.

During the October school holidays the morning peak bus fleet requirement drops from 85 to 73.

Fig 7: Bus time table of temporary transport plan

http://nwrail.transport.nsw.gov.au/NorthWestRailLink/media/NWRL/Original/ECRL/Temporary%20Transpost%20%20Plan/Temporary-Transport-Plan-Appendix-I.pdf

No one will take a bus taking 38 minutes for 12 kms. What you will get:

(1) more traffic on the M2, Transurban boss Scott Charlton will love to see his annual salary package finally exceeding 5 A$ million
(2) trains Hornsby – Epping – Strathfield – Central/CBD overcrowded – back to square 1

Passengers will decide

Passengers from the Central coast and Hornsby will be reluctant to change trains at Epping for Chatswood as it will be difficult to get seating in metro-type trains. Was a survey done to ask passengers, present and future?

Botched planning from the start

Rail plans in Sydney have been changed many times. The original EIS1 documents for the Epping – Rouse Hill link showed double deckers

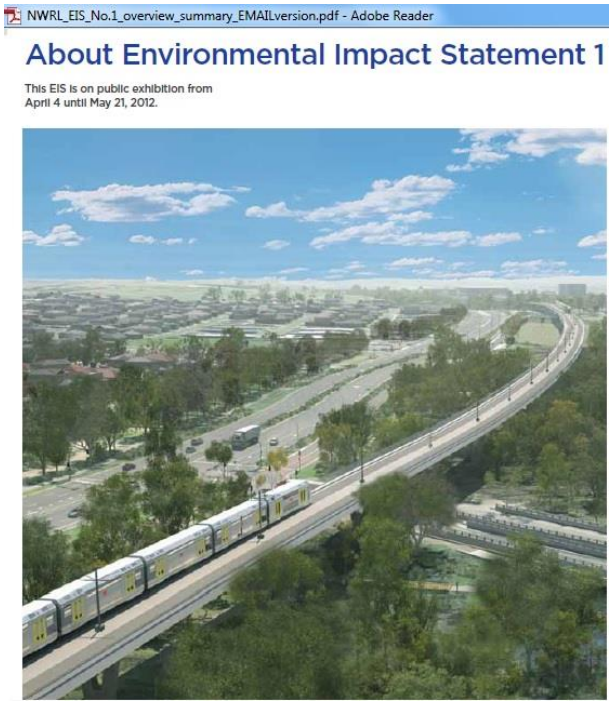

Fig 8: April-May 2012: double deckers planned

Watch this video:

North West Rail Link Artists Impression #1 Original Suburban Line proposal
https://www.youtube.com/watch?v=eGOog2Lprss

Fig 9 : This June 2012 planning document does **not** show platform doors and driverless trains

https://www.youtube.com/watch?v=Ql_mVwVkpEM

Obviously automatic trains and platform screen doors are an afterthought.

Fig 10: Oct 2012: Now it's single deckers.

Multiple lane roads suggest there is no intention to reduce existing (and future) car traffic

Tunnel diameter too small

Operational flexibility has already been reduced by building a tunnel which is too small in diameter to accommodate double deckers. All those who contributed to and are responsible for this planning disaster will enter history books on the wrong side of the ledger.

Contract signed before EIS

16/9/2014

The Epping to Chatswood rail line will be shut for months under the terms of a $3.7 billion contract signed this week for a private operator to run the adjoining north-west rail link to Rouse Hill.

Fairfax Media has previously reported industry speculation the line would need to be shut for between three months and six months to **allow for a new signalling system and screen doors** – features of the fully automated north-west rail link – to be installed. http://www.smh.com.au/nsw/epping-to-chatswood-line-to-be-shut-for-months-for-northwest-rail-link-20140916-10hpdt.html

The public has not been properly informed about the removal of points and overhead wiring of the dive structures.

Question: how can a contract be signed if the related EIS has not been approved? This procedural error may lead to court cases later down the track.

Fig 11: Screen doors may be a technical detail but it will prevent double deckers from using an existing tunnel paid for by the taxpayer

It is not clear which planning parameters have changed in 2 years.

What is needed of course is a seamless **integration**, not a segregation.

Worst case operational scenario

A freight train derails over the Parramatta bridge near Meadowbank and damages the bridge, requiring weeks of repairs.

In this case all double decker trains from Hornsby and the Central Coast would need to end in West Ryde/Meadowbank because they will not have the opportunity to use the Epping-Chatswood tunnel, There would be total chaos on Sydney's rail network.

NWRL flawed in principle

As I have pointed out in my EIS 2 submission the NWRL is flawed in principle for following reasons

(1) An expensive rail tunnel is not an economic transport solution for a low density area
(2) The competing M2 has just been widened and the Windsor Rd upgraded

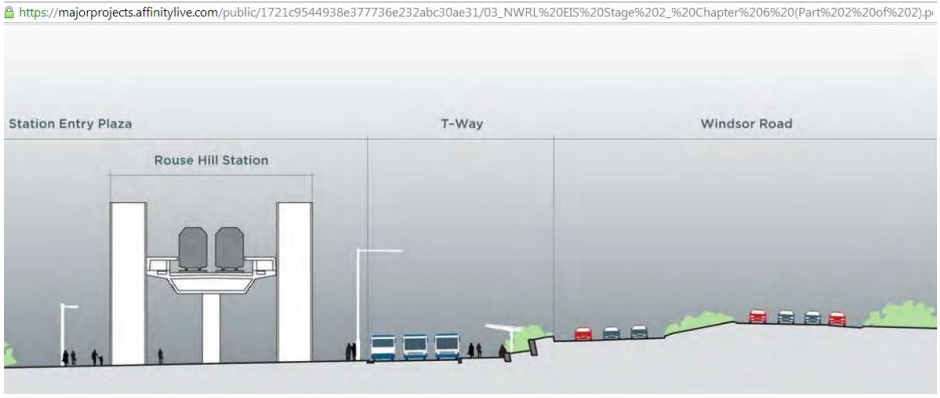

Fig 12: Who will take bus and train in a low density area when there are 4 lane roads?

(3) In order to fill the trains at the planned frequency massive high rise housing projects would be needed around the residential stations of Rouse Hill, Bella Vista and Cherrybrook. Given that Quantitative Easing has created a big asset and housing bubble this can burst anytime.
(4) No network connection to the Blacktown – Richmond line
(5) No relief for the Strathfield – CBD section which was the very original objective of the Chatswood – Epping – Parramatta link, the last leg of which was cancelled by former transport Minister Costa

http://crudeoilpeak.info/wp-content/uploads/2012/12/Submission-NorthWest-Rail-Link-EIS2.pdf

Travel demand

Quote: "Analysis, based on the Bureau of Transport Statistics estimates, indicates that in 2021 there could be approximately 12,000 fewer car trips (two way, two hour AM peak) made as a result of the NWRL project." P 9-7

The following graph shows actual and forecast ADT on the M2, using Transurban traffic reports

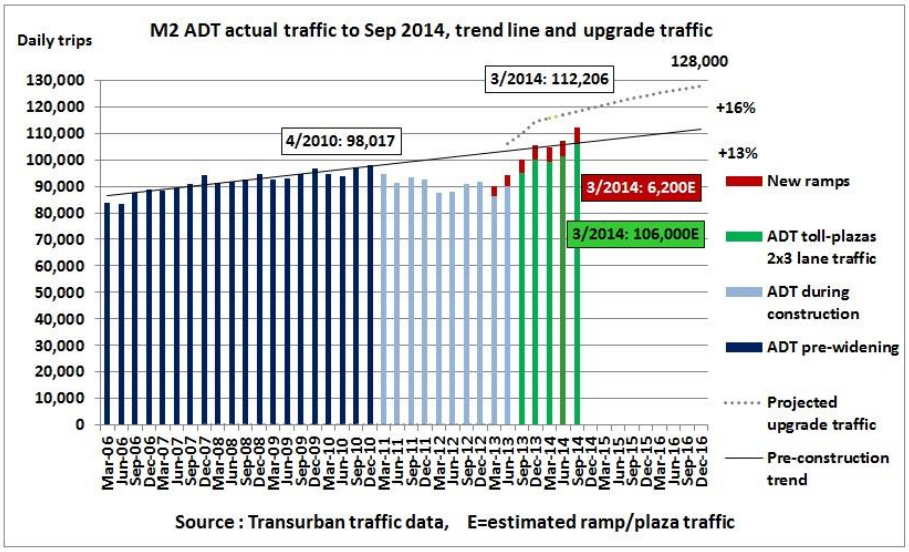

Fig 13: Transurban wants an additional 18,000 ADT by end 2016, 3 years before the NWRL opens

The year 2019

Where are we with peak oil, a process which started in 2005? Oil prices were high in the last 3 years which apparently have now reduced oil demand. At the same time, high oil prices have made the US shale oil boom possible without which the world would already be in a deep oil crisis. There would have been no money in the budget for expensive rail tunnels. But we live on borrowed time. The end of the commodity boom is not good for the NSW budget. And the stamp duty bonanza will end in the next housing crash. Why waste money to disable the double decker functionality of an exiting tunnel?

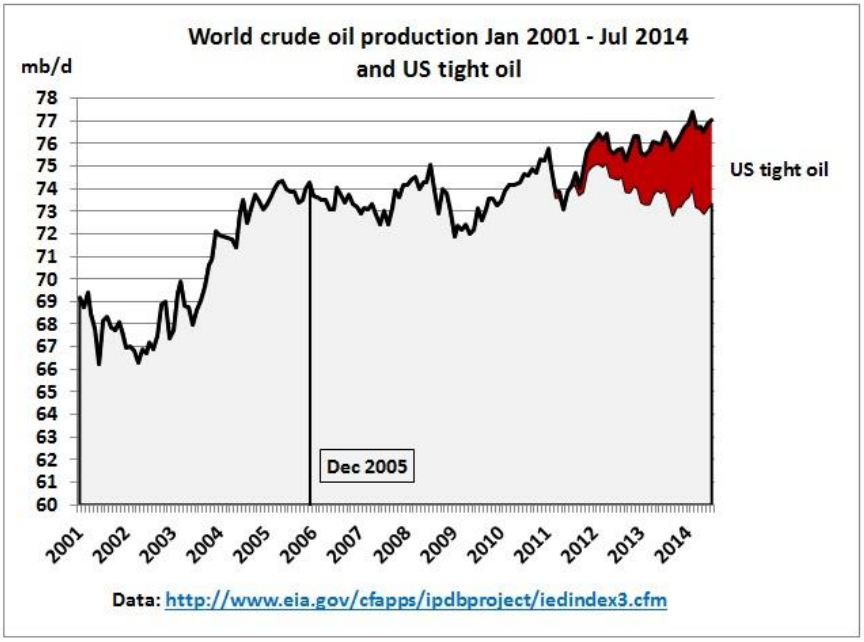

Fig 14: Without US shale oil crude production is on a bumpy plateau since 2005

But if oil demand is down it means that the economy cannot afford that expensive oil. If low oil prices continue there will be less oil & gas sector investments in new projects which are necessary to replace declining oil production in maturing legacy fields. The result will be the next phase of an evolving oil crisis, in a couple of years. Russia's 2nd and last oil peak will also be accelerated.

http://crudeoilpeak.info/russia-peak

That is why Putin is getting nervous

29/7/2014 The Ukraine conflict, peak cheap gas and the MH17 tragedy
http://crudeoilpeak.info/the-ukraine-conflict-peak-cheap-gas-and-the-mh17-tragedy

And we still have a plethora of unresolvable problems brewing in the Middle East. It is very likely that there will be oil supply problems before 2020.

15/6/2014 World's untested assumption on 6 mb/d of Iraqi oil by 2020
http://crudeoilpeak.info/worlds-untested-assumption-on-6-mbd-iraqi-oil-by-2020

Conclusion:

No attempts have been made to "rescue" the double decker functionality of the Epping-Chatswood tunnel. In the worst case scenario there is an oil crisis before the new Epping-Rouse Hill tunnel opens. Then old K and S set double deckers (which are hopefully mothballed and not scrapped) would need to be re-activated to cope with an overwhelming demand from motorists who have run out of petrol. All changes now proposed will be bitterly regretted and someone will have to be responsible for a long chain of wrong decisions

Prepared by Matt Mushalik 17/11/2014