

# COMMENTARY ON "GAS MARKET TASKFORCE - FINAL REPORT AND RECOMMENDATIONS" OCTOBER 2013

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by Dr Duncan Seddon, 16 January 2014.

## Conclusions

The GMT has failed to adequately address the timing and duration of gas price spikes which could potentially close down a substantial portion of Victorian manufacturing.

The GMT proposes extra regulations on an emerging industry which will effectively hinder or block timely development of alternative gas supplies in the state. The GMT proposals effectively ban state-of-the-art hydraulic fracturing (fracking) operations by over regulation and encourage vexatious litigation by opponents of the industry.

## Background

A lucid political critique of the Gas Market Taskforce's recommendations has been given by Alan Moran of the Institute of Public Affairs (The Australian, Wednesday 18 December, 2013). Greg Sheridan (The Australian, Thursday December 19, 2013) has explained the zeitgeist adopted by Australian governments of all persuasions in aligning public policy and regulation with European Union sentiments rather than those of Asia or the USA which results in recommendations such as those of the Gas Market Taskforce.

I will not add to these critiques which I endorse but concentrate on a significant failure of the taskforce to address the issues relating to the supply and price of gas in Victoria over the next five years. I will also address some and specific issues relating to fracking.

## TIMING IS THE PROBLEM

The taskforce sets out the supply-demand dynamics for gas supply on the eastern seaboard of Australia. The report sets out possible scenarios for various outcomes and gives estimates for gas price on the eastern seaboard. These estimates generally result in a higher gas price, especially for consumers in Victoria.

The impact of rising gas price and particularly short-term spikes in gas price are clearly set out in the supplementary material to the report (Chapter 3 of the supplementary material). In essence relatively short term duration (1 or 2 years) hikes in the price of gas will marginalise most gas intensive industries on the eastern seaboard. In my experience, this will have several effects:

1. Companies will be reluctant to invest in the on-going improvement in their operations until the future is clear - as a consequence capital productivity in the gas intensive sector will deteriorate.
2. Upon closure many, possibly a majority of companies affected, will choose to demolish their facilities rather than mothball them or place them on a care and maintenance basis until the gas price reaches an acceptable equilibrium level sometime in the future.

3. Operations will move from domestic production to import with consequential effects for the balance of payments - for example the eastern seaboard fertilizer demand will be supplied from imports.
4. Downstream industries not only will be facing increases in energy prices but will lose any competitive advantage of a local supplier. In essence they will have to compete on labour productivity against Asian producers. Clearly many downstream operations will close.
5. Closed industries will be reluctant to restart their operations when gas prices finally reach their equilibrium level, without what would be today politically unacceptable incentives.

A point to be emphasised here is that such a situation does not result from market failure, rather it is the result of the operation of a transparent and open gas market in which one buyer (actually three LNG producers in Gladstone) are prepared to stand in the market and buy any available gas at any (relative) price.

No sensible gas supplier will commit to long term gas contracts acceptable to the existing manufacturing industry with the prospect of super profits in the offing.

The Gas Market Taskforce has failed to adequately address this problem.

## **FRACKING**

The proposals of the GMT will result in an unacceptable rate of development of unconventional energy resources.

Firstly I note that all the techniques proposed - horizontal drilling and reservoir stimulation by fracking have been in operation for at least 20 years in the offshore gas fields operated by BHP-Esso. Why the government wishes to prevent them being used onshore is a question but this will be the result of the proposals by the interplay of restrictions on chemicals that can be used and jurisdiction of the proposed water commissioner.

## **Chemicals**

The taskforce proposes a ban on BETX chemicals. BETX are light aromatic compounds with a low solubility in water, typically 200ppm. BETX are found naturally in oil and gas reservoirs in the light hydrocarbon fraction of recovered gas or the light portion of crude oil. Formation water in the reservoir would be contaminated with BETX in excess of the quantities required for potable water. Formation water is not potable in any event because of its high salinity.

Thus even if a developer does not use BETX then, if successful in striking oil and gas, co-produced water will be contaminated with BETX. Opponents to development could complain to the water commissioner of the illegal use of BETX. The commissioner would be under pressure to stop development until an investigation cleared the developer. If the commissioner found in favour of the developer, on past observations the opponents would appeal to the AAT and demand extension on the ban on development. This situation would be supported by at least one of the political parties present in the Victorian parliament bringing the minister under pressure to support the ban. The national broadcaster would "investigate" the matter putting more pressure on the minister to extend the ban. Should the AAT find in favour of the developer, the opponents would appeal to a higher court. From my observations all the appeals by opponents will be funded, one-way or another, by various state and federal tax-payer funded organisations.

Inclusion of a ban on using BETX and the establishment of a water commissioner will stop effective oil and gas developments in the State.

### ***What is BETX anyway***

BETX is represent the light aromatics benzene, ethylbenzene, toluene and xylene. These materials are toxic and are narcotics; benzene is a known carcinogen. There are strict limits to the exposure of these chemicals to humans in air and water regulated by environment protection agencies; these limits are in the ppm (parts per million) or ppb (parts per billion) range.

Over 10,000 tonnes of BETX are consumed in Australia every day; on average, the average Australian comes into contact with about 500g of BETX every day. This will remain so as long as petrol is sold in Australia. Unleaded petrol has a BETX content of 30 to 35% and higher in the higher octane grades.

As pure compounds BETX have considerably higher value than petrol. Adding pure BETX to fracking fluids is not a logical option, the fluid used is petrol (gasoline). It should be noted that this was in the early days of shale fracking and today the vast majority (all) of operators use kerosene (jet-fuel) or motor diesel; these fluids have better fit-for-purpose properties from the standpoint of a fracking fluid.

So a question is why does the GMT propose legislating against the use of petrol in favour of kerosene or diesel which contain equally noxious chemical components? What was the source and veracity of the advice leading to a recommendation on banning BETX?

### **Water Contamination**

All produced water from an oil, gas or coal seam gas (CSG) operation will be contaminated. Clean up and discharge of polluted water, whether by hydrocarbons or saline minerals, into the environment is regulated and controlled by Environment Victoria. It is not clear what the water commissioner would do other than add another layer of regulation to oil and gas development in the State.

The present regulatory authorities oversee the contamination of water from petrol spills and the like where BETX contamination is typically well in excess of the levels in formation water. There appears to be no problem with this part of the oil and gas industry that requires a water commissioner's oversight.

### **What is to be done**

It seems to me that Victoria has become a victim of a pea and thimble trick. The geneses being:

1. Victoria produces natural gas at production costs well below international prices which underpins manufacturing in the state. Direct export of this gas would be politically unacceptable.
2. Resource companies identify potentially vast coal seam gas reserves in Queensland's Bowen basin (31,000PJ). An over enthusiastic state government paves the way for development fast tracking proposals to use the CSG for LNG exports.
3. Major multinationals buy the local resource companies and commit to provide the capital necessary. State and federal governments enthusiastically support this and help fast-track development and infrastructure for the facilities at Gladstone.
4. With the prospect of winning elections, the Queensland state government gets cold feet on fast tracking CSG development and starts to impose restrictions. At the same time the

- project proponents learn the true cost of developing CSG and also learn that the reserves (possibly due to the government restrictions) may not be as extensive as first thought.
5. The developers go the "open and transparent" domestic gas market offering the prospect that most, if not all, of the available domestic gas could be exported from Gladstone. This freezes out Victorian users from obtaining long term gas supplies at reasonable prices.
  6. This achieves the objective of exporting Victorian natural gas without having to develop a business case for the concept, which would have almost certainly been rejected.

To my mind the solution has to be to return the LNG export facilities to CSG or similar frontier gas developments. This would require the federal government to place an export restriction on conventionally produced gas in eastern Australia (Cooper, Gippsland and Otway basins). This restriction could be in the form of an export tax set at LNG cif prices in Japan. This would permit the facilities to use conventional natural gas for short term operations, such as start-up and shut down, but force the facilities to develop CSG or shale gas or other frontier gas for their operations as originally conceived.

The development of CSG, shale gas and other frontier gas reserves should be encouraged by the state removing restrictions on development - such as the introduction of a water commissioner or nonsensical restrictions on chemicals. Victoria should also remove restrictions on horizontal drilling and fracking operations deep under national and state parks.

The State should also consider promoting development by sharing their entitlement to royalties with land owners thereby giving them an incentive for promoting development rather than a mix of "stakeholders" as proposed by the GMT.

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Dr. Seddon's industrial career started with ICI on Teesside in the UK where he worked on the production of plastics and fibers. He moved to the Billingham Works where he was responsible for the energy management of a large integrated chemical complex. He moved to ICI Australia in 1980 and worked on the conversion of natural gas to methanol and olefins. In 1983, he moved to BHP and worked on gas to liquids (GTL).

Since 1988, Dr. Seddon has practiced as an independent consultant offering a broad range of services to companies and government bodies with an interest in refining and petrochemicals processes. He has a particular interest in the production of chemicals and fuels from gas and coal. Duncan is the author of over 120 papers, patents and articles two books - "Gas Usage and Value – The Technology and Economics of Natural Gas Use in The Process Industries" (PennWell, 2006) and "Petrochemical Economics - Valuing and Selecting Technology in a Carbon Constrained World" (ICP press, 2010).

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