Submission No 4

INQUIRY INTO THE SUPPLY AND COST OF GAS AND LIQUID FUELS IN NEW SOUTH WALES

Organisation: Caltex Australia Limited

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The Director
Select Committee on the supply and cost of gas and liquid fuels in New South Wales
Parliament House
Macquarie St
Sydney NSW 2000

gasinquiry@parliament.nsw.gov.au

Dear Ms Wood

Please find attached a submission by Caltex to the *Select Committee on the supply and cost of gas and liquid fuels in New South Wales*.

Caltex would be pleased to appear at a hearing of the Committee.

The submission is not confidential.

Please do not hesitate to contact me should you wish to discuss any aspects of this submission.

Yours sincerely

Frank Topham
Head of Government Affairs

Caltex submission to the NSW Legislative Council Select Committee inquiry into the supply and cost of gas and liquid fuels in New South Wales

December 2014

Executive summary

- Caltex is Australia's leading supplier of transport fuels and until recently operated an oil refinery located at Kurnell in NSW. Caltex now operates the Kurnell site as a major fuel import terminal.
- Because of import parity pricing for refinery production and imported fuels, the closure of the Kurnell refinery on fuel prices does not have any impact on fuel prices.
- Liquid fuels are not in tight supply. On the contrary, there is excess global supply capacity of crude oil, which has recently contributed to a collapse in world crude oil prices, and surplus global refinery capacity.
- The closure of Caltex's Kurnell refinery in October 2014 has not adversely impacted liquid fuel supply reliability or security. We are not aware of any closures of liquid fuel storage in NSW.
- Based on our Kurnell refinery analysis, factors that may fundamentally disadvantage Australian refineries include: small scale due to population and geographically dispersed markets; technology that is oriented towards the wrong fuel - petrol rather than diesel; inability to use substantial amounts of lower cost, high sulfur crude oil; increasing shipping costs associated with more distance crude oil supply; distance from markets, so exports are generally not competitive; high capital and operating costs; and in recent years, a high Australian dollar.
- The current level of stockholding in Australia is sufficient for supply reliability. Fuel suppliers in Australia have demonstrated the capability to optimise stockholding so as to minimise costs (hence customer prices) while ensuring a very high level of supply reliability. Australia has established and secure flows of oil and petroleum products due to multiple fuel sources, multiple ports and a web of shipping routes connecting the refineries.
- Transport energy security in extreme scenarios – those that last for many weeks or even months - would come from a wide range of alternative domestic energy sources, not imported crude oil or petroleum products. These sources could include natural gas, LPG, petroleum products derived from gas or coal, electricity and biofuels, depending on the range of technologies existing at the time and in commercial operation. The amount of fuel from these sources could increase if the extreme scenario became a long-term structural change.
- Australia has established and secure flows of oil and petroleum products due to multiple fuel sources, multiple ports and a web of shipping routes connecting the refineries. Sources of crude oil are diverse and include Australia, New Guinea, Malaysia, West Africa and Vietnam. Petroleum product sources are also quite diverse: although the bulk comes from Singapore, product is also readily available from South Korea, Japan, India and, if necessary, from further afield in Europe. There are also a large number of seaboard terminals in each capital city and also in major seaboard terminals in regional centres.

1. Terms of reference and introductory comments

The inquiry was referred to the committee on 6 November 2014, for report by 25 February 2015. Caltex has no operations related to the supply of gas in NSW, except as a consumer, but is Australia's leading supplier of transport fuels and until recently operated an oil refinery located at Kurnell in NSW. Caltex now operates the Kurnell site as a major fuel import terminal.

Our submission to the inquiry therefore focuses on certain terms of reference that relate to liquid fuels supply, as follows:

> "1. That a select committee be established to inquire into and report on ... liquid fuels supply, cost and availability in New South Wales, and in particular:
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> (a) the factors affecting the supply, demand and cost of ... liquid fuels in New South Wales;
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> (b) the impact of tight supply and increasing cost of ... liquid fuels on NSW consumers, including manufacturing, agriculture, energy production, small business, public services and household consumers;
>
> ...
>
> (f) the impact of closures of liquid fuel refineries and storages in New South Wales."

Caltex recently made a submission to the Senate Rural and Regional Affairs and Transport References Committee inquiry into Australia's transport energy resilience and sustainability. We have drawn upon our submission to that inquiry in preparing this submission.

We are not aware of the background to the liquid fuel references so our submission may not fully address the specific questions that committee members might have. In that is the case, we would be pleased to discuss any matters with the committee.

In relation to TOR 1(a):

- The demand for liquid fuels is primarily related to economic growth, the prices of various types of liquid fuel (including petrol, diesel, jet fuel and biofuels)and technological change (in particular, vehicle fuel efficiency). These matters are very broad and well covered in the literature so we don't cover them in this submission; we would be pleased to respond to particular issues the committee might raise.
- The supply of liquid fuels in NSW is primarily from imports, with a small volume of ethanol and biodiesel produced and blended into petrol and diesel within NSW. The submission discusses short term reliability and long term security of supply but does not describe the physical supply chain in detail; once again, we would be pleased to provide specific information to the committee (e.g. in relation to the terminal facilities at Kurnell).
- The cost of liquid fuels is determined by import parity pricing i.e. the setting of wholesale prices at a price comparable with the cost of importing fuel into a given location in Australia. This has been extensively documented in annual price reports by the Australian Competition and Consumer Affairs Commission (ACCC) and parliamentary and government reports. In our submission, we briefly discuss key findings by the ACCC but in essence, liquid fuel prices in NSW (i.e. the cost to consumers) track world prices. Biofuels prices are market based and take into account the price of petroleum product alternatives.
- In its 2014 report, the ACCC observes, "The IPP has closely reflected actual import costs over the years". It follows that because of import parity pricing for refinery production and imported fuels, the closure of the Kurnell refinery on fuel prices does not have any impact on fuel prices.

In relation to TOR 1(b):

- Liquid fuels are not in tight supply. On the contrary, there is excess global supply capacity of crude oil, which has recently contributed to a collapse in world crude oil prices, and surplus global refinery capacity. The latter factor has led to low refiner margins (the gross dollar per barrel return to a refiner for processing crude oil into products) on trend in recent years and has contributed to the closure of Australian oil refineries, including the Kurnell and Clyde refineries in Sydney.
- The cost of liquid fuels (in terms of world and regional prices) increased post-GFC then stabilised years but has very recently decreased sharply. As 88 per cent of the price of petrol is related to international prices and Australia taxes (data from the ACCC), the cost of fuel is mainly related to these factors.
- Oil prices will have an impact on costs for all consumers and drive adjustment through efficiency improvements and fuel substitution. While prices will create impacts, Caltex believes the current policy settings are the most appropriate. If there are specific issues the committee wishes to address during the course of the inquiry, Caltex would be pleased to do so.

In relation to TOR 1(f):

- Caltex closed its Kurnell refinery in October 2014. This has not had, and will not have, any adverse impact on liquid fuel supply or prices. Other impacts, for example on employment and the community, have been well managed.
- We are not aware of any closures of liquid fuel storage in NSW. At Kurnell, liquid fuel storage has increased as a result of the replacement of crude oil with petroleum products

In this submission, we distinguish between supply reliability, by which we mean supply over a period of days or weeks, and supply security, by which we mean a period of years or decades. We further define national security to include energy security issues related to military scenarios including terrorist acts with military scale impacts. We therefore distinguish between normal commercial scenarios, which may include short term disruptions due to natural events such as cyclones, or other types of events such as crude oil supply disruption during the Libyan revolution.

2. About Caltex

With more than 3,500 employees across Australia, Caltex Australia Limited is the nation's leading fuels marketer and is underpinned by a flexible and reliable supply chain. The integrated business incorporates supply, refining, logistics and marketing. With about 22,000 shareholders, including institutions, retail investors, employees, and Chevron Global Energy Inc., Caltex is the only oil refining, fuel and convenience marketing company listed on the Australian Securities Exchange. Caltex's vision is to remain the outright leader in transport fuels across Australia.

3. TOR 1(a) The factors affecting the supply, demand and cost of liquid fuels in New South Wales

3.1 Factors affecting the cost of liquid fuels in NSW

This is a very broad topic and a large amount of material is available. The Australian Institute of Petroleum (AIP), of which Caltex is a member, has extensive briefing material on its website aip.com.au; AIP also publishes reports each Monday on historical petrol and diesel pricing.

For ease of reference, the AIP publication "Facts about petrol prices" is reproduced below.

- The price of petrol in Australia is dependent on world market prices:
    - Crude oil, petrol and diesel are different products and are bought and sold in their own markets. Each market is regionally based and there are linkages and transactions between regional markets.
    - Prices in regional markets reflect the supply and demand balance in each market and the physical characteristics and quality of each commodity. Prices in regional markets can be volatile and can move in different directions from each other.
    - This is why focusing on relevant markets and longer term price trends is more important than focusing on volatile daily or week-to-week price movements.
    - Australia's regional market for petroleum products is the Asia-Pacific market.
    - Tapis crude oil is the key crude oil benchmark for the Asia-Pacific market and for Australia – not West Texas Intermediate (the US market benchmark) which is widely reported in the media. [Caltex note: Dated Brent is also a key benchmark.]
    - The Singapore price of petrol (MOPS95 Petrol) is the key petrol pricing benchmark for Australia.
    - 'Refiner margins' are the differences between product prices and crude oil prices - both of which are set by the market, not by oil companies (eg. Singapore petrol 'refiner margin' = MOPS95 Petrol price minus Tapis [or Brent] price).
- Australian wholesale prices (or TGPs) are closely linked to Singapore market prices:
    - To meet Australian demand, around 40% of petrol is imported - mostly from Asia and particularly Singapore.
    - Australian wholesale prices for petrol and diesel (including spot Terminal Gate Prices or TGPs) are closely linked to the Singapore prices of petrol and diesel – not Tapis crude oil prices.
    - The Singapore benchmark price of petrol plus shipping costs and Australian taxes represents almost the entire wholesale price of petrol – typically around 95% of TGPs.
    - The remaining 5 per cent of TGPs reflect insurance, a quality premium for Australian fuel standards, local wharfage and terminal costs and a small wholesale marketing margin (where competitively possible).
    - Generally, there is a short time lag of 1-2 weeks between changes in Singapore prices and changes in Australian TGPs, and this lag operates when prices are both rising and falling.
    - Daily TGP data are published by all wholesale suppliers (AIP website has average TGPs - www.aip.com.au).

- Retail (pump) prices can be volatile in some markets, reflecting intense local market competition
    - Once fuel leaves the terminal gate (where TGPs apply), retail or pump prices vary across metropolitan and regional areas, reflecting local area factors and competition.
    - TGPs are typically around 95 per cent of pump prices. Apart from TGP, pump prices in Australia also reflect land transport costs, marketing and administration costs, and the costs of running service stations like wages, rent and utilities. The ability to cover these costs depends on local area competition.
    - Retail prices in metropolitan areas also tend to follow a discounting cycle which historically has ranged up to 12 cents from peak to heavily discounted trough.
    - Consumers clearly benefit by purchasing heavily discounted petrol at the low point in the cycle – the ACCC and media provides advice on low price days. The ACCC has stated that the cycle is a clear demonstration of vigorous competition and the discounting cycle clearly benefits price conscious consumers.
    - The major oil companies directly own and operate only a limited number of service stations across Australia (around 10 per cent) and these are largely in metropolitan areas.
- Country pump prices are generally higher and more stable than metropolitan prices due to differing competitive and economic characteristics:
    - Retail fuel prices are more stable in regional areas because there is a general absence of discounting.
    - Costs also vary greatly between regional including towns, reflecting differences in local competition, freight and handling differences, as well as different operating margins depending on fuel volumes and convenience store turnover.
    - Retail prices in regional areas are largely set by independent owner/operators (including those who sell fuel supplied by one of the major brands under licence).
- Australian consumers clearly benefit from our highly competitive fuel market where retail petrol and diesel prices are among the lowest in the developed world:
    - Vigorous competition also means that the profits made by fuel suppliers are typically a very small proportion of the retail price (eg. average industry profit over the last 10 years is around 2 cents per litre of all fuels sold).

3.2 ACCC report *Monitoring of the Australian Petroleum industry*

The ACCC's most recent annual report was released on 3 December 2014. The reports commenced in December 2008 and followed the report of the ACCC inquiry into the price of unleaded petrol published in December 2007. The annual reports and supplementary reports on special topics commissioned from consultants by the ACCC form an extensive and authoritative body of literature relating to the petroleum products market in Australia.

The following key points have been compiled from the text of the ACCC December 2014 report:

- Annual average retail RULP prices in 2013–14 were historically high. Prices of regular unleaded petrol were the third highest on record in real terms. In nominal terms, annual average retail petrol prices were the highest on record. In nominal terms, annual average

petrol prices have been trending upwards and have almost doubled since 1999–00 when they were 77.5 cpl—they have been over one dollar per litre since 2004–05.

- Retail petrol prices have closely tracked movements in international refined petrol prices (in Australian cents per litre) over the last 15 years. The price of Mogas 95 is the relevant international benchmark used for domestic pricing of petrol in Australia. Singapore benchmark prices are used for pricing petrol in Australia due to Singapore being one of the world's most important trading and refining centres and its proximity to Australia.
- By international standards Australia's petrol prices are comparatively low, due to relatively low fuel taxes. Including taxes, Australia had the fourth lowest retail petrol prices in the OECD. When retail prices are compared without the tax component, Australia ranks close to the average of OECD countries.
- Retail petrol prices in the five largest cities in Australia move in cycles. Price cycles do not generally occur in Canberra, Hobart and Darwin, or in most regional locations. They are of concern to many consumers due to the large price increases that occur in a single day, and across most retail sites, on a broadly regular basis. Many consumers try to take advantage of the bottom of the price cycle to buy petrol at relatively low prices. The duration of petrol price cycles in most cities is now longer than two weeks.
- Petrol prices in regional locations are generally higher than in the five largest cities for a number of reasons, including:
    - a lower level of local competition, often reflecting the lower number of retail sites
    - lower volumes of fuel sold
    - distance/location factors
    - lower convenience store sales.

  These factors also explain differences in petrol prices between regional locations.
- It is often claimed that retail petrol prices always increase before public holidays, and in particular long weekends. ACCC analysis indicates that, over the last five years, the size of price cycle increases before public holidays was on average no larger than the size of price increases at any other time of the year.
- The relevant international benchmark price for petrol in Australia is the price of refined petrol in the Asia-Pacific region, the price of Singapore Mogas 95 Unleaded. Mogas 95 prices were relatively stable in 2013–14, largely being in a USD 10 band between USD 115 per barrel and USD 125 per barrel. Prices were significantly more volatile in the two previous years.
- In 2013–14 the international benchmark price of refined petrol and taxes accounted for around 88 per cent of the annual average retail price of petrol. For diesel, these two components accounted for 87 per cent of the annual average bowser price.
- As Australian petrol prices are not regulated, local petrol companies have discretion in determining their retail prices. However, the two largest components of the pump price of petrol—the international benchmark price and taxes (excise and GST)—are outside the control of local petrol companies.
- The build-up of retail petrol prices in 2013–14 indicates that the price is fundamentally driven by movements in the international price of crude oil. Crude oil prices remained high in 2013–14. The annual average price of Brent crude oil was around USD 110 per barrel. This was slightly higher than in 2012–13 and was the second highest nominal annual average price of Brent crude oil on record.

- In 2013−14 net profits on all products and services across all sectors of the downstream petroleum industry were $1.16 billion—an increase of 46 per cent on 2012−13 in real terms. However, it was still below the annual average net profit across all sectors and products over the last 12 years of $1.62 billion in real terms.
- The increase in net profits from last year was largely due to improvements in the performance of the total supply sector. The refinery sector was profitable in 2013–14 for the first time since 2010–11, while net losses in the other parts of the supply sector decreased.
- In 2013−14 downstream petroleum industry real unit net profit was 1.30 cpl, an increase of 47 per cent on 2012−13 (0.88 cpl). In 2013−14 the refinery sector reported net profits of $27 million, an increase of $137 million from losses of $110 million in real terms in 2012−13. While downstream real unit net profit has increased in the past two years, it was significantly lower than the annual average real unit net profit over the 12 year period (1.98 cpl).
- In 2013−14 the combined share of the refiner-wholesalers of branded retail sales of the monitored firms was 33 per cent. This share has steadily declined over the years. In 2002–03 their combined share was 83 per cent. On the other hand, large independent retail chains and the supermarkets experienced significant increases in the share of retail petrol sales monitored by the ACCC over the last 12 years. Between 2002–03 and 2013−14 the share of the supermarkets increased from 10 per cent to 48 per cent, and the share held by the large independent retail chains increased from 6 per cent to 19 per cent.

4. TOR 1(f) The impact of closures of liquid fuel refineries and storages in New South Wales

4.1 Market pressures on oil refining in Australia

Caltex's views on the state of the industry are well summarised by the Australian Institute of Petroleum (AIP) on its website (www.aip.com.au):

> On 5 February 2013 the House of Representatives Standing Committee on Economics tabled its Report on 'Australia's Oil Refinery Industry', following the Committee's inquiry in 2012. The Inquiry was conducted in relation to claims and concerns being raised about the viability of Australia's oil refinery industry, and the potential impacts of declining domestic refinery capacity on the economy, energy security and employment in the sector. The Report reconfirmed the findings and conclusions contained in the Government's 2012 Energy White Paper.
>
> Some highlights in the Committee's Report in relation to the oil refining industry include the following:
>
> The global oil refining industry is undergoing significant structural change.
>
> - Larger, more efficient refineries are being established in the Asian region resulting in increased competitive pressures on refining operations in other regions.
> - The expansion of refining capacity in Asia has led to the rationalisation of refining in established markets such as Europe and the United States of America. Australia's domestic refining industry is similarly facing competitive pressures.
> - The domestic context of high operating costs, ageing facilities, increasing sea miles for the transport of crude to the refineries, shallow berths that are not suitable for large crude carriers, increasing technical complexity needed for refining of the broad range of crude oil and the high Australian dollar, put Australia at a competitive disadvantage, resulting in the closure of some domestic refineries that are no longer commercially competitive.

- While Australia's proximity to the Asian region does pose some challenges for domestic refineries, it also provides opportunities to take advantage of Asia's surplus refining capacity and to continue to strengthen supply chains in the region.
- The market for liquid fuels is robust and, from the available evidence, it is operating soundly. Australia is well serviced by reliable and diverse supply chains.
- The changes in domestic refining capacity to date will not impact on Australia meeting its liquid fuel requirements. There are reliable, mature and highly diversified international fuel supply chains, which provide Australia with economic security.
- The closure of the refineries will not lead to negative price outcomes for consumers. Australian fuel prices reflect an import parity price, which is the price in international markets. The Australian Competition and Consumer Commission was clear in its advice to the committee that as a result of import parity pricing, the retail price for petrol is not impacted by refinery closures.
- Australia can source its liquid fuel needs from a diversity of sources so that if one source becomes unavailable other sources can meet demand.
- Some domestic refining capacity is a worthwhile complement to imports as part of having reliable, mature and diverse supply chains for liquid fuels.

In relation to the final point, Caltex supports Australian manufacturing of any kind of goods (including petroleum products) that is globally competitive and does not require direct or indirect subsidies to remain viable. However, being “worthwhile” should not imply an industry should be subsidised, just given every chance to prosper by the removal of unnecessary regulatory costs and the efficient operation of the Australian economy as a whole.

Caltex’s decision to close its Kurnell (Sydney) refinery (which occurred in October 2014) was the result of extensive analysis, which showed that a variety of factors beyond Caltex’s control had, after almost 60 years of operation, made the refinery unviable.

Similar analysis of Caltex’s Lytton refinery in Brisbane showed it could remain viable subject to improvements being made and this refinery continues to operate.

Other Australian refiners would have reached similar conclusions about the viability of certain refineries, as the ExxonMobil Adelaide refinery was closed in 2003 and the Shell Sydney refinery in 2012; the BP Bulwer Island refinery will close in 2015. On the other hand, Vitol has said it will keep the former Shell Geelong refinery in operation.

Based on our Kurnell analysis, factors that may fundamentally disadvantage Australian refineries include: small scale due to population and geographically dispersed markets; technology that is oriented towards the wrong fuel - petrol rather than diesel; inability to use substantial amounts of lower cost, high sulfur crude oil; increasing shipping costs associated with more distance crude oil supply; distance from markets, so exports are generally not competitive; high capital and operating costs; and in recent years, a high Australian dollar.

Like any industry, long-term viability depends on being low on the cost curve – Australian refineries are high on the cost curve when all competitor refineries (including much larger scale refineries) are included, even though they may be well-run and quite efficient compared with comparable refineries in Asia.

4.2 Implications for fuel supply reliability and security

The current level of stockholding in Australia is sufficient for supply reliability. Fuel suppliers in Australia have demonstrated the capability to optimise stockholding so as to minimise costs (hence customer prices) while ensuring a very high level of supply reliability. While there have been supply disruptions, these have generally been related to refinery failures or natural events such as cyclones or foods. Other energy sources also suffer from occasional disruptions. Market forces ensure reliability, as a fuel supplier who can't assure supply will lose business to local or overseas competitors.

Liquid fuel security and liquid fuel reliability have different timescales: reliability in days or weeks; and security in months or particularly years. In our view, Australia does not have fuel security or reliability problems. However, we currently don't comply with our IEA obligation i.e. a question of compliance, not an energy security issue. We understand that Australia's level of compliance is currently a matter for further analysis (including collection of more accurate stock data) and discussion with IEA of definitional issues (e.g. stock on water).

Maintaining stocks equivalent to 60 days or 90 days of net imports would make very little difference to fuel security. Studies have clearly demonstrated that fuel supply chains are sufficiently responsive to cope with the kind of supply disruptions that could be expected in normal circumstances. In more extreme and rare circumstances, which are most likely to be military scenarios, stock levels are unlikely to help much – we would just run out of fuel a few days sooner. In addition, fuel would be only one of a long list of goods in short supply, so the scenario is far more complex than just fuel.

The solution to extreme scenarios is having adequate flows of oil, not stocks i.e. ensuring the fuel supply chain suffers least impact from an extreme event. Robustness would be maximised by many alternative shipping routes from many sources. If international trade on fuel was disrupted by military action, having a strong domestic supply chain of this kind would be an important safeguard. We are fortunate that Australia has well-developed domestic supply chains and supporting emergency response plans. These supply chains work very well in normal commercial circumstances and can cope with a variety of disruptions such as refinery breakdowns, cyclones, product contamination and global incidents (such as Libyan supply disruption). Government studies have shown the Australian supply chain would also cope with other plausible international supply disruptions.

Australia has established and secure flows of oil and petroleum products due to multiple fuel sources, multiple ports and a web of shipping routes connecting the refineries. Sources of crude oil are diverse and include Australia, New Guinea, Malaysia, West Africa and Vietnam. Petroleum product sources are also quite diverse: although the bulk comes from Singapore, product is also readily available from South Korea, Japan, India and, if necessary, from further afield in Europe. There are also a large number of seaboard terminals in each capital city and also in major seaboard terminals in regional centres like Cairns, Townsville, Mackay, Gladstone, Newcastle, Geelong, Hastings, Launceston, Albany, Esperance, Geraldton, Port Hedland and Darwin.

More information on the diversity of fuel sources, seaboard terminals and shipping routes can be found in a number of reports, including *Australia's Maritime Supply Chain (June 2013)* by Hale and Twomey, AIP's Downstream Petroleum 2013 and Maintaining Supply Security & Reliability for Liquid Fuels in Australia 2013, the ACCC annual monitoring report and the 2013 House of Representatives Standing Committee on Economics Report on Australia's Oil Refinery Industry.

The key question is how much we are prepared to pay to "insure" against very low probability events beyond those that the current supply chain can cope with, in particular, national security scenarios due to military action. The answer may be a considerable amount: we spend many billions of dollars each year on our armed forces yet the risk of a significant attack on Australia is very low. Security of fuels for military purposes is presumably taken into consideration in defence planning and there would be value in some of this analysis being made public, at least in declassified form.

Refineries would not appear to be of much use in extreme military scenarios: crude oil and product imports would have similar vulnerability to attack by hostile forces. Australia's crude oil is mostly in remote locations; only the limited inland supplies and declining Bass Strait supplies would be less vulnerable to attack.

We note that given the diversity and flexibility of Australia's crude oil and products supply routes, and the many thousands of ship movements each year through major shipping routes (we estimate there are about 30,000 crude oil and product tanker voyages each year globally), we don't see that a terrorist attack on shipping routes would have any material impact on Australian fuel supply. However, we don't have expertise on this subject.

It follows that energy security in extreme scenarios – those that last for many weeks or even months - would come from alternative domestic energy sources, not imported crude oil or petroleum products:

- Coal can be manufactured into petroleum products using well-established technology
- Natural gas can also be transformed into liquid fuels using well-established technology
- Natural gas in compressed or liquefied form can be used directly in light and heavy vehicles
- The LPG we use is partially derived from Australian natural gas production
- Ethanol can be used as a 10 per cent blend in most vehicles and up to 85 per cent in some vehicles
- Biodiesel can be used as a 5 per cent blend in all vehicles and up to 20 per cent or more in some vehicles and applications
- Biomass can be manufactured into jet fuel is special chemical plants
- Pure electric and plug-in hybrid vehicles are already on our roads and our railways are partially electrified.

Clearly, diversification of transport fuel supplies is already occurring, including in relation to on-road fuels. Transport fuel security also comes from the demand side, for example more efficient vehicles, diversification of transport modes and reduction in transport demand.

The question is sometimes asked whether a new refinery could be established in Australia at world scale, with current technology and serving the whole Australian market. The answer is no. The fundamental problems would include capital and operating costs, which would be much higher than in Asia; the cost of distributing fuel interstate; and the cost of coastal freight relative to direct product imports. Australia also faces the problem that overseas refineries may have government involvement and not be constructed on the same commercial basis as in Australia. Investors would always see less cost and risk in building a refinery overseas and importing products to Australia.

Commercial factors have driven decisions to close or retain Australian refineries in operation. Proposals have sometimes been made (not by refinery owners) for the Australian Government to subsidise refineries to keep them operating. While large capital and operating cost subsidies could

keep any manufacturing plant in operation, the costs would be enormous. Such expenditure would also raise the question of why the federal government did not invest in a whole range of support for manufacturing industries; the well-established answer is that this creates a disadvantage for new manufacturing and other industries while impeding the transition of older industries.

4.3. The Australian Government has extensively examined transport energy security and its reports support a competitive market-based approach

The federal government resources and energy department (currently the Department of Industry) has undertaken numerous assessments of Australia's oil supply security for both Coalition and Labor Governments, including the commissioning of expert reports on particular aspects of supply security.

Key reviews include the National Energy Security Assessments (NESA) and Liquid Fuel Vulnerability Assessments since 2008, Australian Government Energy White Papers in 2004 and 2012, and the 2013 Report of the Parliamentary Inquiry into Australia's Oil Refining Industry. Key reports by consultants Hale and Twomey include *Australia's Maritime Supply Chain (June 2013), National Energy Security Assessment (NESA) Identified Issues: Competitive Pressures on Domestic Refining (June 2012)*.

These reports have made a number of observations and conclusions relevant to the Committee's terms of reference. For example:

- "In reality, it is difficult to envisage a scenario in which shipping is not available and historically we cannot point to an event which saw the collapse of the tanker market." (Hale and Twomey include *Australia's Maritime Supply Chain*)
- "[In relation to refinery closures] Australian supply chains would adjust to new sources and commercial trading strategies ... Supply chain diversity and flexibility is retained which provides continued security of supply. Only in the unlikely scenario of no refining sector coupled with a failure of physical oil markets does Australia lose the flexibility to redirect and refine some crude oil." (Hale and Twomey*, Competitive Pressures on Domestic Refining*)
- "The building of strategic reserve stocks to maintain compliance with the IEA treaty would [require] an estimated $6.8 billion investment to provide both stock and storage infrastructure." (EWP issue paper, 2014)

These reviews and reports demonstrate extensive and ongoing scrutiny of Australia's liquid fuel supply security, including in-depth analysis of various issues and assessment of risks. However, it should be noted that this energy security assessment does not include "national security" (mostly military) scenarios i.e. fuel supply disruptions caused by military action or threats of action against Australia, its trade routes, or trading partners.

We assume that defence planning, which would largely be classified, considers military scenarios; indeed, there would be no justification for armed forces if there was no potential military threat.

In the long term, there are legitimate questions about the transition from liquid fuels derived from crude oil towards fuel from other sources. However, our contention is that market intervention to respond to commercial scenarios is not justified because we simply do not know enough about future technologies; intervention would almost certainly be misguided and incorrect and incur large unnecessary costs.

The best approach to non-military scenarios is reliance on competitive markets, as concluded by Energy White Papers. Some limited support for RD&D, innovation and commercialisation could be justified where there are market barriers but the first response should always be to attempt to remove the barriers.

AIP summarises the situation

> Fundamentally, Australia will continue to be able to access crude oil to meet its refining needs, as well as imported petroleum products for customers, as long as we support efficient and open global markets and pay prevailing market prices for crude oil and petroleum products.
>
> A market-based approach to liquid fuel supply and infrastructure development, complemented by a stable policy and investment environment, will encourage the ongoing significant investment needed in supply infrastructure to meet growing fuel demand in Australia.
>
> Open market operations also mean that Australia is not insulated from the structural changes occurring in the global market, and will ensure that Australia can capture the benefits of the reshaping of the global refining industry and pattern of trade, and the rise of Asia as a global refining, demand and trading centre.
>
> Experience has shown that orderly structural change in the industry has little impact on longer term supply reliability and market prices for consumers, as confirmed in the 2013 Parliamentary Inquiry Report.
>
> Demonstrated, efficient supply chain management by industry, and rapid and comprehensive response strategies, enable lost supply to be replaced in the event of disruptions. Industry actions are also well supported by the robust national emergency planning and management frameworks.
>
> Being on the doorstep of Asia and well integrated into this emerging market means the Australian petroleum industry will be in a strong position to maintain a high quality supply performance well into the future. (*Maintaining supply security and reliability for liquid fuels in Australia, September 2013*)