
The Parliament of the Commonwealth of Australia

Report on Australia's oil refinery industry

House of Representatives
Standing Committee on Economics

January 2013
Canberra

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ISBN 978-0-642-79831-2 (Printed version)

ISBN 978-0-642-79832-9 (HTML version)

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Chair's foreword

Australia is a net exporter of energy and has a positive energy future. As the world's ninth-largest energy producer, Australia is the largest coal exporter and third largest uranium producer in the world. In future years, we are projected to be the world's second largest liquefied natural gas exporter, and are geographically well placed to cement our role as a leading energy supplier to our regional neighbours.

The oil refining industry is not experiencing the same growth as other areas of Australia's energy sector. 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. Evidence shows that Australian refineries are not competitive when compared to the new and expanding mega refineries in Asia. 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.

Following the closure of the Clyde and Kurnell oil refineries, refinery capacity in Australia will decrease by about 28 per cent and leave five operating refineries. Domestic refiners will produce just over half the fuel consumed in Australia with the remainder being imported. Consequently, concerns have been 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 most pessimistic view was that this is the beginning of the end of Australian refining, and the most optimistic view was that there is a future for Australian refining, albeit under increasing competitive pressure. The committee noted that during the last decade the oil industry has invested over \$9 billion in its Australian refineries.

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 energy industry is in a state of change, both with the global rationalisation of the traditional liquid fuel industry, and the growth in alternative and new types of energy sources. Australia's liquid fuel needs should be seen as one part of our energy future, albeit an extremely important one. 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 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.

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 Australian Institute of Petroleum and refiners were also confident about the reliability of Australia's supply chains and infrastructure to continue to meet local fuel demands, as it has done over many decades.

It should be noted that while Australia has both crude oil reserves and a refining capacity it is not self-sufficient. In 2010–11 Australia imported around 83 per cent of its crude oil and other refinery feedstock. It has and continues to import both crude oil and refined fuels. Following the closure of the Clyde and Kurnell refineries, Australia will refine 50 per cent of its fuel needs onshore, predominantly from imported crude.

The Energy White Paper (EWP) noted that 'our lack of self-sufficiency and the prospect of further refinery rationalisation does not in itself compromise or reduce our energy security'.

Energy security is fundamental to Australia's prosperity. It helps to deliver the economic and social outcomes we expect. The National Energy Security Assessment (NESA) found that Australia's energy security situation is meeting Australia's economic and social needs, albeit with some emerging market policy uncertainties that could have implications for managing our current level of energy security.

Our liquid fuel energy security remains largely unchanged from 2009 and is assessed as high trending to moderate in the long term. High energy security is when the economic and social needs of Australia are being met. Long term trends reflect uncertainty in predicting that far ahead, but also reflect the likelihood that crude will have to be sourced from countries that are not geopolitically stable, and from non-conventional sources, which will be more expensive to extract.

As part of considering the economic impacts of refinery closures it is also essential and timely to note the importance of fuel quality standards and their bearing on environmental and health outcomes.

The committee noted concerns by stakeholders that the move towards imported refined fuel might reduce standards both in terms of environmental outcomes and quality control. While the committee is not in a position to assess the validity of the claims, it agrees that rigorous monitoring is important to ensure that imported refined fuels are meeting Australia's fuel quality standards. It is also worth noting that fuel standards are steadily improving in key oil refining countries from which Australia sources its refined products.

In respect to any implications of domestic refinery closures on Australia meeting its liquid fuel needs, evidence to the committee indicated that diversity of supply is at the core of Australia's energy security. The key to our high energy security is our access to well-functioning markets for liquid fuels and supply chains with a high degree of resilience. This means that Australia can source its liquid fuel needs from a diversity of sources so that if one source becomes unavailable other sources can meet demand.

The closure of some domestic refineries poses little threat in a market of rapid expansion in Asia leading to an oversupply that is likely to last for some time. It is less easy to predict whether maintaining a strong ability to refine crude, including our own, will be a necessary part of the energy security mix 20 years from now and, if so, whether Australia's aging refineries will be suitable and for how long and at what cost.

We do know that Australia is blessed with energy options and that energy security is enhanced by diversifying options, as long as the market is able to supply those options in an affordable and reliable way.

NESA provides a positive assessment about Australia meeting its energy security needs. In addition, there is an emergency response capacity to deal with the impact of a sudden oil supply shortage. At the national level, the *Liquid Fuel Emergency Act 1984* provides the Australian Government with the authority to prepare for, and manage, a national liquid fuel emergency. In addition, Australia is a member of the International Energy Association (IEA), which can provide coordinated measures by IEA member countries to increase supply and reduce demand.

As a net oil importer, Australia is obligated to maintain reserves of crude oil and/or product equivalent to 90 days of the prior year's average net oil imports. While Australia is not currently meeting this obligation, the Australian Government has acknowledged this issue and is already investigating options to address Australia's non-compliance.

While it is anticipated that domestic refinery closures will not impact negatively on price outcomes for Australians or on our energy security, unfortunately closures have, and will, result in job losses at specific refineries. Evidence presented showed that the people employed in the oil refinery industry are highly skilled, productive and, as is indicated by the average length of service, loyal.

The energy sector is a major employer providing work directly and indirectly for over 100 000 Australians, with jobs in the sector to grow by 3.9 per cent annually, for the next five years. However, employment in the oil refining sector diverges from the wider energy sector. At present, 5 500 people are directly employed in the sector with growth declining because of reducing refining capacity.

Where closures are inevitable, reducing undue stress and assisting workers to adjust to changing employment circumstances should be a priority for both industry and government. This can only occur when there is a level of certainty for workers and targeted support. To date, structural changes have occurred in a relatively orderly manner, with long lead times between closures being announced and workforce having to adjust. Efforts to redeploy and reskill displaced workers must remain a priority.

Despite the changes over the last decade and recent closures, evidence to the committee suggests that going forward there is a role for the Australian oil refinery industry, with groups acknowledging that some domestic refining capacity is a worthwhile complement to imports as part of having reliable, mature and diverse supply chains for liquid fuels.



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Membership of the Committee

Chair	Ms Julie Owens MP
Deputy Chair	Mr Steven Ciobo MP
Members	Mr Scott Buchholz MP The Hon Joel Fitzgibbon MP Mr Stephen Jones MP Dr Andrew Leigh MP Ms Kelly O'Dwyer MP Mr Craig Thomson MP

Committee Secretariat

Secretary	Mr Stephen Boyd
Inquiry Secretary	Ms Samantha Mannette
Senior Research Officer	Ms Zoë Smith
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Terms of reference

On 1 November 2012 the Minister for Resources and Energy, the Hon Martin Ferguson AM MP, referred the following terms of reference for inquiry and report by 5 February 2013.

1. Identify the current international and domestic trends and pressures impacting on the competitiveness of Australia's domestic oil refineries.
2. Investigate the impact of declining refinery capacity in Australia on the economy. This should include analysis of:
 - a) current supply chains and their effectiveness in meeting Australia's liquid fuel requirements;
 - b) import price outcomes for consumers from the current arrangements;
 - c) direct and indirect employment impacts;
 - d) any relevant information on the impact of the closure of Australian refineries, including on downstream activities.
3. Identify any potential issues for Australia's energy security from possible further closures of oil refinery capacity, noting the findings of the National Energy Security Assessment (December 2011).
4. Consider the implication of refinery closures on the associated workforce, including age profile, alternative employment opportunities and labour force mobility.



List of abbreviations

ACCC	Australian Competition and Consumer Commission
ACPM	Australasian Convenience and Petroleum Marketers Association
AIP	Australian Institute of Petroleum
AMWU	Australian Manufacturing Workers' Union
AWU	Australian Workers' Union
CERM	Co-ordinated Emergency Response Measures
CFMEU	Construction, Forestry, Mining and Energy Union
EWP	Energy White Paper
IEA	International Energy Agency
IPP	import price parity
LFE Act	<i>Liquid Fuel Emergency Act 1984</i>
LFVA	Liquid fuels vulnerability assessment
NESA	National Energy Security Assessment
NOSEC	National Oil Supplies Emergency Committee
RET	Department of Resources, Energy and Tourism

Introduction

Referral of the inquiry

- 1.1 On 1 November 2012 the Minister for Resources and Energy, the Hon Martin Ferguson AM MP, referred to the House of Representatives Standing Committee on Economics (the committee) an inquiry into Australia's oil refinery industry.

Background

- 1.2 In June 2012 Shell announced that oil refining operations at its Clyde refinery would cease on 30 September 2012, and the refinery and Gore Bay terminal would be converted into fuel import facilities by mid-2013. Similarly, in July 2012 Caltex announced that it would close its Kurnell oil refinery and convert it into a major oil import terminal. These changes will leave Australia with five domestic oil refineries.
- 1.3 Australia's maximum refining capacity will reduce by around 28 per cent to 32 620 ML. It is forecast that domestic refiners will produce just over 50 per cent of the fuel consumed in Australia with the remainder being imported.
- 1.4 Some groups are concerned that a reduction in refining capacity could be detrimental to Australia's energy security. However, the *Energy White Paper 2012* (EWP), while noting the importance of energy security to Australia's prosperity, does not see major challenges from a reduction in domestic refining capacity.
- 1.5 The EWP has cautioned that self-sufficiency as an energy policy is misplaced and could be extremely costly to the community. One of the keys to energy security is having diverse supply chains. The EWP is confident that the diversity of international supply chains will meet

Australia's refined fuel needs and cover reductions in domestic refining capacity.

- 1.6 Some groups have raised concerns that the refinery closures could lead to adverse price outcomes for consumers. Again, the EWP discounts this prospect commenting that 'the closure of existing Australian refineries is unlikely to have any major impact on consumer fuel prices, as import parity pricing is the basis for wholesale and retail fuel pricing in Australia'.¹

Objectives and scope of the inquiry

- 1.7 The committee's role is to examine Australia's oil refinery industry as set out in the terms of reference. In conducting the inquiry the committee has taken evidence and taken into account the findings in the *Energy White Paper 2012* and the *National Energy Security Assessment*. The purpose of the inquiry is not to determine what a minimum level of domestic refining capacity should be.

Conduct of the inquiry

- 1.8 Details about the inquiry were placed on the committee's website. A media release announcing the inquiry and seeking submissions was issued on 5 November 2012. In addition, the inquiry was advertised in *The Australian* on 7 November 2012.
- 1.9 Twenty submissions were received, which are listed at Appendix A. On 30 November 2012 the committee conducted a roundtable public hearing. This format is highly effective for gathering and scrutinising information in a short time frame.
- 1.10 The submissions and transcript of the roundtable are available on the committee's website at: www.aph.gov.au/economics.

1 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 126.

Structure of the report

- 1.11 The report has been structured in an easy-to-read format. In discussing each issue, evidence and other relevant material is provided, followed by the committee's conclusions.
- 1.12 Chapter 2 provides an overview of Australia's oil refinery industry relative to international industry trends.
- 1.13 Chapter 3 examines the economic impacts of declining refining capacity. The chapter examines a range of factors including the advantages of having diverse international supply chains and import parity pricing.
- 1.14 Chapter 4 discusses the importance of energy security, the level of risk and the measures in place to ensure Australia's energy security needs. The impact of reduced refining capacity on Australia's energy security is examined.
- 1.15 The final chapter examines the direct and indirect impact of refinery closures on employment.

Australia's oil refinery industry

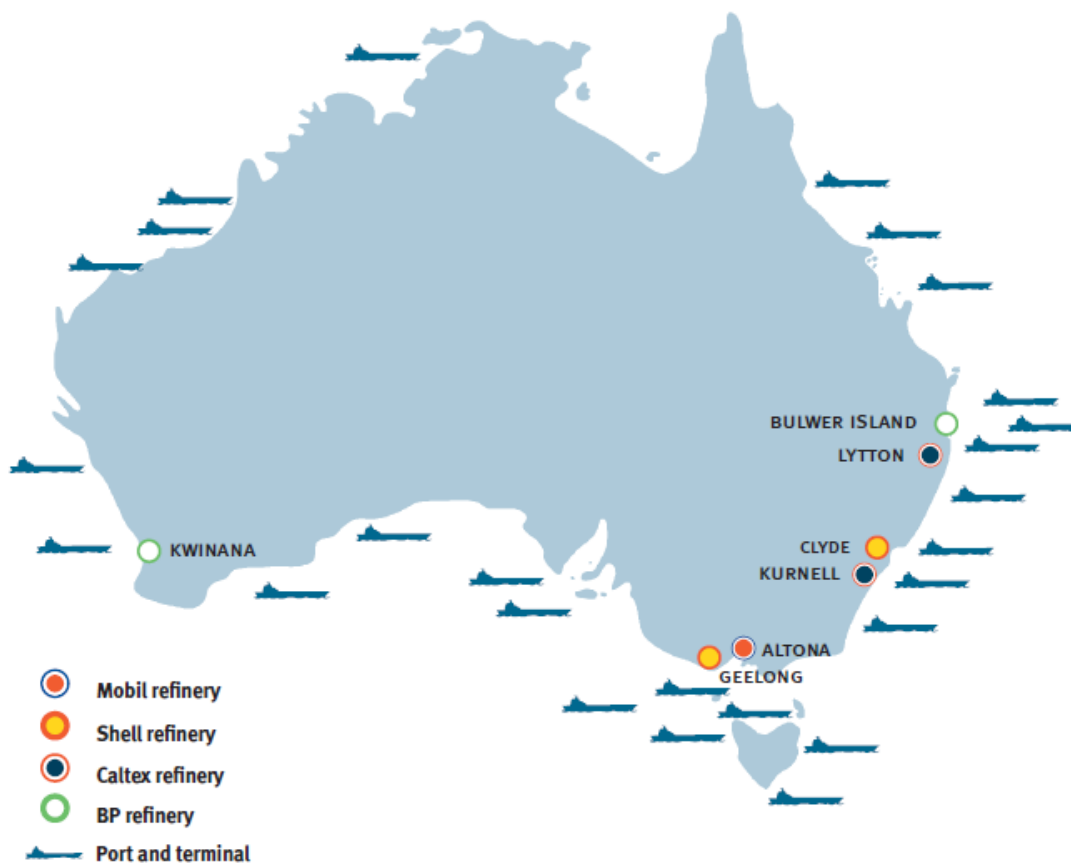
Overview

- 2.1 The oil refinery industry has been experiencing structural change globally and domestically. These changes have tended to follow an orderly transition over many years, allowing the market to respond. This has involved the rationalisation of the refining sectors in established markets such as Europe and the United States of America, and the emergence and expansion of refining capacity in other regions, in particular Asia.¹
- 2.2 Recent and impending closures of oil refineries in Australia have raised concerns 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.
- 2.3 The major oil refining companies – Shell, Caltex, BP and Exxon Mobil – argue that Australia's oil refineries are at a competitive disadvantage in the region. Decisions to close selected refineries have been based on commercial considerations, as some refineries have been operating at a loss.
- 2.4 As a result, the trend has been to move away from domestic refining to a greater dependence on liquid fuel imports. This will include converting selected domestic refineries to import terminals. The companies have not sought government subsidies to continue the operation of these suboptimal refineries. The oil refinery sector and the Australian Government are in agreement that a market based approach is the best way to meet Australia's energy needs.

1 Dr John Tilley, Australian Institute of Petroleum (AIP), *Committee Hansard*, Canberra, 30 November 2012, p. 3.

2.5 The Australian Institute of Petroleum (AIP) publication *Downstream Petroleum 2011* graphically depicted Australia's key liquid fuel infrastructure in 2011 as follows:

Figure 2.1 Key liquid fuel infrastructure in Australia



Source AIP, *Downstream Petroleum 2011*, p. 4.

- 2.6 In September 2012, Shell's Clyde refinery closed. Caltex has also announced that its Kurnell refinery will close by mid-2014. This will leave no oil refineries in New South Wales and five domestic refineries in Australia. The Clyde and Kurnell facilities will both be converted to import terminals.
- 2.7 These recent closures and those in the last decade have been attributed to domestic and global trends impacting negatively on Australia's domestic refining competitiveness. Many submitters shared the view expressed by Shell Australia that the 'Australian refining industry has been under pressure and challenged for some time'.²

2 Shell, *Submission 20*, p. 14.

Industry changes

- 2.8 From a global perspective, the AIP outlined that significant growth in refining capacity has outstripped demand for these petroleum products. This has led to a global surplus of these products, which the International Energy Agency (IEA) argued would only be 'balanced out by lower utilisation of refineries and further closure of refineries in OECD countries'.³ The AIP reiterated the IEA assessment that:
- ... over the next five years, we will see a significant structural adjustment occurring through the refining sector as we see rebalancing of supply and demand throughout each region. They are expecting to see a very significantly different global refining crude and product trade over the rest of this decade.⁴
- 2.9 The AIP noted the trend of the last decade towards refinery scale-backs and closures. This trend has been evident in the European and North American refining sectors. The IEA medium term outlook suggests that:
- ... we are likely to continue to see further closures of refineries across the Northern Hemisphere. They have also signalled that, if those refineries do not close, more refineries are going to run at a significantly lower utilisation rate than has been the practice ...⁵
- 2.10 The AIP maintained that these structural adjustments have, and are likely to continue to occur over a longer period of time, allowing the market time to react and adapt.⁶
- 2.11 Many OECD countries have been facing challenges, for example with eight European refinery closures since 2009, and further closures likely. The Australian Competition and Consumer Commission (ACCC) noted the UK Government's acknowledgement that it is facing similar competitive pressures from competition in Europe and Asia.⁷
- 2.12 While industry changes – restructuring and closures in some areas and growth in others – have been occurring internationally, the Construction, Forestry, Mining and Energy Union (CFMEU) contended that as an island continent, attention must be paid to Australia's refining capacity.⁸

3 Dr John Tilley, AIP, *Committee Hansard*, Canberra, 30 November 2012, p. 3.

4 Dr John Tilley, AIP, *Committee Hansard*, Canberra, 30 November 2012, p. 3.

5 Dr John Tilley, AIP, *Committee Hansard*, Canberra, 30 November 2012, p. 20.

6 Dr John Tilley, AIP, *Committee Hansard*, Canberra, 30 November 2012, p. 20.

7 Australian Competition and Consumer Commission (ACCC), *Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia*, December 2012, pp. 54; 265.

8 Mr Graham Larcombe, Construction, Forestry, Mining and Energy Union (CFMEU), *Committee Hansard*, Canberra, 30 November 2012, p. 20.

2.13 The ACCC found that the changes in Australia's refining sector have been in line with international trends. The ACCC outlined that in recent years Australia's refining sector has been characterised by comparatively smaller production volumes and lower profits and rates of return, which it attributed to:

- weaker economic conditions and flat growth
- the impact of large complex refineries in emerging economies, such as Jamnagar in India, with the capacity to refine petrol to Australian standards at competitive prices. Further planned openings of refineries in China and Saudi Arabia are likely to add to the availability of Australian standard petrol
- the ability of independent wholesalers to access storage capacity in import terminals and to import refined fuel at competitive prices.⁹

2.14 The Department of Resources, Energy and Tourism (RET) noted that the majority of Australia's refineries were built in the mid-1950s and mid-1960s. At the time there was a favourable international and domestic environment, which included: limited competitive pressures from other refineries in the region; assistance from state governments; tariff protection for defence and industry investment purposes; and price and demand stability.¹⁰

2.15 However, despite substantial investments in infrastructure and modernising these ageing facilities, the sector has continued to feel the pressures of remaining viable in the current environment. The AIP found that:

The costs of doing business in Australia as well as the costs of meeting tighter regulatory requirements are increasing, with labour and capital costs for refinery construction, operation and maintenance also increasing faster than in competitor countries. This means Australian refineries face increasing competitive pressure from mega-refineries in Asia which have large and increasing cost advantages.¹¹

2.16 The Australian Government's *Energy White Paper 2012* (EWP) noted that the domestic energy sector has been facing structural changes for some time. The EWP stated:

Our gas and liquid fuel markets are also undergoing important structural changes, driven by a closer integration with global

9 ACCC, *Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia*, December 2012, p. xlvii.

10 Department of Resources, Energy and Tourism (RET), *Submission 18*, p. 6.

11 AIP, *Downstream Petroleum 2011*, p. 3.

markets and supply chains, the growing development of new technologies such as electric vehicles and alternative fuels, and expanding sources of supply and demand competition. These factors have introduced new dynamics and transitional pressures in these markets and for some downstream industries (such as plastics and chemicals) that rely on them for fuel or feedstock. The full implications of this have yet to be established and need to be closely monitored.¹²

2.17 The AIP argued that while Australia has not been insulated from the wider global trends and pressures, the necessary structural changes in Australia's refinery operations have occurred in a measured and orderly way to allow the market time to respond effectively by producing additional product supply and ensuring supply security.

2.18 At the roundtable hearing the AIP provided the committee with examples of structural changes to refining in Australia:

Over the past decade the industry has invested nearly \$9½ billion in refineries. That includes over \$3 billion on the Cleaner Fuels program. The industry has had an ongoing process for debottlenecking individual refineries as well as expansion of port handling capacities. We have also invested heavily in energy efficiency and other sustainability opportunities at refineries, and the import terminal infrastructure has been enhanced significantly over the recent decade. By and large, these are factors which have been within the industry's control. However, we note that there are a range of issues that sit outside the industry's ability to pursue further improvements and enhancements in efficiency. Some of those factors are cost related. ... There is also a range of broader economic settings that influence what the industry is able to do. That covers general regulations at federal, state and local level, approval processes, taxation policy et cetera.¹³

2.19 Mr Velins also commented on the changes to Australia's oil refining sector, stating that:

At its peak, Australia had 10 major refineries, including 4 luboil plants, plus several tiny ones, but today only 7, and within several years, no more than 5. Individual refinery capacity is somewhat over 100 000 b/d [barrels a day], a small fraction of the size of regional exporters. Furthermore, Australian refineries have

12 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. xi.

13 Dr John Tilley, AIP, *Committee Hansard*, Canberra, 30 November 2012, p. 3.

shallow berths and hence are unable to use large crude oil tankers, thereby paying more for crude oil freight than regional suppliers.¹⁴

Domestic refining capacity

- 2.20 The Australian refining sector can be viewed as a collection of separate markets. Australian oil refineries operate on a smaller scale than its regional competitors. RET commented that the 'total Australian refinery capacity represents a very small proportion of global and regional capacity'.¹⁵
- 2.21 RET noted the 2012 BP *Statistical Review of World Energy* finding that in 2011, the Asia-Pacific refining capacity was equal to 31.3 per cent of the global capacity. Australia's capacity in 2011 was 2.6 per cent of the Asia-Pacific capacity, and only 0.8 per cent of global capacity.¹⁶
- 2.22 The AIP provided a breakdown of Australia's oil refinery capacity for 2010-11:

Table 2.1 Australian refinery capacity in 2010-11

Location	Refinery	Capacity ML pa (megalitres per year)
WA		
Kwinana	Kwinana (BP)	8300
NSW		
Sydney	Kurnell (Caltex) <i>Closing by mid-2014</i>	7820
Sydney	Clyde (Shell) <i>Closed in September 2012</i>	4990
VIC		
Geelong	Geelong (Shell)	7470
Melbourne	Altona (Mobil)	4640
QLD		
Brisbane	Lytton (Caltex)	6300
Brisbane	Bulwer Island (BP)	5910
Australian total		45 430

Source AIP, *Downstream Petroleum 2011*, p. 5.

- 2.23 Following the closure of the Clyde refinery, the total capacity of Australian refineries is 40 440 ML per year. RET noted that Australia's total production of petroleum products in 2011-12 was 36 192 ML, which

14 Mr Eriks Velins, *Submission 1*, pp. 2-3.

15 Department of Resources, Energy and Tourism (RET), *Submission 18*, p. 9.

16 RET, *Submission 18*, p. 9.

included 15 390 ML of automotive gasoline, 12 212 ML of automotive diesel oil and 5 452 ML of jet fuel.¹⁷ RET explained that:

A refinery's capacity is the volume of fuel that could be produced through distillation of crude oil operating non-stop at an optimum utilisation rate. Generally capacity is not achieved, due to shutdowns and inherent difficulties in balancing crude inputs with demand for outputs. In some cases capacity can actually be exceeded – for example, by increasing the use of blend components, which do not need to be distilled.¹⁸

2.24 The closure of the Caltex Kurnell refinery in 2014 will reduce Australia's total domestic capacity to 32 620 ML per year. The EWP found that the combined effect of the Clyde and Kurnell refineries would reduce Australia's maximum refining capacity by 28 per cent.¹⁹

2.25 The ACCC observed that Shell may also be reviewing its Geelong refinery operations.²⁰ In its December 2012 monitoring report, the ACCC stated:

Shell reported that the future of the refinery is 'borderline' and may be impacted when the further capital investment is required to maintain reliability. As the Geelong refinery requires imports of crude to feed production, a switch to directly importing petrol is not a big jump, according to Shell, commenting that there is no structural reason to keep the facility operating.²¹

2.26 The 2011 *National Energy Security Assessment* (NESA) found that 'regional refinery growth was considered a risk to domestic refining capacity as domestic demand growth was increasingly met by imports from these large mega-refiners'.²²

2.27 RET noted that the demand for liquid fuels in Australia has 'risen steadily over the past decade, and consumption of refined petroleum products is projected to continue to grow'.²³ The liquid fuel market includes feedstock and fuels, which covers crude oil, condensate, liquefied petroleum gas (LPG), refined petroleum products such as fuels (i.e. petrol, diesel and jet fuel), and alternative transport fuels such as biofuels (ethanol and

17 RET, *Submission 18*, p. 7.

18 RET, *Submission 18*, p. 7.

19 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 120.

20 ACCC, *Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia*, December 2012, pp. 186; 263.

21 ACCC, *Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia*, December 2012, p. 265.

22 Australian Government, *National Energy Security Assessment*, December 2011, p. 10.

23 RET, *Submission 18*, p. 3.

biodiesel), compressed natural gas (CNG), and liquefied natural gas (LNG).²⁴

- 2.28 In 2010–11 Australia imported around 83 per cent of its crude oil and other refinery feedstock, primarily from Malaysia, Indonesia and the United Arab Emirates.²⁵ Petroleum product imports are sourced primarily from Singapore (59 per cent in 2010–11).²⁶ Shell noted at the roundtable hearing that a lot of the product described as coming from Singapore has been transhipped through Singapore and may have originated elsewhere, such as Taiwan, Thailand or China.²⁷

Challenges to Australia's competitiveness

Domestic considerations

- 2.29 The major oil companies all provided evidence to the committee that Australian domestic oil refineries are operating at a competitive disadvantage to other refineries in the region.
- 2.30 The pressures of high local costs, the strength of the Australian dollar and the relative age of domestic facilities, are having significant impacts on Australia's refineries.
- 2.31 The CFMEU argued that the high Australian dollar is having an impact, and is 'hurting all manufacturing'.²⁸ Caltex also claimed that the high Australian dollar is having an impact on the refining sector, stating that:
- Our margin, which is the difference between what we pay for crude and what we get for our products, is set in US dollars. So the world of crude oil is a US dollar world and the world in which we sell our products is a US dollar nominated world as well. We have talked previously about import parity. We have a US dollar margin and we have A dollar costs. So, to the extent the A dollar costs chew into that margin it leaves less for the refiner.²⁹
- 2.32 Shell asserted that labour costs comprise around 60 to 70 per cent of fixed costs for refineries, and commented that Australian labour costs are higher than many of its regional competitors:
- We would see that the typical cost for employees in Australia is around 2.3 times higher than Korea and around seven times

24 RET, *Submission 18*, p. 3.

25 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 120.

26 AIP, *Downstream Petroleum 2011*, p. 5.

27 Mr Andrew Smith, Shell, *Committee Hansard*, Canberra, 30 November 2012, p. 15.

28 Mr Peter Colley, CFMEU, *Committee Hansard*, Canberra, 30 November 2012, p. 11.

29 Mr Gary Smith, Caltex, *Committee Hansard*, Canberra, 30 November 2012, p. 39.

higher than India. The cost of running a refinery in Australia, of which labour is one component, but only one component, has increased about three times over the last ten years. Part of that is the Australian dollar, but part of it is the underlying wage costs.³⁰

- 2.33 The CFMEU acknowledged that wages are a cost factor, but argued that 'in capital-intensive businesses labour costs are a minority – often a small minority – of operating costs, so they are not the biggest factor determining what is going on in refineries in Australia'.³¹ Labour costs as a component of refining costs are discussed in Chapter 5 on employment issues.
- 2.34 Given the nature of the petroleum products, shipping is at the core of international movements of these products. During the inquiry, submitters commented on shipping arrangements for transporting oil, including noting the effects of cabotage – a legal arrangement to reserve the right to transport goods or passengers within Australia's coastal waters to Australian carriers.
- 2.35 While refiners did not supply any indicative cost figures on cost implications of shipping regulation in Australia, the major oil refiners claimed that current shipping regulation in Australia restricts shipping flexibility and impacts on their costs. Mobil Oil argued that by restricting their ability to use foreign flagged vessels to move between Australian ports added a cost to that domestic movement, which resulted in making it more cost effective to export rather than redistribute supply nationally.³² Caltex concurred that anything that increases the costs reduces company net returns.³³
- 2.36 In its December 2012 report *Monitoring of the Australian petroleum industry*, the ACCC found that the Australian refining sector had recently recorded comparatively low net profits. It commented that as domestic petrol prices are based on import parity, Australian refiners and suppliers have a limited ability to pass on costs that are 'out of line with international best practice for refinery production'.³⁴

Regional competition

- 2.37 It is generally acknowledged that large refineries in the Asian region represent a competitive challenge to Australia's refineries. Mobil Oil

30 Mr Andrew Smith, Shell, *Committee Hansard*, Canberra, 30 November 2012, p. 17.

31 Mr Peter Colley, CFMEU, *Committee Hansard*, Canberra, 30 November 2012, p. 37.

32 Mr Andrew Warrell, Mobil Oil, *Committee Hansard*, Canberra, 30 November 2012, p. 16.

33 Mr Gary Smith, Caltex, *Committee Hansard*, Canberra, 30 November 2012, p. 16.

34 ACCC, *Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia*, December 2012, p. 265.

observed that 'the true competition in Australian refining is not the other Australian refineries but the much larger refineries elsewhere'.³⁵

2.38 The Nelson Complexity Index is a measure of secondary conversion capacity in comparison to the primary distillation capacity of any refinery. It provides an insight into refinery complexity, indicating investment intensity, cost index and value of additional potential of a refinery. It also allows for some degree of comparison between refineries. Shell noted that Australian refineries were operating at around the eight or nine index mark, in contrast to the Asian environment where the average has risen from 6.5 to over 10, with the Jamnagar refinery in India having an index of 14.³⁶

2.39 When comparing Australia's refineries with those in Asia, the AIP commented that:

In terms of size, all the [Australian] refineries sit in the range of 4½ to 8½ thousand megalitres per annum, which is a capacity of about 80,000 to 145,000 barrels a day. By comparison with other refineries around the Asian region, the Australian refineries are relatively small, sitting in the mid-range of the pack. Jamnagar refinery in India is one of the largest refineries. It has a total capacity of about 1,200 thousand barrels a day processing – substantially bigger than the total Australian processing capacity.³⁷

2.40 Further, the AIP found that other factors are also affecting Australia's refining sector:

In recent years the surplus refining capacity in the Asian region has forced refiner margins to very low levels which are exacerbated by high Australian dollar exchange rates. While all refineries will face low margins for some years to come, many Asian refineries are supported by national governments that are pursuing refining self-sufficiency objectives rather than commercial imperatives.³⁸

2.41 Similarly, Shell commented that:

Over the last 10 years the operating costs of running smaller scale refineries in Australia have grown to be as much as running a refinery two to three times their size in Singapore or the Middle East.³⁹

35 Mr Andrew Warrell, Mobil Oil, *Committee Hansard*, Canberra, 30 November 2012, p. 4.

36 Mr Michael Pope, Shell, *Committee Hansard*, Canberra, 30 November 2012, p. 21.

37 Dr John Tilley, AIP, *Committee Hansard*, Canberra, 30 November 2012, p. 2.

38 AIP, *Downstream Petroleum 2011*, p. 3.

39 Shell, *Submission 20*, p. 9.

2.42 BP Australia currently has refineries operating in Perth and Brisbane. It observed that:

Some of our locally based competitors have closed, or are closing their refineries. While not privy to their decision making it is BP's experience that Australian refining does suffer a competitive *disadvantage* which is born from a higher operating cost-base and lack of economies of scale compared to regional competitors.

Whilst the materiality of these higher costs present themselves in a number of ways they are dominated by labour costs, the relative age and scale of Australian refinery assets and the high Australian dollar.⁴⁰

2.43 Other submitters also agreed that Australian facilities are facing constraint challenges. For example, Mr Eriks Velins commented that:

The refineries, albeit debottlenecked and upgraded to meet new product specifications, have grown old, with no longer an ability to reach globally competitive economies of scale due to the low growth in local demand and an inability to compete in the major product export markets.⁴¹

2.44 The AIP described Australian refineries as being affected by 'legacy constraints', and commented that:

They were designed to meet a particular domestic crude supply and demand set of fundamentals – that is, a sweet crude to be processed with a high focus on petrol as opposed to diesel. The new Asian refineries are significantly more complex in their operations than the Australian refineries. That provides a range of opportunities to process a much wider range of crudes. That also enables them to process crudes more intensively than the Australian refineries can in general and capture a much wider range of opportunities to enhance refinery profitability.

In relative terms, the operational and construction costs in the refining sector are higher in Australia than across Asia, and the Australian refineries are challenged by having a higher energy intensity for the same level of complexity in comparison with the Asian refineries.⁴²

40 BP, *Submission 13*, p. 7.

41 Mr Eriks Velins, *Submission 1*, p. 2.

42 Dr John Tilley, AIP, *Committee Hansard*, Canberra, 30 November 2012, p. 3.

- 2.45 Mobil Oil agreed with the AIP assessment that Australia is facing considerable competitive challenges in the region. It commented that:

We have a high cost of compliance and higher taxes. We have high and rising costs throughout our infrastructure and particularly in utilities – electricity and water. We are subject to higher labour costs. Even though there has been some very good work in improving productivity, we still have very high absolute labour costs compared to the rest of the region and, of course, we have a high Australian dollar.⁴³

- 2.46 Caltex operates refineries in Sydney and Brisbane. Following a review of its refineries, Caltex decided to close the Kurnell refinery in Sydney by mid-2014, and convert it into an import facility. Its Lytton refinery in Brisbane will continue to operate.

- 2.47 In its submission to the inquiry, Caltex advised that it had carried out an exhaustive review of its two refineries. It contended that:

These refineries lost about \$200 million (EBIT) in 2011, with the greater part of the loss arising from the Kurnell refinery. Like many manufacturing plants, Caltex's refineries face strong import competition and increasing costs.

Caltex has not been able to find an economically attractive way to make the Kurnell refinery sufficiently competitive in the Asian market. Caltex has therefore decided to close Kurnell's refining facilities in the second half of 2014 and convert the site to a major import and fuel storage terminal.

Caltex's Lytton refinery in Brisbane will continue operating as the company has identified a range of opportunities to improve performance, and a number of potential targeted incremental investment options, to drive sustained improvement.⁴⁴

- 2.48 Caltex observed that all refineries are different in terms of capabilities and their economics, and contended that even government intervention, such as providing a 'tax holiday', would not have changed the company's decision about the Kurnell refinery.⁴⁵

- 2.49 Shell's downstream businesses supply around 25 per cent of Australia's liquid petroleum requirements. Shell agreed with industry assessments that domestic refineries are under pressure from the mega refineries in the region, which 'have lower operating costs and can produce large

43 Mr Andrew Warrell, Mobil Oil, *Committee Hansard*, Canberra, 30 November 2012, p. 4.

44 Caltex, *Submission 12*, p. [1].

45 Mr Gary Smith, Caltex, *Committee Hansard*, Canberra, 30 November 2012, p. 17.

quantities of high quality products from cheaper crude oil and feedstocks'.⁴⁶

2.50 In making its decision to close its NSW Clyde refinery and convert the facility to an import terminal, Shell argued that it:

... not only recognised these global pressures and that Clyde was unable to compete in this market but also that fuels to Australian specifications are more readily available in the quantities required to service this important NSW market.⁴⁷

2.51 When contrasting the Clyde refinery to the large refinery in Singapore, Caltex argued that the Singapore refinery was 'an incredibly more flexible machine', that 'could make products for a range of different countries; it could adjust its schedules on a much more frequent basis'.⁴⁸

2.52 Shell indicated that a number of factors influenced the Clyde closure:

- There is growing excess refining capacity in our region;
- Clyde is a small scale refinery in comparison to its regional competition and was not able to generate the returns needed to justify further investment (For example, Clyde competed with regional refineries which produce 1.2M barrels per day versus 70,000 barrels per day at Clyde); and
- Shell can access adequate supply of Australian-grade products in the marketplace.⁴⁹

2.53 Further, Shell argued that:

Each refinery is different but one thing remains the same - a refinery needs to generate a positive cash flow to justify ongoing operation and the significant amount of reinvestment required year on year. Just covering costs is not sufficient. ...

Additionally the notion of "cross subsidisation" from other more profitable segments of our business is flawed as there is no business reason to do this given the access to adequate supply of fuel products in highly "liquid" markets and, from an internal perspective, each Shell business unit is expected to perform and contribute to the overall business. Through cross subsidisation you have the potential to reduce the profitability of the overall business thereby further reducing the ability to access available capital.⁵⁰

46 Shell, *Submission 20*, p. 4.

47 Shell, *Submission 20*, p. 5.

48 Mr Andrew Smith, Shell, *Committee Hansard*, Canberra, 30 November 2012, p. 15.

49 Shell, *Submission 20*, p. 5.

50 Shell, *Submission 20*, p. 5.

- 2.54 Shell submitted that its analysis showed Clyde refinery's long-term projected cash flows as negative, as the refinery's costs have 'almost doubled in the last decade and in US dollar terms they had almost tripled'.⁵¹
- 2.55 Mobil Oil argued that Australia's six remaining oil refineries are 'small by regional and global standards and suffer economies of scale disadvantages versus many large regional refineries'.⁵² It stated:
- Many of these large regional refineries are newer and more fuel efficient and have more sophisticated processing facilities than Australia's domestic refineries. Regional refining capacity is increasing (expansions or new builds) at a rate which currently exceeds product demand growth and this is depressing refinery margins. This trend is not expected to change before the latter part to this decade.⁵³
- 2.56 Mobil Oil's Port Stanvac refinery in South Australia ceased operations in 2003, and was permanently closed in 2009. The AIP noted that as one of the smallest refineries in the region, the Port Stanvac refinery could not compete against the larger and more sophisticated Asia-Pacific refineries.⁵⁴ The facility will be demolished and the site prepared for future industrial use.
- 2.57 Mobil Oil's remaining refinery, the Altona refinery in Melbourne, is a key part of Victoria's energy supply chain, providing around 50 per cent of the state's petroleum needs. It continues to operate in a 'very challenging business environment, facing substantial competition from overseas refineries which have cost and scale advantages not available to Australian operators'.⁵⁵ Mobil is also one of the largest importers of petroleum fuels into Australia.
- 2.58 Looking forward, Mr Velins observed that there 'is no incentive for any oil company to invest in expansion of its refinery, as that can never be large enough to gain economies of scale'.⁵⁶
- 2.59 However, decisions to close refineries should be carefully considered, because, as Mobil Oil cautioned:
- Once refinery facilities are shut and demolished they are essentially gone for good as it is extremely difficult to envision a
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51 Shell, *Submission 20*, p. 5.

52 Mobil Oil, *Submission 17*, p. 2.

53 Mobil Oil, *Submission 17*, p. 2.

54 AIP, *Downstream Petroleum 2011*, p. 5.

55 Mobil Oil, *Submission 17*, p. 5.

56 Mr Eriks Velins, *Submission 1*, p. 5.

business case for the establishment of a new refinery in Australia in the foreseeable future, particularly with the value of the A\$ and labour costs as they are today.⁵⁷

- 2.60 The Business Council of Australia did not support government intervention to sustain unprofitable businesses that operate in the presence of effective competition.⁵⁸
- 2.61 While discussion at the roundtable hearing focused on contractions in the domestic refining industry, Mobil Oil argued that while it would be tough, a future for the Australia's refining sector is possible.⁵⁹
- 2.62 Caltex commented that it was taking an 'asset by asset' approach to its refining operations. While the Kurnell refinery was not viable, it intends to explore investments in its Lytton facility to improve its competitive position.⁶⁰

Conclusion

- 2.63 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. 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. The Australian Institute of Petroleum (AIP) noted that 'we are likely to continue to see further closures of refineries across the Northern Hemisphere'. Since 2009 eight European refineries have closed with further closures likely. Of these closures, two have been in the UK.⁶¹
- 2.64 The committee recognises that Australia is facing the same competitive pressures and consequent structural change as that occurring in the Northern Hemisphere. Evidence shows that Australian refineries are not competitive compared to the new and expanding mega refineries in Asia. The domestic context of high operating costs, ageing facilities, increasing sea miles for the transport of crude to the refineries, shallow berths which 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

57 Mobil Oil, *Submission 17*, p. 4.

58 Business Council of Australia, *Submission 8*, p. 1.

59 Mr Andrew Warrell, Mobil Oil, *Committee Hansard*, Canberra, 30 November 2012, p. 31.

60 Mr Gary Smith, Caltex, *Committee Hansard*, Canberra, 30 November 2012, p. 31.

61 United Kingdom Petroleum Industry Association, *The Refining Industry in the UK*, June 2012, www.ukpia.com.

- closure of certain domestic refineries that were no longer commercially competitive.
- 2.65 Australia's proximity to the Asian region poses some challenges for domestic refineries, but it also provides opportunities to take advantage of Asia's surplus refining capacity and to continue to strengthen supply chains in the region. These relationships help ensure a reliable and secure oil supply for Australia.
- 2.66 It should be noted that while Australia has both crude oil reserves and a refining capacity it is not self-sufficient. In 2010–11 Australia imported around 83 per cent of its crude oil and other refinery feedstock. It has and continues to import both crude oil and refined fuels. Following the closure of Clyde and Kurnell, Australia will refine 50 per cent of its fuel needs onshore, predominantly from imported crude.
- 2.67 The importation of refined fuels provides Australian consumers with access to fuels refined from types of crude oil that could not be refined in Australian refineries.
- 2.68 The committee notes that the changes in the oil refinery industry in Australia reflect an orderly transition in response to global trends. They should not be seen as a lack of commitment by the individual companies to the Australian market. Each refinery closure is matched by a corresponding investment in import terminal infrastructure that uses the refinery's distribution networks and infrastructures to deliver the refined fuel. During the hearing, Shell advised that Australia will be a growth centre for Shell, globally. Shell noted that it has made significant investments in exploration, development and supply of liquefied natural gas and condensates. It employs about 2 500 people in Australia, and has plans for significant growth.
- 2.69 It should be noted that there is a solid foundation for the reliable supply of liquid fuels. The Energy White Paper (EWP) commented that 'our lack of oil self-sufficiency and the prospect of further refinery rationalisation does not in itself compromise or reduce our energy security'. As previously stated, it is essential to have diversity of supply. Going forward this will consist of some refining capacity and the certainty of international supply through having a diversity of supply chains and access to well-functioning global markets. This approach provides flexibility and security of supply.
- 2.70 While Australia is unlikely to establish new refineries, it is desirable to have some refining capacity. Mobil Oil noted that 'some level of domestic refining capacity is highly desirable to provide additional flexibility to cope with the short term product supply interruptions or imbalances that can occur'. Similarly, Caltex noted that when it announced the closure of the Kurnell refinery, it did indicate a future for its Lytton refinery. The

EWP also agreed that 'a domestic refining capacity presence provides Australia with a limited ability to process domestically produced crude in-country, and a degree of supply flexibility and reliability'.

- 2.71 While companies acknowledge that refining capacity is desirable, all agree that it is extremely unlikely that market conditions and economies of scale would warrant the building of a new refinery in Australia. That leaves the nation with five aging refineries under increasing competitive pressure. The committee notes that during the last decade, the oil industry has invested over \$9 billion in those refineries.
- 2.72 The committee noted observations about the general future of the oil refining industry in Australia, in particular whether the closures were part of a trend that would see Australia lose its refining capacity altogether. Various stakeholders questioned whether such a trend, if it eventuated, would be in the national interest.
- 2.73 The most pessimistic view was that this is the beginning of the end of Australian refining, and the most optimistic view was that there is a future for Australian refining, albeit under increasing competitive pressure. The committee also notes the almost universal agreement that given global competition and the inability to generate competitive economies of scale in Australia, we are unlikely to see new refineries opened. Once closed, a refinery is very unlikely to be re-opened, particularly as a refinery's location, port and storage facilities and distribution networks make conversion to import facilities a profitable option.
- 2.74 During the hearing, some groups sought guidance on whether there was a minimum level of refining capacity required to meet Australia's economic needs. The EWP did confirm that the domestic refining presence provides Australia with a limited ability to domestically refine crudes in-country, and several witnesses confirmed that there are advantages in having a domestic refining capacity.
- 2.75 However, the energy industry is in a state of change, both with the global rationalisation of the traditional liquid fuel industry, and the growth in alternative and new types of energy sources. Australia's liquid fuel needs should be seen as one part of our energy future, albeit an extremely important one.
- 2.76 Overall, Australia is a net exporter of energy and we have a positive energy future. As the world's ninth-largest energy producer, Australia is the largest coal exporter and third largest uranium producer in the world. In future years, we are projected to be the world's second largest liquefied natural gas exporter. The EWP notes that as 'a near neighbour to Asian economies, we are well placed to cement our role as a leading energy supplier to those nations and to assist their economic development'.

Domestic economic impacts of declining refining capacity

Introduction

- 3.1 Australia's oil refining capacity will decrease with the closure of the Clyde and Kurnell refineries. Some groups have cautioned that a reduction in domestic oil refining capacity could disadvantage Australia and have adverse economic impacts.
- 3.2 The Australian Government's *Energy White Paper 2012* (EWP), however, provides a more optimistic outlook. The EWP argues that effective supply chains to a range of competitive markets will provide for Australia's fuel needs. At the same time the EWP suggests that the aim of self-sufficiency is misplaced and could be a costly goal.
- 3.3 This chapter focuses on the domestic economic impacts of declining refining capacity. In particular, this includes a discussion of the adequacy of supply chains and the price outcomes for consumers. The broader energy security issues are dealt with in Chapter 4.
- 3.4 The impacts on employment arising from declining refining capacity are examined in Chapter 5.

Background

- 3.5 In June 2012 Shell announced that it was closing the Clyde refinery and converting it and the Gore Bay terminal into fuel import facilities by mid-2013. Similarly, in July 2012 Caltex announced that it was closing the Kurnell refinery and converting it to a major import terminal. The EWP notes that following these closures, Australia's maximum refining capacity

will decline by around 28 per cent to 32 620 ML. Domestic refiners will produce just over half the fuel consumed in Australia with the remainder being imported.¹

- 3.6 During the past decade, refining companies have invested almost \$9 ½ billion in Australian refineries. The Australian Institute of Petroleum (AIP) stated:

The industry has had an ongoing process for debottlenecking individual refineries as well as expansion of port handling capacities. We have also invested heavily in energy efficiency and other sustainability opportunities at refineries, and the import terminal infrastructure has been enhanced significantly over the recent decade. By and large, these are factors which have been within the industry's control. However, we note that there is a range of issues that sit outside the industry's ability to pursue further improvements and enhancements in efficiency. Some of those factors are cost related. Some of them relate to the challenges that Australia would confront in terms of examining the possibility of a single mega-refinery in this country – whether it is the footprint for the refinery, the cost disadvantages or the challenges we would confront with distribution of production from such a refinery.²

- 3.7 Australian refining operations face increased competitive pressure from Asian mega-refineries. The EWP stated:

Australia's refining industry is undergoing structural change in response to strong competitive pressure from larger and newer Asian refineries, which continue to lower the break-even benchmark that our refineries compete against. The domestic pressure of high local costs, coupled with a high exchange rate, is expected to keep Australian refineries under pressure for some time.³

- 3.8 The EWP noted that Asia is increasingly becoming the global refining and trade centre. The EWP commented that 'significant net additions to Asia-Pacific export refining capacity are forecast to come online, including more refined fuels from India that meet Australian standards', which will maintain a surplus in regional refining capacity through to 2020.⁴

1 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 120.

2 Dr John Tilley, Australian Institute of Petroleum (AIP), *Committee Hansard*, Canberra, 30 November 2012, p. 3.

3 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 125.

4 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 125.

- 3.9 The EWP noted that, in relation to reduced refining capacity in Australia, structural change is likely to undergo an orderly transition ‘so that the market can respond accordingly to ensure that supply security is maintained and supplier market shares are preserved’.⁵ In addition, the EWP indicated that ‘in order to continue to meet market demand, refinery closures are very unlikely to occur until alternative supply capacity has been secured’, as is the case with the Clyde and Kurnell closures.⁶
- 3.10 The EWP pointed out that refinery closures are expected to be replaced by import terminals. The EWP stated:
- Australia’s refineries are in key geographical locations and have access to existing distribution infrastructure (pipelines or roads) to meet market demand. Therefore, any future refinery closure decisions are expected in most cases to be accompanied by decisions to convert the refineries to import terminals, maintaining these supply connections.⁷
- 3.11 The change from refining to imports is expected to lead to changes in inventory levels with overall stocks reduced when a refinery is converted into a terminal. However, the EWP commented that the ‘drop in overall inventories associated with a refinery closure will have little, if any, impact on Australia’s supply security’.⁸
- 3.12 In any economic consideration of the oil refinery industry it is essential to discuss environmental impacts and, in particular, fuel quality standards. The Fuel Quality Standards Act 2000 regulates fuel supplied in Australia in order to reduce the level of pollutants and emissions arising from the use of fuel that may cause environmental and health problems. In addition, the Act encourages the adoption of better engine technology and emissions control technology. The EWP stated:
- Australia’s fuel quality standards have improved urban air quality, facilitated the introduction of new engines and fuel-efficient technologies, and reduced greenhouse gas emissions....
- Any changes to fuel specification standards will need to consider Australia’s circumstances and be subject to rigorous economic analysis of the costs and benefits to industry, consumers, and society more broadly, including consideration of domestic refining impacts and environmental and public health outcomes.⁹

5 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, p. 125.

6 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, p. 125.

7 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, p. 127.

8 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, p. 127.

9 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, pp. 128-129.

- 3.13 The Commonwealth Department of Sustainability, Environment, Water, Population and Communities administers the Act, with RET providing input through an advisory committee. The Act covers the entire supply chain and involves a team of Commonwealth inspectors throughout Australia taking samples along the supply chain. In addition, relevant companies who are fuel producers or importers are required to report annually on whether the produced or imported fuels meet the Australian Standards for refined fuel products.
- 3.14 The downside to introducing more rigorous fuel quality specifications is that it can place additional constraints on domestic refineries. Shell stated that 'the window of capability of Australian refineries has reduced in the last 10 years, largely due to the introduction of new product quality specifications, which have introduced new constraints, not just sulphur, which means that the flexibility of refineries has materially reduced, although some refineries have invested in new capability to try to mitigate that'.¹⁰
- 3.15 During the hearing, some concerns were raised about the quality of fuel arriving in Australia. The CFMEU stated:
- There is no guarantee, at times, when it arrives at our ports that it meets Australian standards. We know of incidents, even recently, where boats have had to go back to Singapore with finished product on them because they did not meet the grade. The problem with that is that, once upon a time, having a refinery at Clyde, they would bring it through. They would go through the refining process again and get it to grade. That does not happen anymore. As the industry declines, that will become a much more prominent problem.¹¹
- 3.16 Shell noted that ten years ago it was difficult to buy large quantities of finished product that met Australian specifications. However, this was changing with the rise of the new large refineries. Shell stated:
- One of the things that happened as these new large refineries were built was that they were capable of making Australian-specification product – and the new ones that get built are. So we have changed from a world where, whilst economically the refineries were not perhaps that great, you could not buy large quantities of product for Australia internationally. Now you can, and that is a big change.¹²
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10 Mr Michael Pope, Shell, *Committee Hansard*, Canberra, 30 November 2012, p. 30.

11 Ms Lorraine Usher, CFMEU, *Committee Hansard*, Canberra, 30 November 2012, p. 31.

12 Mr Andrew Smith, Shell, *Committee Hansard*, Canberra, 30 November 2012, pp. 29-30.

- 3.17 In Australia premium unleaded petrol, which is expected to be the base grade petrol for new vehicles, is equivalent to the Euro 4 standard. In the case of diesel the Australian standard equates to the Euro 5 standard. These Euro standards related mainly to the reduction in sulphur in the fuel, but also cover other production parameters.¹³ Projections of global petrol demand suggest that by 2020 a significant majority of demand will be for petrol with a sulphur content of less than 10 parts per million (ppm), as compared to 2011 that saw approximately half of the petrol demand with a sulphur content of between 10 to 50 ppm. A smaller proportion of demand also included petrol with sulphur levels of 51 to 500 ppm, and some with levels of 500 ppm. It is anticipated that petrol in this latter category will be phased out by 2025.¹⁴
- 3.18 Industry analysis indicates that other countries in the Asia-Pacific region are similarly mandating higher fuel quality standards. Japan, Hong Kong, Singapore and New Zealand are already observing Euro 4 or 5 standards for petrol and diesel products. Other countries such as China, India and Malaysia are working towards these standards.¹⁵

Discussion

Will supply chains meet requirements?

- 3.19 The EWP is confident that the diversity of international supply chains will meet Australia's refined fuel needs and cover our reduction in refining capacity. A key objective in meeting our energy security is to have well-functioning and competitive markets. The EWP notes that this requires effective policy and regulation which can:
- anticipate and respond to changing energy demand and supply needs
 - deliver timely investment in the energy system, from upstream energy resource development to customer supply
 - access a diversity of supply chains
 - respond flexibly to energy shocks through energy substitution, diversion of energy supplies, and demand reduction responses
 - allow free-forming competitive prices, which are an efficient balancing mechanism and a stimulus for the development of additional supply and supporting infrastructure.

13 AIP, *Downstream Petroleum 2011*, p. 14.

14 International Fuel Quality Centre, *Worldwide Fuel Specifications 2012*, p. 6.

15 AIP, *Downstream Petroleum 2011*, p. 15.

3.20 As a demonstration of the markets' ability to cope and respond to oil supply disruption, the EWP draws attention to the way markets responded to the 2011 Libyan oil disruption. The EWP stated:

In the case of Libya, 1.2 million barrels per day of oil was lost from global supply. The market responded by increasing production from other sources, particularly Saudi Arabia and other countries in the Organization of the Petroleum Exporting Countries (OPEC). This effectively replaced the loss of Libyan oil supplies and allowed markets to continue to meet global demand. This market response was supported by the IEA Libya Collective Action, in which IEA member countries released oil stocks to add short-term liquidity to the market, and cushioned the economic impact of surges in oil prices. Australian fuel prices reflected movements in the global market, and we did not suffer any disruption to our liquid fuel supply.¹⁶

3.21 The National Energy Security Assessment made the point that energy security did not depend on energy independence or self-sufficiency but rather the growing interconnectedness of the global energy trade which provides Australia with flexibility and energy security. The EWP concluded that:

Our lack of oil self-sufficiency and the prospect of further refinery rationalisation does not in itself compromise or reduce our energy security. ... [Australia's] liquid fuel security is expected to remain high because of our access to reliable, mature and highly diversified international liquid fuel supply chains.¹⁷

3.22 The Australian Institute of Petroleum (AIP) shared this assessment commenting that it 'expects that the longer-term robustness of Australia's supply chains will not be significantly affected by recent decisions to convert refineries into bulk fuels importing facilities'.¹⁸ Similarly, Mobil Oil stated:

The Australian petroleum industry has adequate fuel supply infrastructure and robust supply chain processes in place to ensure that it can continue to reliably meet local fuel demands, as it has done over many decades. The closure of a further one or more local refineries should not, of itself, pose a threat to reliable domestic fuel supply in the long term.¹⁹

16 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 53.

17 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 53.

18 AIP, *Submission 14*, p. 12.

19 Mobil Oil, *Submission 17*, p. 3.

- 3.23 Mobil Oil, however, noted that, ‘some level of domestic refining capacity is highly desirable to provide additional flexibility to cope with the short term product supply interruptions or imbalances which can occur’.²⁰ During the hearing, Mobil Oil stated:
- A lot of the discussion over the course of today has seemed to me to be working on the view that there is no future for the refining industry in Australia. I do not agree with that, fundamentally. I think there is a business for refining in Australia. It is important to the economy. These are high-tech, high-skilled jobs that are very important for the long-term viability and vibrancy of the Australian economy. It is important from an education perspective. It is important from an infrastructure perspective.²¹
- 3.24 Similarly, Caltex noted that when it announced the closure of the Kurnell refinery, it did indicate a future for its Lytton refinery commenting that ‘we can see a pathway to a sustainable future for that asset’.²²
- 3.25 In relation to this point, the EWP did note that a domestic refining capacity does provide Australia with a limited ability to process crude oil. The EWP stated:
- A domestic refining presence provides Australia with a limited ability to process domestically produced crude in-country, and a degree of supply flexibility and reliability. While there is the prospect of some further reduction in Australia’s refining capacity, the underlying competitiveness of most Australian operations, along with the strategic advantages that some in-country refining presence offers, suggests that the prospect of a severely reduced or no refining capacity in Australia over the next decade is very remote.²³
- 3.26 The Department of Resources, Energy and Tourism (RET) noted that ‘highly diversified supply has combined with pro-active supply chain management by companies to mitigate the effects on reliability of short-term events such as refinery outages, shipping delays or unexpected spikes in demand’.²⁴
- 3.27 The Australian Workers’ Union (AWU) believes the government should not be placing as much reliance on Asian refining capacity. The AWU cautions that relying on Asian refineries is ‘highly questionable as these

20 Mobil Oil, *Submission 17*, p. 3.

21 Mr Andrew Warrell, Mobil Oil, *Committee Hansard*, Canberra, 30 November 2012, p. 31.

22 Mr Gary Smith, Caltex, *Committee Hansard*, Canberra, 30 November 2012, p. 31.

23 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, p. 126.

24 Department of Resources, Energy and Tourism (RET), *Submission 18*, p. 15.

Asian refiners may be unsustainable – and cut off from global supply chains of crude oil'.²⁵ While the AWU has not proposed the need for self-sufficiency it has suggested the need for greater self-reliance. The AWU stated:

It is unclear how closure of domestic refining capacity adds to supply diversity when it is accompanied by increasing reliance on supplies sourced from offshore vulnerable to disruption, impacting directly on Australian consumers but beyond our reach to influence.²⁶

3.28 The Australian Manufacturing Workers' Union (AMWU) also argued that there were potential problems with the loss of domestic refining capacity noting that 'OECD countries are concerned about loss of energy sovereignty and the consequent increased dependence on oil imports'.²⁷ The AMWU commented that the risks associated with greater dependence on imports include:

- the potential for upward pressure on raw materials and suppliers resulting in higher prices flowing through the supply chain;
- less interaction with customers and feedback thus less capacity to adapt quickly to product requirements - there remains a shortfall in Asia of refineries that meet Australian specifications; and perhaps most significantly
- the concentration of risk of supply disruption in regions subject to natural and geo-political shocks and upheavals.²⁸

3.29 In contrast to these views, other groups were more optimistic about the advantages of diverse supply chains. The Business Council of Australia stated:

The market for petroleum products is a transparent and competitive market with both domestic and international participants. There is access to a diverse range of sources of supply which should be capable of meeting Australia's demand for petroleum products.²⁹

3.30 Similarly, Caltex commented that 'Australia can access diverse and well-established supply chains, so any reduction in refining capacity will be offset by sourcing refined product via import facilities'.³⁰ Caltex noted that

25 Australian Workers' Union (AWU), *Submission 4*, p. 11.

26 AWU, *Submission 4*, p. 13.

27 Australian Manufacturing Workers' Union (AMWU), *Submission 7*, p. 3.

28 AMWU, *Submission 7*, p. 3.

29 Business Council of Australia, *Submission 8*, p. 2.

30 Caltex, *Submission 12*, p. [8].

‘current supply chains are highly effective in meeting liquid fuel requirements, so there will be no decrease in supply reliability adversely affecting fuel using industries or private consumers’.³¹ In relation to the replacement of refining capacity with terminal facilities, Caltex stated:

With a reduction in local oil refining capacity, there is a need for good terminal and other infrastructure to ensure supply reliability. This will be provided efficiently by the private sector, as there is a commercial driver to maintain reliable supply to the market. Caltex is well progressed with its planned investments at Kurnell to ensure supply reliability. The company has two development applications in progress which are recognised as State significant developments. The first is a development to upgrade the dedicated Kurnell port and berthing facilities to enable larger ships to import product for the NSW market. The second is the development to convert the refinery into a terminal to ensure that there is adequate tankage for imported fuels.³²

3.31 BP was similarly optimistic about accessing international supply chains to meet domestic market needs. BP stated:

Certainly Australia is neither self-sufficient in crude oil nor refining capacity, and we will be increasingly reliant on international markets and overseas suppliers. However to provide some context, BP currently imports more than 100 cargoes of refined product into Australia each year and we do not envisage significant problems with increasing these volumes due to a consolidation of the refining industry and/or market growth.³³

3.32 Mr Eriks Velins commented that the present supply chains, which are mixtures of own refining and crude and refined product imports, ‘are safe, secure and reliable and supply fuels at the lowest cost’.³⁴

31 Caltex, *Submission 12*, p. [8].

32 Caltex, *Submission 12*, p. [8].

33 BP, *Submission 13*, p. 8.

34 Mr Eriks Velins, *Submission 1*, p. 3.

Import price outcomes for consumers

- 3.33 The Construction, Forestry, Mining and Energy Union (CFMEU) commented that the announced closure of the Clyde refining facility will have adverse consequences including 'reduced competition in distribution and retail of petroleum products, leading to higher average fuel prices with consequent impact on household incomes and the viability of businesses'.³⁵
- 3.34 The AWU commented that 'based on the level of imports, Australia's transportation fuel is exposed to any external shocks of supply'.³⁶
- 3.35 Similarly, the NRMA was not optimistic about market forces addressing serious fuel disruptions and its impact on fuel prices. The NRMA stated:
- At present Australia has been shielded by higher fuel prices by the high Australian dollar. In the event of a serious global crisis this convenient financial safety net may not be available. There is a presumption that the market will resolve any short term interruption to supply but does not consider the impact on consumers in any detail.³⁷
- 3.36 The Australian Automobile Association (AAA) commented that 'a major disruption in the supply of transport fuels could have significant economic and social consequences, particularly if proposed refinery closures proceed in 2013 and 2014'.³⁸
- 3.37 The view that petrol prices could increase as a result of reduced domestic oil refining capacity was not shared by other groups in evidence to the committee. The key point is that fuel prices are based on import parity pricing. RET stated:
- Crude oil and petroleum fuels are internationally traded commodities with prices determined by market forces. The Department does not anticipate that refinery closures in Australia would lead to price increases as import parity pricing is already used in the market and domestic competition influences fuel pricing. The Department notes that Caltex has announced it has entered into an arms-length, long-term agreement with Chevron for the procurement and supply of petrol, diesel and jet fuel.³⁹

35 Construction, Forestry, Mining and Energy Union (CFMEU), *Submission 9, Why shut a refinery amidst a boom?*, 5 September 2011, p. 1.

36 AWU, *Submission 4*, p. 11.

37 NRMA, *Submission 15*, p. [5].

38 AAA, *Submission 16*, p. [1].

39 RET, *Submission 18*, p. 17.

- 3.38 The EWP noted that ‘Australia’s liquid fuel market has operated on the principle of import price parity [IPP] since 1977, which means that domestic fuel prices are closely linked to international events’.⁴⁰ The Australian Consumer and Competition Commission (ACCC) has confirmed that the international benchmark price is the largest component of domestic petrol, diesel and automotive LPG prices.⁴¹ The international benchmark price, which differs for each fuel, is a base price for Australian suppliers. The EWP stated that the benchmarks for each fuel are:
- petrol – Singapore Mogas 95 Unleaded
 - diesel – Singapore Gas Oil 10 parts per million
 - LPG – Saudi Contract Prices.⁴²
- 3.39 The EWP concluded that ‘the closure of existing Australian refineries is unlikely to have any major impact on consumer fuel prices, as import parity pricing is the basis for wholesale and retail fuel pricing in Australia’.⁴³
- 3.40 BP emphasised that IPP is the critical feature of petrol pricing, stating:
- Given the recent publicity concerning the impact of refinery closures on pricing for consumers it should be reiterated that ex-refinery prices are based on the landed price of Australia fuel grade standard product, ie the Import Parity Price (IPP). If a refinery tried to sell product above the IPP other companies would simply import the product. Thus refinery sales and margins in Australia are governed by the landed cost of internationally traded petroleum products as reflected in the IPP.⁴⁴
- 3.41 Similarly, Caltex commented that ‘the prices of products from Australian refineries reflect international prices through the mechanism of the import parity price’.⁴⁵ In particular, Caltex stated that ‘as a consequence, declining refinery capacity has no impact on import prices, hence no impact on the cost basis for Australian wholesale or retail prices’.⁴⁶ This view was shared by Mobil Oil which stated:
- Today, the price of fuel sourced from Australian refineries reflects the alternative cost of supplying fuel purchased on the Singapore spot market as that is the option available to all fuel suppliers into

40 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, p. 121.

41 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, p. 121.

42 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, p. 122.

43 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, p. 126.

44 BP, *Submission 13*, p. 9.

45 Caltex, *Submission 12*, p. 11.

46 Caltex, *Submission 12*, p. 11.

Australia. This has been confirmed by the ACCC through the reviews and regular annual monitoring of the industry it has done since 2007, and will continue to be the case if further Australian refineries close.⁴⁷

3.42 Shell commented that 'claims that refinery closures will increase the cost of fuel to consumers are flawed'.⁴⁸ Shell stated:

Prices for all gasoline in Australia are predominantly based on import parity pricing (IPP) – shipping, wharfage and storage and handling are all additional costs that get added in but the price of petrol and diesel in Australia are almost all import parity price and taxes. Specifically:

- The Singapore benchmark price of petrol plus shipping costs and Australian taxes represents almost the entire wholesale price of petrol – over 90% of the Terminal Gate Prices (TGPs).
- The remainder of TGP reflects insurance, a quality premium for Australian fuel standards, local wharfage and terminal costs and a small wholesale marketing margin (where competitively possible).⁴⁹

3.43 Mr Eriks Velins noted that 'the current government fuel pricing policy has ensured that consumers can obtain some of the OECD's cheapest petroleum fuels and marketing margins have been adequate to justify investment of capital to provide for growth'.⁵⁰

3.44 The AIP also noted that the price of fuel in Australia is dependent on world market prices. The AIP stated:

Singapore prices are the key pricing benchmarks for Australia because this represents the competitive alternative for supply to Australia. Benchmark prices are adjusted by a negotiated quality premium that reflects Australian fuel quality standards. Growth in demand for fuel in Australia will continue to be largely met by imports, further strengthening the price relationship with Asian fuel prices.⁵¹

3.45 In December 2012 the ACCC completed a report into the prices, costs and profits of unleaded petrol in Australia.⁵² The ACCC noted that

47 Mobil Oil, *Submission 17*, p. 4.

48 Shell, *Submission 20*, p. 11.

49 Shell, *Submission 20*, p. 11

50 Mr Eriks Velins, *Submission 1*, p. 4.

51 AIP, *Submission 14*, p. 13.

52 Australian Consumer and Competition Commission (ACCC), *Monitoring of the Australian petroleum industry, Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia*, December 2012.

international factors were the key to Australian petrol prices. In particular, the ACCC stated that ‘relatively low levels of petrol taxes in Australia result in petrol prices in Australia being among the lowest in the OECD.’⁵³

3.46 During the hearing the ACCC confirmed that import parity pricing was the key determinant of petrol pricing, stating:

Basically the marginal source of supply of refined fuels, as it is for accrued oil, is imports. The price in Australia has to reflect an international parity price – the price in the international markets. Otherwise, if the price in Australia was below that, then you would have shortages, because it would be more profitable to export refined fuel outside of Australia. So effectively what happens is that the price in Australia reflects an international price. The ACCC has looked at this. We have been analysing the market for the last five years on this. We are about to put out a large report, in the next couple of weeks, looking at these things. But there are a number of reports that we have done over the past four years that are all on the public record. They clearly show that retail prices in Australia reflect, effectively, the wholesale prices plus a margin. And those wholesale prices reflect the import parity price, so they reflect those international prices.⁵⁴

3.47 In relation to the impact that refinery closures might have on the cost of petrol, the ACCC stated:

So the impact of a refinery closure on the wholesale price that people are getting – and therefore, downstream, the retail price – is not impacted by the closure of a refinery or two refineries or three refineries in Australia. They are affected by the international prices and the value of the Australian dollar. There have been a couple of examples where there have been closures of refineries, and we actually have real-life examples of whether there will be a price impact. Port Stanvac, the refinery in Adelaide, was mothballed in 2003. Effectively it never went back into production, but it was mothballed in 2003. In the time that went out and over the years after it went out, the terminal gate price in Adelaide, which is a reasonably good proxy for the wholesale price in Adelaide, went down relative to the prices in the other mainland capitals. There was not a price effect in Adelaide. In fact, if you look at Adelaide

53 ACCC, *Monitoring of the Australian petroleum industry, Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia*, December 2012, p. ix.

54 Mr Matthew Schroder, ACCC, *Committee Hansard*, Canberra, 30 November 2012, p. 14.

prices now and over the last few years, Adelaide has had the lowest or near the lowest prices in Australia.⁵⁵

Energy White Paper – Liquid fuel market policy actions

3.48 The EWP outlined a range of policy actions the Australian government should take in managing Australian liquid fuel needs. The policy actions are reproduced below.

Liquid fuel market policy actions

To ensure that Australia is positioned to meet its liquid fuel needs, the Australian Government will:

- continue to monitor developments in the liquid fuel market, including liquid fuel supply vulnerabilities associated with the decline in domestic refining capacity
- work with industry and, guided by the Alternative Transport Fuels Implementation Advisory Group, pursue a market-led approach to the development and deployment of alternative transport fuels
- develop a more consistent long-term policy framework for liquid fuels so as to promote stability and certainty for future investment, with the first step being the Productivity Commission review of fuel excise arrangements and an examination of a regime based precisely on the carbon and energy content of fuels, which is to be completed in time to allow any changes to be implemented by 2015–16.

The government will maintain and improve our understanding of the liquid fuels market through:

- assessing Australia's liquid fuel vulnerabilities as part of the National Energy Security Assessment (this will cover the liquid fuel supply chain, including import and refining infrastructure and critical supply linkages)
- improving the quality of the Australian Petroleum Statistics, including consideration of mandatory reporting
- undertaking biennial Australian Liquid Fuel Technology Assessments from 2013.

Source Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 131.

55 Mr Matthew Schroder, ACCC, *Committee Hansard*, Canberra, 30 November 2012, p. 14.

Conclusion

- 3.49 With the closure of the Clyde and Kurnell oil refineries, refining capacity in Australia will decrease by about 28 per cent and leave five operating refineries. Domestic refiners will produce just over half the fuel consumed in Australia with the remainder being imported.
- 3.50 During the hearing, Mobil Oil noted that ‘some level of domestic refining capacity is highly desirable to provide additional flexibility to cope with the short term product supply interruptions and imbalances that can occur’. Similarly, Caltex noted that when it announced the closure of the Kurnell refinery, it did indicate a future for its Lytton refinery commenting that ‘we can see a pathway to a sustainable future for that asset’.
- 3.51 The committee notes that during the past decade oil refining companies have invested almost \$9 ½ billion in Australian refineries. The most recent announcements of closures have been accompanied by significant investment in import terminal infrastructure, including the upgrading of port infrastructure. For example, Shell noted that it has made significant investments in exploration, development and supply of liquefied natural gas and condensates. It serves Australia well if at a time of global transition, companies are sufficiently profitable to make investments in the future.
- 3.52 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 ACCC 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.
- 3.53 The recent history of refinery closures has not resulted in any negative price impacts for Australian consumers. The ACCC noted that when the Port Stanvac refinery was mothballed in 2003 there was not a price effect in Adelaide. The ACCC stated that ‘in fact, if you look at Adelaide prices now and over the last few years, Adelaide has had the lowest or near the lowest prices in Australia’.
- 3.54 These changes in 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 Energy White Paper (EWP) noted that ‘our lack of self-sufficiency and the prospect of further refinery rationalisation does not in itself compromise or reduce our energy security’. The Australian Institute of Petroleum and refiners were also confident about the

reliability of Australia's supply chains and infrastructure to continue to meet local fuel demands, as it has done over many decades.

3.55 The committee notes that the market is robust and, from the available evidence, it is operating soundly. Australia is well serviced by reliable and diverse supply chains. However, this is an extremely important sector in global transition and the committee supports the ongoing monitoring of the liquid fuel market as outlined in the EWP. In particular, the EWP noted that the Australian Government will:

- continue to monitor developments in the liquid fuel market, including liquid fuel supply vulnerabilities associated with the decline in domestic refining capacity.

3.56 In addition, the Australian Government will maintain and improve our understanding of the liquid fuels market through:

- assessing Australia's liquid fuel vulnerabilities as part of the National Energy Security Assessment (this will cover the liquid fuel supply chain, including import and refining infrastructure and critical supply linkages).

3.57 As part of considering the economic impacts of refinery closures it is also essential and timely to note the importance of fuel quality standards and their bearing on environmental and health outcomes. The EWP stated that 'Australia's fuel quality standards have improved urban air quality, facilitated the introduction of new engines and fuel-efficient technologies, and reduced greenhouse gas emissions'.

3.58 Industry analysis indicates that improving fuel quality standards is a global trend. It is anticipated that by 2020 there will be a significant reduction in the sulphur levels in petrol. In the Asia-Pacific region, Australia is not alone in mandating higher fuel quality, with Japan, Hong Kong, Singapore and New Zealand already observing Euro 4 or 5 standards for petrol and diesel products, respectively, which are equivalent to the Australian Standards. Countries such as China, India and Malaysia are also working towards these standards.

3.59 As part of its responsibilities in administering the Fuels Quality Standards Act, the Commonwealth Department of Sustainability, Environment, Water, Population and Communities has inspectors in each state and territory who take samples of domestically produced and imported refined fuel products to ensure they meet Australian fuels quality specifications.

3.60 The committee notes concerns by stakeholders that the move towards imported refined fuel might reduce standards both in terms of

environmental outcomes and quality control. The committee is not in a position to assess the validity of the claims.

- 3.61 However, the committee agrees that rigorous monitoring is important to ensure that imported refined fuels are meeting Australian fuel quality standards. The committee suggests that fuel quality standards and environmental outcomes should be monitored as part of the EWP's recommended monitoring of liquid fuel vulnerabilities.

Energy security

Introduction

- 4.1 Energy security is a crucial element of Australia's economic and social wellbeing. In relation to liquid oil supplies, recent and planned closures of domestic oil refineries will leave Australia with five refineries by mid-2014. Concerns have been raised that further closures which reduce Australia's domestic refinery capacity could potentially impact on domestic energy security. It has been suggested that greater reliance on imports may leave Australia vulnerable to international supply disruptions.
- 4.2 Australia is not currently complying with its obligation, as an International Energy Agency (IEA) member country and net oil importer, to maintain 90 days of oil stockholdings.¹ It has been argued that non-compliance could affect Australia's ability to access international stockholdings in the event of a large-scale global supply disruption. The Australian Government is currently considering options to address Australia's non-compliance with the 90 day stockholding obligation.
- 4.3 In its *Energy White Paper 2012* (EWP), the Australian Government concluded that Australia's energy system is meeting national needs and 'is expected to do so into the future'.² It is anticipated that the current market arrangements, import supply diversity, and emergency management strategies will serve to address Australia's liquid fuel needs.

1 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 59; International Energy Agency (IEA), <www.iea.org/aboutus/faqs/membership/>, viewed 21 November 2012.

2 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 48.

Background

Energy White Paper

- 4.4 Australia's energy security outlook has been described as 'generally positive', with Australia's energy system 'meeting the economic and social needs of Australians, and is expected to do so into the future'.³
- 4.5 In the EWP, liquid fuel energy security is assessed as 'high, trending to moderate in the long-term, as Australia has continued access to adequate and reliable supplies of liquid fuels at prices that are manageable within the broader economy'.⁴
- 4.6 The Australian Government defines energy security as:
- ... the adequate, reliable and competitive supply of energy and energy services to support the nation's economic and social development, where:
- adequacy is the provision of sufficient energy to support economic and social activity
 - reliability is the provision of energy with minimal disruptions to supply
 - competitiveness is the provision of energy at an affordable price that does not adversely affect the competitiveness of the economy and that supports continued investment in the energy sector (RET 2011a).⁵
- 4.7 The EWP classified the levels of energy security as follows:
- High – meeting Australia's economic and social needs;
 - Moderate – needs are being met but there could be a number of emerging issues that will need to be addressed to maintain that security level; and
 - Low – needs are not being met, or might not be met.⁶
- 4.8 In the EWP, the Australian Government argued that:
- Australia's abundant reserves of energy resources underpin our energy security, but maintaining a high level of security also depends on our integration into diversified supply chains, access to well-functioning global energy markets and continued effective responses to market and non-market risks.⁷

3 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. ix; 48.

4 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 50.

5 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 49.

6 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 50.

7 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. ix.

- 4.9 According to the EWP, a range of factors play a role in determining short, medium and long-term energy security:
- the ability to bring our energy resources to market efficiently and sustainably
 - domestic and global geopolitical and economic conditions that influence energy supply and demand, as well as key inputs for system development such as investment capital
 - the efficiency, robustness and resilience of our energy infrastructure, markets, and market participants
 - the degree of integration with international energy markets and supply chains
 - changes in domestic and global energy prices.⁸
- 4.10 The EWP outlined four issues warranting consideration in addressing energy security policy challenges:
- managing risk and uncertainty;
 - adjusting to changing market dynamics;
 - managing our international liquid fuels stockholding obligation; and
 - providing a resilient energy security response.⁹
- 4.11 The EWP sets out a strategic policy framework to address Australia's immediate energy priorities and position Australia for longer-term change, including managing the country's energy security.
- 4.12 In addition to allowing market forces to operate effectively, a country must have strategies in place to respond to emergency situations. In particular, when reliant on imports, a country must have plans to address and minimise the negative impacts of supply disruptions.
- 4.13 Governments have an important role to play in implementing strategies for energy security. In particular, when seeking to address non-market threats to energy security. The EWP outlined that the Australian Government's energy policy framework is designed to improve Australia's energy security through:
- continuing supply- and demand-side market reforms to maximise investment and improve the flexibility and resilience of energy markets
 - encouraging diversity of supply and infrastructure reliability for supply chain resilience
 - attracting the necessary capital investment and skilled labour to meet future energy demand

8 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 49.

9 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 56.

- promoting long-term investment certainty through carbon pricing.¹⁰
- 4.14 The strategy for strengthening Australia's energy policy framework will include undertaking a two-yearly National Energy Security Assessment from 2014, and reviewing the assessment framework to provide a more systemic assessment of energy risks.¹¹

National Energy Security Assessment

- 4.15 The 2011 *National Energy Security Assessment* (NESA) contributed to the development of the Australian Government's EWP. The 2011 NESA considered factors posing challenges to the adequate, reliable and competitive delivery of energy in Australia's liquid fuel, natural gas and electricity sectors. The assessment covered:
- Australia's growing reliance on oil importation;
 - the gas sector's rapidly evolving unconventional gas resources and liquefied natural gas (LNG) markets on the east coast; and
 - the investment environment in the electricity sector, particularly in the context of low-carbon and renewable energy policies.¹²
- 4.16 The 2011 NESA, an update of the 2009 assessment, made the following key findings in relation to energy security:
- Australia's overall energy security situation is expected to remain adequate and reliable;
 - Investment in energy infrastructure in the coming decades will largely determine the level of future energy security; and
 - A number of other emerging issues could also have implications for maintaining Australia's medium to long-term security, including the transition to reducing greenhouse gas emissions, emerging gas market developments and energy price pressures.¹³
- 4.17 In relation to Australia's liquid fuel security, the 2011 NESA found:
- Australia's liquid fuels energy security is assessed as *high trending to moderate* in the long term, as we have continued access to highly adequate and reliable supplies of liquid fuels at price levels that are manageable within the broader economy.
- The moderate assessment rating in the long term recognises a likely trend of high crude oil prices driven by increasing global

10 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 48.

11 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. xxi.

12 Australian Government, *National Energy Security Assessment*, December 2011, p. v.

13 Australian Government, *Factsheet: National Energy Security Assessment 2011*, p. 1.

demand and an increased reliance on more expensive sources of supply; the significant global investment challenge required to meet rising demand; and the continued risks of geopolitical uncertainty in key oil-producing countries.¹⁴

Table 4.1 2011 NESAs summary of liquid fuel security

	Short term (to 2012)	Medium term (to 2016)	Long term (to 2035)
Adequacy	HIGH	HIGH	MODERATE
Comment	Open and well-functioning international and domestic markets continue to provide Australia with sufficient supplies of liquid fuels.	Increased global production is projected to adequately meet rising global demand. Growth in global and regional surplus refinery capacity provides highly adequate supplies of petroleum products.	Combined resources of conventional and unconventional oil are considered adequate to meet global demand. Significant global investment is needed to ensure that global supply meets rising demand.
Reliability	HIGH	HIGH	MODERATE
Comment	Access to well-functioning markets has helped create robust and flexible supply chains with a high degree of diversity of supply. Proactive supply chain management is able to mitigate the effects of short-term supply disruptions.	Continued access to flexible global supply chains and availability of alternative supplies due to surplus refinery capacity allow the petroleum industry to continue to provide liquid fuel supplies with minimal disruptions.	Australia becomes more dependent on more international supply chains, geopolitically risky and geologically difficult sources of supply. Australian refineries are likely to continue to face competitive pressures. Nevertheless, significant investment in regional refining is likely to continue to provide adequate supplies of refined products.
Competitiveness	MODERATE	MODERATE	MODERATE
Comment	High international crude oil prices remain manageable within the broader economy. The strong Australian dollar helps offset high crude oil prices.	Continued high global prices remain manageable within the broader economy. Commercial inventories, spare OPEC production capacity, and surplus global and regional refining capacity continue to provide a buffer against unexpected supply and demand shocks.	Strong demand growth in emerging economies and increased reliance on more expensive sources of supply are expected to cause global oil prices to continue to rise.
OVERALL	HIGH	HIGH	MODERATE

Source Australian Government, *National Energy Security Assessment, December 2011, Table 2.1, p. 9.*

4.18 The Department of Resources, Energy and Tourism (RET) also released two NESAs identified issues reports in November 2012. The *National Energy Security Assessment (NESA) Identified Issues: Competitive Pressures on Domestic Refining* report (NESA Competitive Pressures report) considered the energy security implications of having less refineries operating in Australia. RET commissioned the energy consulting company Hale and

14 Australian Government, *Factsheet: National Energy Security Assessment 2011, p. 2.*

- Twomey to assess the potential implications of hypothetical closures of Clyde, Kurnell and Lytton refineries, and then of all domestic refineries.
- 4.19 It was emphasised that the scenario depicting closures of all refineries was hypothetical, and that the current closures do not mean all refiners will make similar decisions.¹⁵
- 4.20 The NESAs Competitive Pressures report found in relation to supply security that in the event of further refinery rationalisation in Australia:
- 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.¹⁶
- 4.21 The *NESA Identified Issues: Strait of Hormuz* report is an economic assessment of a disruption to shipping in the Strait of Hormuz on the Australian economy. The Strait of Hormuz links the Persian Gulf with the Arabian Sea and Indian Ocean.
- 4.22 RET explained that the report involved a scenario, and was not commenting on 'the probability or otherwise of those particular events happening', but to illustrate how supply chains might operate following a supply disruption in the strait.¹⁷ The report concluded that:
- ... there would be no impact on supply to world refineries due to three points: surge production from countries outside the Middle East, the ability of the industry to initially draw on oil stocks built up in the period prior to the event and stocks on water that would already be on water once the event occurred, and stocks released under policy measures such as the IEA collective action. The report, which was an economic focused report, found that there would be an impact on Australian GDP of around \$500 million. It found that there would be some impacts on the price of oil as well. But, importantly, it found that there would be no impact on the supply to oil refineries because of those three factors.¹⁸

15 Hale & Twomey Limited, *National Energy Security Assessment (NESA) Identified Issues: Competitive Pressures on Domestic Refining*, Prepared for the Department of Resources, Energy and Tourism, 29 June 2012, p. ii.

16 Hale & Twomey Limited, *National Energy Security Assessment (NESA) Identified Issues: Competitive Pressures on Domestic Refining*, Prepared for the Department of Resources, Energy and Tourism, 29 June 2012, p. i.

17 Mr Brendan Morling, Department of Resources, Energy and Tourism (RET), *Committee Hansard*, Canberra, 30 November 2012, p. 24.

18 Mr Brendan Morling, RET, *Committee Hansard*, Canberra, 30 November 2012, p. 24.

Liquid fuels vulnerability assessment

- 4.23 The Australian Government undertakes periodic reviews of Australia's vulnerability to interruptions to oil supplies. The 2011 *Liquid Fuels Vulnerability Assessment* (LFVA) is the most recent review. It concluded that 'despite growing dependence on imported sources of crude oil and refined petroleum products, adequacy is likely to be maintained to 2020', and 'potentially to 2035 according to the latest IEA World Energy Outlook'.¹⁹
- 4.24 Other key 2011 LFVA findings included:
- The market would respond and readjust the supply lines to replace supplies lost in the event of a disruption. Prices would rise and there would be a cost to the economy. However, the impact could be reduced in size and duration in the event of a coordinated response by IEA members designed to increase available supply.
 - Ongoing investment in adequate importing capacity and storage will continue to be important in the future. However, there is sufficient clear evidence of significant recent and planned investments in import capacity to provide confidence that Australia will continue to be able to meet its growing domestic demand for liquid fuels.²⁰

Discussion

Australia's energy security outlook

- 4.25 RET noted that while Australia is a net energy exporter, in the area of liquid fuels Australia is an importer.²¹
- 4.26 The Australian Institute of Petroleum (AIP) publication *Downstream Petroleum 2011* described Australia as enjoying a 'high level of liquid fuel security', which is 'not expected to change in the coming years'.²² It attributed the strength of Australia's position to:
- a diversity of supply sources for crude oil and petroleum products, including from both domestic and imported sources
 - flexible, resilient and reliable supply chains (including shipping lanes and infrastructure)

19 ACIL Tasman, *Liquid fuels vulnerability assessment*, October 2011, pp. ix and xxvi.

20 ACIL Tasman, *Liquid fuels vulnerability assessment*, October 2011, p. xxvi.

21 Mr Brendan Morling, Department of Resources, Energy and Tourism (RET), *Committee Hansard*, Canberra, 30 November 2012, p. 24.

22 AIP, *Downstream Petroleum 2011*, p. 16.

- an efficient domestic refining capability providing multiple supply options and the ability to convert domestic crude oil into useable products
- imported petroleum products providing a diversity of potential supply sources in the event of refinery disruptions
- supply and storage infrastructure able to meet current and future growth in fuel demand
- a strong record of efficient and reliable supply and supply chain management by industry.²³

4.27 The AIP agreed with the EWP position that Australia's energy security outlook appears 'positive and robust'. It also recognised that there are challenges that the petroleum market and wider energy sector must face.²⁴

4.28 The AIP also agreed with the 2011 NESAs findings about the security of liquid fuels:

AIP concurs with the 'highly secure' rating for liquid fuels and the industry expects this performance to continue for the foreseeable future.

- There has been no change to the security rating for liquid fuels since the last NESAs update in 2008, despite the challenging international market conditions for crude oil and petroleum products and other domestic market developments.
- The fuel security and supply reliability provided by the downstream petroleum industry has also been superior to other domestic energy sectors (eg. electricity and gas), reflecting the diversity of alternative liquid fuel supply sources available to Australia in the event of a supply disruption and the efficient integration of Australia into the regional petroleum market and reliable international supply chains.
- The more moderate security ratings across all energy sectors for the longer term to 2030, simply reflects the normal market uncertainties and unknowns over such an extended time period and the ongoing competitive pressures on the industry.

AIP also supports the main high level conclusions from the NESAs that:

- Australia has secure liquid fuels supplies and diverse domestic and international supply sources and this is expected to continue, particularly given the outlook for excess supply capacity in the Asian region.
- Australia's growing dependency on crude oil and product imports will have limited affordability, reliability and supply

²³ AIP, *Downstream Petroleum 2011*, p. 16.

²⁴ AIP, *Submission 14*, p. 10.

- security implications for liquid fuels, and this includes in the context of the Clyde refinery conversion in 2013.
- The industry's investment in infrastructure and stockholdings has kept pace with increasing liquid fuels consumption since the last NESAs update.²⁵
- 4.29 Some submitters expressed concern about Australia's decreasing domestic oil refinery capacity coupled with the increasing reliance on imports of refined petroleum product and crude oil.²⁶
- 4.30 The Australian Manufacturing Workers' Union (AMWU) outlined the following 'risks associated with greater dependence on imports':
- the potential for upward pressure on raw materials and suppliers resulting in higher prices flowing through the supply chain;
 - less interaction with customers and feedback thus less capacity to adapt quickly to product requirements – there remains a shortfall in Asia of refineries that meet Australian specifications; and ...
 - the concentration of risk of supply disruption in regions subject to natural and geo-political shocks and upheavals.²⁷
- 4.31 NRMA noted that Australia's geography puts the country at the end of a 'long supply chain' that could be vulnerable to changes in the regional security environment.²⁸ The Australian Workers' Union (AWU) raised concerns about relying on imports from areas of geopolitical instability, such as the Middle East.²⁹
- 4.32 However, other submitters endorsed the NESAs findings that Australia's liquid fuel security is assessed as 'high trending to moderate' in the longer-term.³⁰ Submitters, such as Caltex, argued that the trend towards greater reliance on imports does not reduce Australia's liquid fuel security.³¹

25 AIP, *Submission 14*, p. 18.

26 For example, see Australian Automobile Association, *Submission 16*, p. 2; Service Station Association, *Submission 10*, p. 1.

27 Australian Manufacturing Workers' Union (AMWU), *Submission 7*, p. 3.

28 Air Vice Marshal John Blackburn (Retired), NRMA, *Committee Hansard*, Canberra, 30 November 2012, p. 26.

29 Australian Workers' Union (AWU), *Submission 4*, p. 13.

30 See for example BP, *Submission 13*, p. 8.

31 Caltex, *Submission 12*, pp. [15-16].

- 4.33 To refine, Australia must import a significant proportion of its crude oil. Caltex noted that Australia already imports over 80 per cent of crude oil and other refinery feedstock. It argued that:

To suggest that recent refinery closures imperils our energy security is to miss the point that most of the crude oil previously refined in the domestic market already comes from overseas.³²

- 4.34 Caltex acknowledged that crude oil issues are affecting Australian refining:

Crude oil is becoming more expensive. Crude oil is our source of energy in refining, and our refineries are relatively inefficient. So, from an energy perspective, the cost of running our refineries is more expensive and we are having to source crude from further and further away. More than 40 per cent of Caltex's crude came from West Africa last year. That means we have got a lot more ships on the water and the funding of that crude supply chain has become more difficult. So there are a range of things on the crude side that are working against us.³³

- 4.35 The Business Council of Australia stated that:

... from an energy security perspective, we should be indifferent between the source (whether domestic or international) of the products, so long as our supply is secure and we have access to those products at the most affordable prices.³⁴

- 4.36 In response to questioning from the committee on whether importing refined oil posed a higher security risk than reliance on imported crude oil, RET argued that substituting imports of crude oil for imports of refined oil 'did not impose a significant increased risk'.³⁵

Impact of refinery closures

- 4.37 While some submitters argued that a declining domestic refinery capacity could compromise Australia's liquid fuel supply security, key stakeholders and energy security assessments found that these changes did not significantly compromise Australia's energy security.

32 Caltex, *Submission 12*, p. [15].

33 Mr Gary Smith, Caltex, *Committee Hansard*, Canberra, 30 November 2012, p. 5.

34 Business Council of Australia, *Submission 8*, p. 1.

35 Mr Brendan Morling, RET, *Committee Hansard*, Canberra, 30 November 2012, p. 25.

4.38 RET maintained that the Australian Government does not see rationalisation of the refining industry as an energy security issue.³⁶ Similarly, the 2011 LFVA concluded that:

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 2008 review, from the perspective of adequacy, reliability or affordability. Adequacy in terms of suppliers being able to keep up with demand has generally been maintained. This situation is likely to continue to be the case, despite the planned closure of Shell's refinery at Clyde in Sydney.³⁷

4.39 The EWP acknowledged that the closures of the Clyde and Kurnell refineries would see a reduction in Australia's domestic refinery capacity. However, it concluded that this decline 'is not considered to impair Australia's liquid fuel security'.³⁸

4.40 Similarly, RET stated:

The closures will occur over a phased period, and will be complemented by an expansion of import terminal capacity to ensure that market supply is maintained. Substituting imports of crude oil for imports of refined fuel at this scale does not pose any additional risk to market security.³⁹

4.41 Mobil Oil supported the position in the EWP that 'Australia does not face an increased long-term energy supply security risk as a consequence of the recent and planned domestic refinery closures'.⁴⁰ Mobil Oil contended:

The Australian petroleum industry has adequate fuel supply infrastructure and robust supply chain processes in place to ensure that it can continue to reliably meet local fuel demands, as it has done over many decades. The closure of a further one or more local refineries should not, of itself, pose a threat to reliable domestic fuel supply in the long-term.⁴¹

36 Mr Brendan Morling, RET, *Committee Hansard*, Canberra, 30 November 2012, p. 25.

37 ACIL Tasman, *Liquid fuels vulnerability assessment*, October 2011, p. viii.

38 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 50.

39 RET, *Submission 18*, p. 23.

40 Mobil Oil, *Submission 17*, p. 4.

41 Mobil Oil, *Submission 17*, p. 3.

- 4.42 Shell Australia countered the concern raised about increased reliance on refined oil imports, asserting that:
- Claims that a demise in local refining would lead to reduced supply security ignores the reality that the majority of local refineries already rely on a large percentage of imported crude oil and that Shell's interests as a key supplier of fuels in Australia, is to ensure supply for our customers and as far as practicable to maximize income from our sales and marketing business.⁴²
- 4.43 Shell Australia stressed that commercial considerations are key when deciding to continue or cease refinery operations. It argued:
- Keeping refineries open on the basis that they are perceived to be providing a higher level of supply security is flawed in its logic as a model of planned and structured importing can actually provide an equivalent or higher level of supply security than an unreliable small-scale refinery.⁴³
- 4.44 Similarly, Mr Velins commented that it was 'not evident that closure of one more or one less refinery can have a material effect upon Australia's energy security, for market forces will determine that outcome'.⁴⁴
- 4.45 The EWP argued that Australia's 'liquid fuel security is expected to remain high because of our access to reliable, mature and highly diversified international liquid fuel supply chains'.⁴⁵
- 4.46 BP agreed that reliable supply networks are at the core of supply security, stating that:
- Ultimately it is less relevant, in BP's experience, whether the imports are crude oil or refined products. Geopolitical concerns and disruptions to shipping routes are raised from time to time and in around 100 years of peacetime importation of both crude and refined product into the Australian market, BP has not experienced a significantly concerning supply disruption that would warrant overt market intervention.⁴⁶
- 4.47 Shell Australia argued that converting facilities from refineries to terminal mode will 'provide an equivalent or better level of supply security for the NSW marketplace as we will not be required to source products at late notice during periods of unplanned refinery shutdowns'.⁴⁷
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42 Shell, *Submission 20*, p. 9.

43 Shell, *Submission 20*, p. 5.

44 Mr Eriks Velins, *Submission 1*, p. 4

45 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 53.

46 BP, *Submission 13*, p. 8.

47 Shell, *Submission 20*, p. 10.

- 4.48 RET acknowledged that having a domestic capacity to refine domestic crude could serve as ‘an option of last resort if a complete market failure occurs from a severe global oil disruption’. However, RET also contended that the probability of such an event was low, based on the experience of recent decades.⁴⁸
- 4.49 While maintaining that the recent and planned closures would not have a detrimental effect on Australia’s medium to long-term energy security, groups recognised that there is still a need for domestic oil refining capacity in Australia.
- 4.50 Mobil Oil also argued that ‘some level of domestic refining capacity is highly desirable to provide additional flexibility to cope with the short term product supply interruptions or imbalances with can occur’.⁴⁹ It endorsed the LFVA’s findings that the continuing presence of domestic refineries would contribute to Australia’s ongoing energy security by increasing supply options.⁵⁰
- 4.51 The EWP supported continuing to have some domestic oil refining capacity in Australia. It argued that:
- While there is the prospect of some further reduction in Australia’s refining capacity, the underlying competitiveness of most Australian operations, along with the strategic advantages that some in-country refining presence offers, suggests that the prospect of a severely reduced or no refining capacity in Australia over the next decade is very remote.⁵¹
- 4.52 However, the EWP qualified these comments and asserted that:
- ... the extent to which a domestic refining presence is considered critical from a security perspective must also be considered in conjunction with the cost of maintaining such capacity, supply flexibility, and the security benefits of global trade. Global trade provides energy security through the diversity of source countries, multiple import points and ample terminal infrastructure at major demand centres.⁵²

48 Mr Brendan Morling, RET, *Committee Hansard*, Canberra, 30 November 2012, p. 25.

49 Mobil Oil, *Submission 17*, p. 4.

50 Mobil Oil, *Submission 17*, p. 4; Mr Alan Bailey, Mobil Oil, *Committee Hansard*, Canberra, 30 November 2012, p. 26.

51 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, p. 126.

52 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, p. 126.

- 4.53 At the roundtable hearing, RET commented that it was not aware that the government had formed a view on what an optimum or minimum level of domestic refining capacity might, or should, be.⁵³
- 4.54 The committee heard Australian refinery flexibility has contracted in the last decade in relation to the range of crude oils that can be effectively refined. The introduction of new product quality specifications has played a large part in reducing domestic capabilities.⁵⁴
- 4.55 Shell contended that having domestic refining capacity did not mean that these facilities are an effective match for Australia's crude oil. It stated:
- I think it is also worth knowing that there are lots of practical issues associated with what crude oil goes into what refineries. Whilst on paper you can say Australia has crude oil and we have refineries and the two might match, they probably do not. Most of the crudes that get produced from the North West Shelf are actually condensates; they are very light crude oils and they do not suit the hardware that is in the refineries in Australia. Certainly at an economic level they are better suited to going to Asia, which is why the trade flows go that way. In the event that we would process them, and only then, I doubt that we would meet consistently the Australian product quality specifications, because the refineries simply were not designed for those crude oils.⁵⁵
- 4.56 Similarly, the AIP noted the joint study by the National Oil Supplies Emergency Committee and the Fuel Standards Consultative Committee, which found that Australia's crude oil was either too light or too heavy to be effectively used in the Australian refining system. The study also found that diverting domestic crude production into the Australian refining system only provided a 'fairly marginal' increase in production.⁵⁶

53 Mr Brendan Morling and Ms Robyn Casey, RET, *Committee Hansard*, Canberra, 30 November 2012, p. 26.

54 Mr Michael Pope, Shell, *Committee Hansard*, Canberra, 30 November 2012, p. 30.

55 Mr Andrew Smith, Shell, *Committee Hansard*, Canberra, 30 November 2012, p. 28.

56 Mr Paul Barrett, AIP, *Committee Hansard*, Canberra, 30 November 2012, p. 28.

Transport fuel needs

- 4.57 RET noted that the transport sector is the 'largest final consumer of liquid fuels', consuming about three-quarters of Australia's fuel use.⁵⁷
- 4.58 Concerns were raised in relation to the transportation industry and the security of transport fuels. The NRMA submitted that Australia has 'three weeks' worth of transport fuels held by industry in refineries and within the distribution network with a further two weeks on route by sea'.⁵⁸ It contended that the closures of the Clyde and Kurnell refineries would impact on domestic refining capacity.⁵⁹
- 4.59 However, the AIP argued that 'Australia's longer-term liquid fuel supply security and transport energy needs will best be met through the market and market measures'.⁶⁰ The AIP claimed that the necessary market conditions 'largely exist now for the liquid fuels market'.⁶¹
- 4.60 One approach to address the issue of high liquid fuel demand is to continue to develop alternative fuel sources. This is one of the key areas of action identified in the EWP. The Australian Government is currently pursuing a market-led approach to the development and deployment of alternative transport fuels.
- 4.61 Alternative fuels, primarily liquefied petroleum gas (LPG), currently accounts for approximately five per cent of fuel use in the broader transport sector.⁶² The EWP indicated that while 'oil will remain the main energy source for the transport sector to 2035, there will be increasing take-up of alternative transport fuels'.⁶³ This will also be accompanied by technological developments, including more energy efficient transportation.
- 4.62 The EWP anticipates that rising oil prices will spur developments in indigenous alternative fuels and market opportunities will emerge for gaseous transport fuels, such as LNG and compressed natural gas.⁶⁴ The EWP noted CSIRO predictions of a transformation of Australia's transport energy sector, which would see:

By 2050 there will be significant growth in transport fuels and technologies that have little or no presence in the market today ...

57 RET, *Submission 18*, p. 3.

58 NRMA, *Submission 15*, p. 5.

59 NRMA, *Submission 15*, p. 5.

60 AIP, *Submission 14*, p. 17.

61 AIP, *Submission 14*, p. 17.

62 RET, *Submission 18*, p. 16.

63 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 27.

64 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 31.

Biodiesel could contribute around 13% of total transport fuel consumption, natural gas 12%, bio-derived jet fuel 8%, electricity for transport 5%, and synthetic diesels 2%.⁶⁵

- 4.63 The Australian Government's *Strategic Framework for Alternative Fuels* establishes a long-term strategic policy approach for developing alternative fuels in the context of maintaining transport fuel security and achieving a lower carbon economy. This includes providing grants and reviewing tax arrangements for gaseous fuels.
- 4.64 RET noted that the Australia Government provides tax concessions by taxing gaseous fuels (LPG, CNG and LNG) on an energy content basis, and a 50 per cent discount, with rates to be phased in over the period to 1 July 2015.⁶⁶
- 4.65 Shell saw a role for government in maintaining energy security for transport fuels, by providing a level playing field for competing transport fuels, and 'ensuring research and development settings are appropriate and encourage the commercial development of transport fuels'.⁶⁷
- 4.66 However, RET emphasised that developments must be market-led, and noted that the Australian Government does not support mandates for alternative fuels, as 'it may reduce energy security where there is lack of adequate supply sources'.⁶⁸

Market approach

- 4.67 The EWP outlined how 'well-functioning and competitive markets supported by effective policy and regulation underpin our ongoing energy security'.⁶⁹ It identified occasions of oil disruptions, such as in 2011 with the Libyan oil disruption and nuclear plant shutdown in Japan, where market forces played an important role in addressing energy needs.⁷⁰
- 4.68 RET argued that market forces are crucial to ensuring Australia's energy security. It submitted that 'efficient, transparent and open domestic, regional and global markets that create clear incentives for timely investment and efficient operation and end use are the best means for ensuring Australian's energy security at the least cost to consumers'.⁷¹

65 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, pp. 88-89.

66 Mr Stephen Woolcott, RET, *Committee Hansard*, Canberra, 30 November 2012, p. 35.

67 Shell, *Submission 20*, p. 15.

68 RET, *Submission 18*, p. 25.

69 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 53.

70 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 53.

71 RET, *Submission 18*, p. 2.

- 4.69 While acknowledging the challenges the industry is facing, the AIP agreed that 'the market, and a market based policy framework by Government, remains best placed to manage these challenges and future risks'.⁷² The AIP maintained that:
- Australia's market based approach has delivered secure, reliable and affordable fuel supplies which meet the operational requirements of consumers and major fuel users and this position is not expected to change in the coming years.⁷³
- 4.70 Regional surpluses, particularly in Asia, will play a role in Australia being able to access supply of crude oil and petroleum products to meet domestic energy needs.
- 4.71 RET noted that while the significant surplus in regional refining capacity over the medium term places competitive pressure on Australia refineries, it also provides 'substantial supply alternatives for Australia, as well as acting as a buffer against unexpected demand or supply shocks'.⁷⁴
- 4.72 RET also presented relevant findings of the June 2012 NESAs Competitive Pressures report that stated:
- Refinery closures in Australia would have no significant impact on the wider Asian system as higher demand in Australia and the region for diesel and jet fuel in particular is easily absorbed within spare capacity. While the petrol market is more fractured, the Asian system would adjust to meet additional demand from an orderly refinery closure.⁷⁵
- 4.73 The NESAs Competitive Pressures report suggested that market participants are usually aware in advance of potential refinery closures, for example, with the possible closure of Clyde foreshadowed for over a decade.⁷⁶

72 AIP, *Submission 14*, p. 11.

73 AIP, *Submission 14*, p. 17.

74 RET, *Submission 18*, p. 23.

75 RET, *Submission 18*, p. 24.

76 Hale & Twomey Limited, *National Energy Security Assessment (NESAs) Identified Issues: Competitive Pressures on Domestic Refining*, Prepared for the Department of Resources, Energy and Tourism, 29 June 2012, p. iii.

Disruptions in the supply chain

- 4.74 The 2011 NESAs included modelling of supply chain disruptions, and was designed to test Australia's resilience to various hypothetical situations. Recognising Australia's reliance on liquid fuel imports, one of the scenarios involved a disruption to the Singapore supply chain for refined petroleum products, the main importing source for these products.
- 4.75 The modelling 'demonstrated that the global market and international supply chain could provide Australia with adequate and reliable supplies, albeit at higher prices'.⁷⁷ The 2011 NESAs found that:
- An immediate interruption to the Singaporean supply chain is estimated to increase global product prices by around 18 per cent on average in the first month, while prices decline somewhat from this spike in the second and third months. The main impact on Australia's energy security would be on competitiveness. Adequacy and reliability would be maintained through alternative supplies available due to excess regional and global refining capacity, access to stocks in Australia and those already on water, and the ability to acquire petroleum products from the Asia-Pacific that would normally be sold to other regions.⁷⁸
- 4.76 Some groups expressed concern about the modelling used in the NESAs and LFVA assessments of the impact of a shutdown of Singapore's major refinery.⁷⁹ The NRMA contended that the NESAs 'perhaps do not encompass the full range of potential contingencies'.⁸⁰
- 4.77 The Construction, Forestry, Mining and Energy Union saw the scenario analyses as limited, and suggested that in dealing with risks, 'we should make sure that all bases are covered in all the different scenarios'.⁸¹
- 4.78 However, a number of submitters endorsed the findings of the EWP, 2011 NESAs and LFVA. The AIP asserted that its assessment is consistent with these analyses of liquid fuel security, stating that:

NESAs and its supporting analysis contained in the LFVA are comprehensive and timely assessments, underpinned by detailed

77 Australian Government, *National Energy Security Assessment*, December 2011, p. vii.

78 Australian Government, *National Energy Security Assessment*, December 2011, p. vii.

79 AWU, *Submission 4*, p. 14.

80 Air Vice Marshal John Blackburn AO (Retired), NRMA, *Committee Hansard*, Canberra, 30 November 2012, p. 6.

81 Mr Graham Larcombe, Construction, Forestry, Mining and Energy Union, *Committee Hansard*, Canberra, 30 November 2012, p. 27.

independent analysis and modelling and drawing from authoritative sources.⁸²

4.79 When outlining the scope of the NESAs and EWP, RET explained that the policy principle in the EWP was:

... not about eliminating risk altogether through implementing prescriptive and potentially costly policies. Rather, it is about a more effective and less costly approach to ensure predictable, resilient policy frameworks that can work with efficient markets and robust institutional arrangements. So it is not about eliminating risk altogether; it is about providing resilient policy frameworks.⁸³

4.80 The AIP concluded that:

... Australia has a robust 'Emergency Response' framework and emergency management plans for liquid fuels which are consistent with Australian market characteristics, utilise established and tested industry commercial practices, and adopt those best practice IEA practices that will be effective in our specific market circumstances.⁸⁴

4.81 In the discussion on managing risk factors, the EWP argued:

While one approach to managing risk is to 'design for the worst', experience in energy markets over the past 50 years suggests that this would be very costly and largely unnecessary.

Most energy security events, if they emerge at all, are likely to develop over time. Rather than implementing prescriptive and potentially costly policies in an attempt to eliminate risk, a more effective and less costly approach is to ensure predictable, resilient policy frameworks, efficient markets and robust institutional arrangements that allow us to look ahead and to respond quickly if we need to. Apart from the highly exceptional circumstances that could arise from major unforeseen national, regional or global security events, the Australian Government believes that the practical set of energy security developments considered possible in the foreseeable future can be managed effectively using existing energy security mechanisms and market responses.⁸⁵

82 AIP, *Submission 14*, p. 18.

83 Mr Brendan Morling, RET, *Committee Hansard*, Canberra, 30 November 2012, p. 24.

84 AIP, *Submission 14*, p. 22.

85 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, pp. 57-58.

Self-sufficiency

4.82 A recurring theme in evidence to the committee was that self-sufficiency does not necessarily equate to energy security, and may not be an appropriate or practical goal in the Australian context. The 2011 NESA acknowledged that:

Australia's lack of self-sufficiency in liquid fuels means that Australia, like many other advanced and developing countries, is intrinsically linked to the global market. Australia's liquid fuel security is, therefore, substantially dependent on global market outcomes and the global oil security situation.⁸⁶

4.83 However, the 2011 NESA concluded that 'this lack of self-sufficiency and reliance on global markets do not necessarily mean that Australia has an energy security problem'.⁸⁷ The 2011 NESA stated:

Global markets have both positive and negative impacts on liquid fuel security. A major benefit comes from the increased diversity of supply for both crude oil and refined petroleum products, with international sources supplementing Australia's domestic production.⁸⁸

4.84 When considering the issue of self-sufficiency in the EWP, the Australian Government stated:

Self-sufficiency as an energy policy goal is costly and likely to be misplaced, given the proven ability of international markets to respond to changing circumstances.⁸⁹

4.85 The EWP also commented that energy security 'does not equate to energy independence or self-sufficiency in any particular energy source'.⁹⁰ The Australian Government highlighted that:

The findings of the Australian Government's 2011 National Energy Security Assessment show that energy security does not depend on energy independence or the ability to be self-sufficient. Instead, the growing interconnectedness of the global energy trade provides Australia with flexibility and energy security benefits, as we are both a buyer and seller of liquid fuel and other energy commodities in global markets. The international trade in energy resources is like the trade in other commodities: the benefits

86 Australian Government, *National Energy Security Assessment 2011*, December 2011, p. 11.

87 Australian Government, *National Energy Security Assessment 2011*, December 2011, p. 11.

88 Australian Government, *National Energy Security Assessment 2011*, December 2011, p. 11.

89 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 48.

90 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 52.

unambiguously increase national development options and boost national and global wealth.⁹¹

4.86 Further, the EWP argued that pursuing self-sufficiency may have negative consumer impacts, such as imposing higher costs, without necessarily providing any economic benefits.⁹²

4.87 The Australasian Convenience and Petroleum Marketers Association (ACPMA) argued that countries that plan for growth 'cannot just rely on what is produced within their borders'.⁹³ The ACPMA stated:

Our position is that that really means we should be looking for interdependence when it comes to supply of refined product in the country and not independence, because we do not have it now. We really do need to look at our mutual relationships with countries with regard to supply.⁹⁴

Role for government

General regulation

4.88 It is generally accepted that government has a role to play in ensuring Australia's energy security. All governments must strike an appropriate balance between allowing market forces to operate, and addressing economic, environmental and community needs, including energy security.

4.89 The EWP acknowledged that Australian governments 'must collectively undertake further market, regulatory and institutional reforms to ensure the efficient supply of energy and responsiveness of demand'.⁹⁵

4.90 BP similarly acknowledged the role of government and emphasised that:

There can be no economic security for Australia without energy security, and energy security requires stable investment frameworks in order to attract and facilitate investment in operational energy systems.⁹⁶

4.91 BP contended that ideally, government policy that 'provides stable regulation, removes barriers to investment, improves access to resources

91 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 54.

92 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 54.

93 Mr Nic Moulis, Chief Executive Officer, Australasian Convenience and Petroleum Marketers Association (ACPMA), *Committee Hansard*, Canberra, 30 November 2012, p. 7.

94 Mr Nic Moulis, Chief Executive Officer, ACPMA, *Committee Hansard*, Canberra, 30 November 2012, p. 7.

95 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. ix.

96 BP, *Submission 13*, p. 8.

and modernises tax structures will encourage the necessary investment in energy security'.⁹⁷ It commented that:

Fortunately Australia has benefitted from industry deregulation over recent decades, as the level of state control has been gradually unwound by governments acknowledging the role a more dynamic and market driven industry plays in sustaining a competitive, secure and growing economy.⁹⁸

4.92 Mobil Oil asserted that with all Australian refineries facing 'serious commercial challenges', governments at the state and national level, should ensure that 'policy settings impacting this industry strike the right balance in addressing environmental and community needs, without adding unnecessary costs that threaten the long-term viability of the industry'.⁹⁹

4.93 Mobil Oil argued that maintaining a viable petroleum refining industry in Australia will require the government to 'seek to ease the increasing cost and regulatory burden on domestic refiners, especially where similar costs are not faced by overseas competitors'.¹⁰⁰

4.94 More broadly than fuel supply security, Mobil Oil also suggested that:

... the Government needs to consider the strategic implications of having (or potentially not having) domestic refining capacity and factor that fully into its broad industry policies.¹⁰¹

Dealing with emergency situations

4.95 In relation to liquid fuel supplies, in the event of circumstances that cannot be addressed through market forces, the government may need to step in to help minimise the negative economic and social impacts. However, the Australian Government's position is that this should only be as a last resort. The EWP argued that:

Diversity of supply prevents over-reliance on any single supply source and helps mitigate risks from potential supply disruptions. Australian governments at all levels will not allow energy security to be compromised and will intervene to maintain supply if necessary. However, government intervention should always be a last resort ...¹⁰²

97 BP, *Submission 13*, p. 3.

98 BP, *Submission 13*, p. 8.

99 Mobil Oil, *Submission 17*, p. 5.

100 Mobil Oil, *Submission 17*, p. 6.

101 Mobil Oil, *Submission 17*, p. 6.

102 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 53.

- 4.96 State and territory governments have constitutional responsibility for planning and coordinating emergency responses within their jurisdictions. At the national level, the *Liquid Fuel Emergency Act 1984* (LFE Act) provides the Australian Government with the authority to prepare for, and manage, a national liquid fuel emergency. The majority of provisions in the LFE Act will only apply in extreme cases, when a national liquid fuels emergency has been declared.
- 4.97 The LFE Act also provides the Minister for Energy and Resources some contingency powers prior to the declaration of a national emergency, to direct fuel industry corporations to maintain particular levels of reserves, develop bulk allocation procedures and to maintain statistical information. This legislation is supported by the Liquid Fuel Emergency Guidelines to assist the Minister in making decisions under the Act.
- 4.98 Australian governments cooperate with the petroleum industry on the National Oil Supplies Emergency Committee (NOSEC) to formulate responses to a widespread fuel shortage.¹⁰³
- 4.99 However, Australia 'does not hold government-controlled or regulated industry stocks for drawdown in an emergency, and our capacity for short-term surge production and fuel-switching is limited'.¹⁰⁴ Australia relies on commercial stockholding practices of industry and market forces to deal with short-term supply global and domestic supply disruptions.
- 4.100 As member of the IEA, Australia is a part of the Co-ordinated Emergency Response Measures (CERM). However, the EWP outlined that:

To manage deeper disruptions without activating the *Liquid Fuel Emergency Act 1984* (which provides wide-ranging rationing powers to the Commonwealth Minister for Resources and Energy ...), we can only participate in an IEA-coordinated emergency response, or collective action, through a combination of market and industry mechanisms and voluntary demand restraint.

In the event of a fuel shortage with national implications or the need for Australia to meet its commitments to the IEA under treaty obligations, the Australian Government can activate the Liquid Fuel Emergency Act, which then provides the Minister for Resources and Energy with wide-ranging powers to control the drawdown, transfer and sale of industry stocks of crude oil and liquid fuels, to control the range of products produced by

103 RET, *Submission 18*, p. 5.

104 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 55.

Australian refineries and to direct bulk and retail sales of fuel across Australia.¹⁰⁵

IEA 90 day oil stockholdings

- 4.101 As an IEA member country since 1979, and now a net oil importer, Australia is obligated to maintain reserves of crude oil and/or product equivalent to 90 days of the prior year's average net oil imports. It is intended that governments should have direct access to these stocks, even if they are not government owned, so they can be utilised as part of the Co-ordinated Emergency Response Measures.¹⁰⁶
- 4.102 Member countries holding these reserves agree to cooperate and 'provide a rapid and flexible system of response to actual or imminent oil supply disruptions'.¹⁰⁷
- 4.103 Since joining the IEA, Australia has relied solely on commercial industry stocks to meet its stockholding obligations.¹⁰⁸ However, due to increasing net imports, Australia is no longer meeting its oil stockholding obligations as an IEA member.
- 4.104 The 2011 LFVA noted that an ACIL Tasman review found that the 2011 stocks would only reach 86 days of net oil imports.¹⁰⁹ The EWP acknowledged that:
- The projected long-term decline in Australian domestic oil production, combined with growing liquid fuel demand, suggests that Australia's IEA stockholding gap will continue to increase in the absence of action.¹¹⁰
- 4.105 At the roundtable hearing RET advised that the last publically released figure was that Australia had 74 days of oil stocks. RET stated:
- Our understanding is that the level of stocks has not declined or, if it has declined, it has not declined significantly. The issue is that our level of imports has increased quite significantly. That is why we are no longer meeting 90-day compliance.¹¹¹

105 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 55.

106 IEA website, < www.iea.org/aboutus/faqs/membership/>, viewed 21 November 2012.

107 IEA website, < www.iea.org/aboutus/faqs/membership/>, viewed 21 November 2012.

108 Australian Government, *National Energy Security Assessment 2011*, December 2011, p. 13.

109 ACIL Tasman, *Liquid fuels vulnerability report*, October 2011, p. xiii.

110 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 59.

111 Mr Brendan Morling, RET, *Committee Hansard*, Canberra, 30 November 2012, p. 25.

- 4.106 In considering Australia's non-compliance, the 2011 NESAs 'did not find any evidence that breaches of Australia's IEA stockholding obligation were an indication of a decline in domestic energy security'.¹¹²
- 4.107 The NESAs Competitive Pressures report found that future domestic refinery closures would affect product inventories, with each refinery closure increasing 'Australia's current deficit against the IEA target' by 105 000 tonnes (about 1.6 days of net imports). It noted that a physical emergency product stock may be needed to offset these losses.¹¹³
- 4.108 However, it qualified that 'in practice much of the stock held in a refinery is required for operation and therefore not readily useable in an emergency'. It estimated that usable stock would only reduce by around 60 million litres for a refinery closure, equating to about one third of a day's demand.¹¹⁴
- 4.109 Part of Australia's emergency response plan for addressing a supply shortage is to draw on IEA's emergency stockholdings. The LFVA 2011 found that IEA action can assist in supply disruptions, such as supply disruptions arising from Hurricane Katrina in 2005.¹¹⁵
- 4.110 However, it has been suggested that Australia's non-compliance with the 90 day stockholding obligation may hinder Australia's ability to access international stockholdings in the event of an oil supply emergency.¹¹⁶ The NRMA called for the Government to take action to consider the implications of not meeting the 90 day stockholding obligation.¹¹⁷
- 4.111 Mr Velins agreed that the issue needs consideration by government, and suggested that it would 'not be reasonable to expect any IEA member to come to Australia's assistance if Australia itself has decided that it does not need to comply with the requirements of membership'.¹¹⁸
- 4.112 However, the AIP argued that 'any emergency stockholdings for Australia over and above normal commercial requirements is not justified on energy security grounds'.¹¹⁹ The AIP argued against increasing stockpiles just for

112 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 59.

113 Hale & Twomey Limited, *National Energy Security Assessment (NESA) Identified Issues: Competitive Pressures on Domestic Refining*, Prepared for the Department of Resources, Energy and Tourism, 29 June 2012, p. iv.

114 Hale & Twomey Limited, *National Energy Security Assessment (NESA) Identified Issues: Competitive Pressures on Domestic Refining*, Prepared for the Department of Resources, Energy and Tourism, 29 June 2012, p. iv.

115 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 51.

116 See Australian Automobile Association, *Submission 16*, p. 2;

117 See NRMA, *Submission 15*, p. [9].

118 Mr Eriks Velins, *Submission 1*, p. 5.

119 AIP, *Submission 14*, p. 23.

'international compliance reasons' if there is not a sound commercial basis for that decision. It stated:

It is AIP's view that any consideration of emergency stockholdings requires very careful examination of the costs of stockpiling against the risk-weighted benefits of such action and how Australian emergency stockholdings will contribute to an IEA collective action in the event of a global supply disruption.¹²⁰

- 4.113 Gas Energy Australia noted that 'maintaining a national strategic petroleum reserve is not cheap', and argued that 'while releases from a stockpile can ameliorate temporary supply disruptions, they cannot offset long-term market disruptions'.¹²¹
- 4.114 The Australian Government has already acknowledged that this is an issue that needs to be addressed, and is currently considering options to respond to Australia's non-compliance with the 90 day oil stockholding obligation.¹²²

Conclusion

- 4.115 Energy security is fundamental to Australia's prosperity. It helps to deliver the economic and social outcomes we expect. The government has a rolling two year review of our energy security through the National Energy Security Assessment (NESA). The first assessment was conducted in 2009 with a follow-up review in 2011. NESA provides a review of our energy security needs relating to liquid fuels, natural gas and electricity. The 2011 review found that our energy security needs remain broadly consistent with the 2009 review, which found that Australia's energy security situation is meeting Australia's economic and social needs, albeit with some emerging market policy uncertainties that could have implications for managing our current level of energy security.
- 4.116 Our liquid fuel energy security remains largely unchanged from 2009 and is assessed as high trending to moderate in the long term. High energy security is when the economic and social needs of Australia are being met. The key to our high energy security is our access to well-functioning markets for liquid fuels and supply chains with a high degree of resilience. This means that Australia can source its liquid fuel needs from a diversity

120 AIP, *Submission 14*, p. 24.

121 Gas Energy Australia, *Submission 6*, pp. 2-3.

122 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 59; Mr Brendan Morling, RET, *Committee Hansard*, Canberra, 30 November 2012, p. 25.

of sources so that if one source becomes unavailable other sources can meet demand.

- 4.117 Australia has its own crude oil reserves and some refining capacity. It should be noted that our own refineries are not well equipped to refine crude oil from our own reserves. Australian refineries import over 80 per cent of crude oil and other refinery feedstock. The bulk of Australia's crude is exported. Our ability to access reliable supply chains for both refined fuel and crude provides us with more energy security than having our own crude oil reserves and some refining capacity.
- 4.118 The closure of the Clyde and Kurnell refineries have resulted in a reduction in our refining capacity, but the Energy White Paper concludes that this decline 'is not considered to impair Australia's liquid fuel security'. Shell noted that converting facilities from refineries to terminal mode will 'provide an equivalent or better level of supply security for the NSW marketplace as we will not be required to source products at late notice during periods of unplanned refinery shutdowns'.
- 4.119 It should be noted that in recent decades, a lack of supply in the Australian market has only been due to our own refinery shutdowns, not lack of international supply of crude or refined fuel. For example, the recent temporary shutdown of both refineries in Victoria in December 2012 resulted in disruptions to fuel supplies in the state and to South Australian customers. Once operations resumed domestic production levels increased and were supplemented by imported product to help address the backlog due to the shortages during the shutdowns.
- 4.120 The long term assessment made by NESAs is out to 2035, and makes assessments about adequacy, reliability and competitiveness. It rates our fuel security as high in the short and medium term, but trending to moderate in the long term. Long term trends reflect uncertainty in predicting that far ahead, but also reflect the likelihood that crude will have to be sourced from countries that are not geopolitically stable, and from non-conventional sources, which will be more expensive to extract.
- 4.121 One can understand that closure of refineries poses little threat in a market of rapid expansion in Asia leading to an oversupply that is likely to last for some time. It is less easy to predict whether maintaining a strong ability to refine crude, including our own, will be a necessary part of the energy security mix 20 years from now and, if so, whether Australia's aging refineries will be suitable and for how long and at what cost.
- 4.122 The committee supports the Government Biennial review of energy security needs. It is particularly important that Australia's response to medium to long term changes in global supply and demand is managed in an ordered way.

- 4.123 We do know that Australia is blessed with energy options and that energy security is enhanced by diversifying options, as long as the market is able to supply those options in an affordable and reliable way.
- 4.124 NESAs noted that alternative fuels are another potential source of future liquid fuel supply although this is not expected to be significant over the medium term. However, NESAs commented that over the long term 'advanced alternative fuel and technology options, including electric vehicles, are emerging and are likely to have an increasing role'. NESAs noted that in the medium term, there could be increased demand for biofuels as a result of state government policy.
- 4.125 For this reason, the committee supports the Government position to encourage market driven investment in new energy sources. The EWP notes that there is likely to be scope for biodiesel to become a mainstream fuel (or fuel blend) in the heavy-duty vehicle sector, with a forecast use rate of 76 per cent by 2050.
- 4.126 NESAs provide a positive assessment about Australia's energy security needs. In addition, there is an emergency response capacity to deal with the impact of a sudden oil supply shortage. The EWP noted that 'Australian governments at all levels will intervene to maintain supply if necessary'. At the national level, the *Liquid Fuel Emergency Act 1984* provides the Australian Government with the authority to prepare for, and manage, a national liquid fuel emergency. In addition, Australia is a member of the International Energy Association (IEA) which can provide coordinated measures by IEA member countries to increase supply and reduce demand.
- 4.127 As a net oil importer, Australia is obligated to maintain reserves of crude oil and/or product equivalent to 90 days of the prior year's average net oil imports. Currently, Australia is not meeting this obligation. The committee notes that the Australian Government has acknowledged this issue and is already investigating options to address Australia's non-compliance.
- 4.128 In conclusion, Australia is well served by a rolling strategy to review our energy security through NESAs and to pursue a market based approach to the development of new fuels. Our energy security is high trending to medium over the long term. The key feature of our liquid energy security is our access to reliable, mature and diverse supply chains.

Employment issues

Introduction

- 5.1 The closure of the Kurnell and Clyde refineries will inevitably lead to the displacement of some workers. This chapter reviews the broad employment environment for employees in the refining and energy sector, the impacts of proposed refinery closures and the transition arrangements in place for displaced workers.
- 5.2 A significant feature of the recent and anticipated closures of Australian refineries is that they are relatively orderly, with a long lead in. This is important not only to allow the market time to readjust supply chains, but also to provide displaced workers with time to seek and secure new job opportunities.

Background

- 5.3 Employment in the domestic energy sector is adjusting to support the changing needs of industry. According to the Australian Government's *Energy White Paper 2012 (EWP)*, the energy industry directly provides more than 100 000 jobs and indirectly supports many more.¹ It is forecast that jobs in the sector will grow by 3.9 per cent annually, for the next five years. Employment in oil extraction is forecast to grow at 7.3 per cent.²

1 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 12.

2 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 206.

- 5.4 In general the energy sector's workforce is more highly skilled than other industries.³ This characterisation holds for petroleum refining and fuel manufacturing industry, according to the Department of Resources, Energy and Tourism (RET) 'a large proportion of workers in the sector are employed in higher skilled occupational groups'.⁴ The most common individual occupation is Chemical, Gas, Petroleum and Power Generation Plant Operators.

Table 5.1 Main employing occupations in the Petroleum Refining and Petroleum Fuel Manufacturing sector, 2011

Occupation	Number employed	Employment share of occupation (%)
Chemical, Gas, Petroleum and Power Generation Plant Operators	1100	20.0
Metal Fitters and Machinists	310	5.5
Production Managers	180	3.2
Industrial, Mechanical and Production Engineers	130	2.3
Other Building and Engineering Technicians	120	2.1
Electricians	110	1.9
Mining Engineers	100	1.7
Structural Steel Construction Workers	100	1.7
Chemists, and Food and Wine Scientists	90	1.7
Engineering Professionals (not further defined)	90	1.6

Source RET, *Submission 18, Table 5, p. 19.*

- 5.5 The employment prospects in the oil refinery industry diverge from the wider energy sector's story of strong growth and buoyant employment. At present RET has indicated that 5 500 people are directly employed in the sector.⁵ Only 240 workers have joined the sector since 2006 and with the closure of the Kurnell refinery by mid-2014 this moderate growth in jobs will decline.⁶
- 5.6 In his submission, Mr Velins posited that a range of factors have contributed to reduced employment in refineries since the 1960s:

Reduction in employment started once protective tariffs were removed in the early 1960s. The next waves of change came in the

3 Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p. 208.

4 Department of Resources, Energy and Tourism (RET), *Submission 18*, p. 28.

5 RET, *Submission 18*, p. 18.

6 RET, *Submission 18*, p. 28.

late 1960s when mandatory processing of Gippsland crude oil commenced, as most refiners then lost the upstream margin from their own fields overseas which had propped up their downstream (refining, distribution and marketing) operations. Changed maintenance processes and the move to centralised control rooms, automated analytical instruments and the use of process control computers in [the] early 1990s resulted in further reductions in staff.⁷

- 5.7 The inquiry has highlighted that the general narrative of the refinery sector does not necessarily reflect what is happening in practice. It is clear that employment prospects vary from employer to employer, and from refinery to refinery. During the hearing Mobil Oil stressed that the sector was viable and that refining would continue:

A lot of the discussion over the course of today has seemed to me to be working on the view that there is no future for the refining industry in Australia. I do not agree with that, fundamentally. I think there is a business for refining in Australia. It is important to the economy. These are high-tech, high-skilled jobs that are very important for the long-term viability and vibrancy of the Australian economy. It is important from an education perspective. It is important from an infrastructure perspective.⁸

- 5.8 As the sector adapts it is crucial that both government and industry work to ensure that the skills utilised in the oil refining sector are preserved and that displaced workers have viable employment options.

Discussion

Employment conditions

- 5.9 The Construction, Forestry, Mining and Energy Union (CFMEU) told the committee that the average age of workers was early to mid-50s and the average length of service for workers was 20 years.⁹ According to

7 Mr Eriks Velins, *Submission 1*, p. 4.

8 Mr Andrew Warrell, Mobil Oil, *Committee Hansard*, Canberra, 30 November 2012, p. 31.

9 Ms Lorraine Usher, Construction, Forestry, Mining and Energy Union (CFMEU), *Committee Hansard*, Canberra, 30 November 2012, p. 33. Also see RET, *Submission 18*, p. 22.

Shell, refinery workers earn between \$130 000 and \$150 000 per annum for a 35-hour week and a nine-day fortnight.¹⁰

5.10 The evidence indicates that workers in the sector are highly skilled, relative to other industries.¹¹ BP claimed that the market for skilled employees was 'highly buoyant' and that the resources boom had driven wage inflation.¹²

5.11 For BP, labour is now the second largest cost associated with refineries, following crude feedstock. It stated

The Australian personnel cost index (that is, the cost of labour per barrel produced) is some four times more expensive in Australia than in the region. This is not just a challenge in comparison to Asian economies. On a global scale, skilled worker costs in US and European competitors are now substantially lower on a USD equivalent basis through a combination of exchange rate movements and the very high domestic wage inflation over recent years, which have not been compensated for in productivity improvements. This is compounded by comparatively generous non-cash benefits of domestic labour and its impact on productivity.¹³

5.12 Shell stated that labour costs had increased three-fold over the last ten years.¹⁴ The CFMEU countered this claim, and argued that increases were a function of the strong Australian dollar.¹⁵

5.13 Caltex acknowledged that wages did affect the company's profitability, but stressed that wages did not factor into its decision to close the Kurnell refinery:

... in the case of Kurnell, where we have made the decision to close, had the AWU offered to halve their wage rates – they did not; but had they – it probably would not have changed the outcome. Quite frankly, the numbers were so compelling against it that it was not about those sorts of issues. Whether it was tax or other imposts, they were not at the margin. The structure of the refinery, the fact that it is energy inefficient, the fact that it was set up to make regular grade gasoline and is constrained to a

10 Mr Andrew Smith, Shell, *Committee Hansard*, Canberra, 30 November 2012, p. 43.

11 RET, *Submission 18*, p.18.

12 BP, *Submission 13*, p. 12.

13 BP, *Submission 13*, p. 7.

14 Mr Andrew Smith, Shell, *Committee Hansard*, Canberra, 30 November 2012, p. 37.

15 Mr Peter Colley, CFMEU, *Committee Hansard*, Canberra, 30 November 2012, p. 38.

particular type of crude just meant that its fate was set by the hardware. However, when the operation starts to become marginal then these things do start to become more and more important.¹⁶

Employment in the sector and the impact of closures

- 5.14 The employment figures for the petroleum refining and fuel manufacturing industry, and the impact of closures, varied between sources. According to RET approximately 5 500 people were employed in 2011 in the refinery industry.¹⁷ The Australian Institute of Petroleum (AIP) has estimated that the industry directly and indirectly provides between 3 500 and 4 000 jobs.¹⁸ The Australian Manufacturing Workers' Union (AMWU) estimated that there are 4 700 permanent and contract staff directly employed by sector.¹⁹
- 5.15 Industry and the unions provided the committee with refinery specific employment figures. For example, BP submitted that they directly employ 828 workers at the Kwinana and Bulwer Island refineries.²⁰ Another 500 contract workers provide labour such as specialist engineering and maintenance services. Periodically, the labour force increases by an additional 500 workers during shutdown activities.²¹
- 5.16 It has been estimated that the closures of the Clyde and Kurnell refineries will directly result in the loss of 490²² and 700²³ permanent jobs respectively. These figures however do not include contract workers or the indirect job losses to associated businesses and services.
- 5.17 According to Shell, its decision to close the Clyde refinery and convert it to an import terminal would lead to the loss of 200 jobs, from a total of 310.²⁴ It is anticipated that 180 people will be made redundant (of which 60 are expected to retire); 20 employees resigned; and more than 100 employees have been redeployed within Shell (13 employees at the upstream Prelude

16 Mr Gary Smith, Caltex, *Committee Hansard*, Canberra, 30 November 2012, pp. 39-40.

17 RET, *Submission 18*, p. 18.

18 Australian Institute of Petroleum (AIP), *Downstream Petroleum 2011*, p. 9.

19 Australian Manufacturing Workers' Union (AMWU), *Submission 7*, p. 4.

20 BP, *Submission 13*, p. 10.

21 BP, *Submission 13*, p. 10.

22 CFMEU, *Submission 9*, Attachment 2: Strategic Economics and SGS Economics and Planning, *The Future of Clyde Refinery – A report to CFMEU Mining & Energy and AMWU*, July 2011, p. 54

23 Caltex, *Submission 12*, p. [13]; AWU, *Submission 4*, p. 17.

24 Shell, *Submission 20*, p. 12.

project and 90 employees in the terminal conversion or the operational terminal).²⁵

5.18 The CFMEU provided the committee with a report on the effects of closing the Clyde refinery.²⁶ The report stated that the closure would result in the direct loss of 490 jobs and the indirect loss of 1 700 jobs in NSW.²⁷ In its submission the CFMEU stated that the refinery directly employs 350 workers and around 220 contractors.²⁸ The CFMEU evidence contends the total job losses across Australia will be around 2 200.²⁹ It is anticipated that indirectly jobs will be lost in the plastics and petrochemical industry.

5.19 Caltex announced that the Kurnell refinery will close in mid-2014. Caltex has estimated that 430 Caltex employees and 300 contractors will be directly affected.³⁰ The effects of the closure are compounded for the town of Kurnell as its total population is only 2 200.³¹ The AWU posits that '[t]he sheer quantum of jobs being lost in this instance will ensure that further jobs are lost not merely in the supply chain but in community business'.³² The AWU has stated:

It is likely that the removal of such a large volume of jobs, income and resulting consumption from such a small community will have a deleterious effect on local businesses and further increase job losses and closures in the supply chain and in other sectors that rely on income from refinery workers.³³

5.20 Redeployment within the companies was an option for some employees. During the hearing Caltex stated:

Since the announcement, we have lost about 20 employees from Kurnell, but 13 of those employees have actually moved to our sister refinery in Brisbane. So within the industry there is some transferring of skills, and we are proactively promoting that. But, in terms of other activities, we are doing a lot of the same things that Shell are doing, as Andrew Smith talked about. We are having employment fairs. We had Chevron visit just recently, seeking

25 Shell, *Submission 20*, p. 12.

26 See CFMEU, *Submission 9*.

27 CFMEU, *Submission 9*, p. [54]; Mr Peter Colley, CFMEU, *Committee Hansard*, Canberra, 30 November 2012, p. 36.

28 CFMEU, *Submission 9*, p. 2.

29 CFMEU, *Submission 9*, p. 2.

30 Caltex, *Submission 12*, p. [14].

31 Australian Workers' Union (AWU), *Submission 4*, p. 17.

32 AWU, *Submission 4*, p. 18.

33 AWU, *Submission 4*, p. 17.

interest in LNG roles that they are involved with. We are supporting retraining of all our employees, and every employee has an opportunity to get funding from the company to assist in retraining activities as well.³⁴

Downstream impacts

5.21 The unions and industry are cognisant that the impact of closures extends beyond the refineries to associated service providers, local businesses and downstream industries.³⁵

5.22 The AMU provided an example of the downstream impacts of the Kurnell refinery closure:

A tangible example of the net impact of the Caltex closure is the recent shutdown of the local lubrication refinery. This closure led to the loss of 100 direct jobs and also led to the closure of a downstream supplier and the loss of a further 60 jobs. The sheer quantum of jobs being lost in this instance will ensure that further jobs are lost not merely in the supply chain but in community businesses.³⁶

5.23 Caltex has provided the committee with a list of businesses, both upstream and downstream, which will be affected by the closure. These include:

- the possible closure of LyondellBasell and HCE;
- loss of work for various contractors; and
- loss of income for some 470 small businesses which supply the refinery, at a quarterly spend of approximately \$50 million.³⁷

5.24 LyondellBasell submitted to the committee that it employs 175 people and is the only Australian manufacturer of polypropylene. In its submission LyondellBasell did not discuss the closure of the Clyde refinery and its impact. However, it did state that it sourced 95 per cent of its key raw materials from Australian refineries and that it purchased and shared utilities and services onsite with Shell at both the Clyde and Geelong refineries.³⁸ During the hearing, the CFMEU stated:

34 Mr Gary Smith, Caltex, *Committee Hansard*, Canberra, 30 November 2012, p. 43.

35 For example AMWU, *Submission 4*, p. 4; CFMEU, *Submission 9*, p. 2;

36 AWU, *Submission 4*, p. 18.

37 Caltex, *Submission 12*, p. [14].

38 LyondellBasell, *Submission 19*, p. 1.

... aside from the direct job losses in oil refining, there are other flow-on impacts to firms like LyondellBasell in terms of high-skilled, complex manufacturing jobs, high-wage, high-skill jobs, so there is likely to be a permanent loss of that manufacturing capacity and those manufacturing skills as a result of large parts of the plastics and petrochemicals industry shutting down.³⁹

- 5.25 In relation to the possible effects of refinery closures on businesses like LyondellBasell, RET commented:

Oil refinery closures in Australia are therefore likely to have flow on effects on downstream manufacturing activity through reduced availability of feedstock for the chemicals and plastics industry. While many of the final products could be imported, and some inputs could be replaced with imports, there are likely to be adjustment pressures on the chemicals industry.⁴⁰

Skills retention

- 5.26 The unions and industry recognise the importance of refineries as places to employ and train high skilled workers.⁴¹ During the hearing Mobil Oil stated:

One thing we feel people need to consider is not only the supply and demand implications but ultimately the jobs that are involved. These are high-tech, high-skill jobs. If we provide the right environment for these types of jobs, then we provide a draw in our universities and the infrastructure of the manufacturing industry as somewhere to develop engineers, scientists, high-skilled fitters and tradespeople and things. If you do not have that there, you will not have something that is resilient to the commodity cycle. People seem to forget that commodities do go through cycles over time. So we need a place where those high-skilled workers can reside. If we do not have that, as we go through the commodity cycle all those skills atrophy.⁴²

39 Mr Peter Colley, CFMEU, *Committee Hansard*, Canberra, 30 November 2012, p. 36.

40 RET, *Submission 18*, p. 22.

41 Mr Peter Colley, CFMEU, *Committee Hansard*, Canberra, 30 November 2012, p. 36; Mr Andrew Warrell, Mobil Oil, *Committee Hansard*, Canberra, 30 November 2012, p. 4.

42 Mr Andrew Warrell, Mobil Oil, *Committee Hansard*, Canberra, 30 November 2012, p. 4.

- 5.27 Similarly, the CFMEU discussed the impact the closures would have on the capacity of tertiary institutions to provide practical training:

A particular point that was raised with us by people in the University of Sydney and UNSW was that they basically place people undertaking tertiary education – engineering and petrochemicals people – in those refineries. Those training opportunities are no longer going to be there. So, for major universities in Sydney, it is going to be a problem getting the on-site training positions for their students. So we are talking about the loss of tertiary skills, graduate skills, as well.⁴³

- 5.28 The AIP makes the point that the refinery industry is technologically advanced and as such employs and brings to Australia highly skilled staff:

International expertise flows readily into the Australian refinery workforce. There are also many ‘spill-over’ effects into other industries through the transfer of technical skills and expertise to other businesses.⁴⁴

Alternative employment opportunities

- 5.29 The committee heard that the skills of displaced workers were in high demand in other areas of the resources sectors, particularly LNG. Industry and government indicated that they were committed to assisting displaced workers find alternative employment. In the EWP, the Australian Government indicated that there will be ‘strong demand’ for workers in the energy resources sector generally and it is aiming to facilitate workforce mobility to fulfil demand.⁴⁵ Shell told the committee:

Most of the skills that are in the refinery area are in demand internationally, ranging from somebody who is a panel operator, who typically would have at least 10 years experience, to the engineers and management. These are all skills that are in strong demand internationally. We have a number of the workforce, ranging from operators to instrument supervisors to electrical supervisors to various engineering disciplines, working internationally and in Shell projects offshore.⁴⁶

43 Mr Peter Colley, CFMEU, *Committee Hansard*, Canberra, 30 November 2012, p. 36.

44 AIP, *Downstream Petroleum 2011*, p. 9.

45 Australian Government, *Energy White Paper 2012, Australia’s energy transformation*, p. 208.

46 Mr Andrew Smith, Shell, *Committee Hansard*, Canberra, 30 November 2012, p. 41.

- 5.30 In its submission, Shell has cautioned that it has experienced difficulty redeploying employees, despite the workers having the relative training and skills required for their new positions:

The small number of employees who opted to try for roles in our upstream business supports the view that Australian workers on the whole are not readily mobile – despite many of these workers having the right skills and training to easily transfer to the upstream business.⁴⁷

- 5.31 Shell concluded that there are jobs available in upstream LNG projects, however, employees will need to be mobile.⁴⁸

- 5.32 In his submission, Mr Velins suggested that the growth in LNG plants would provide employment opportunities for refinery workers.⁴⁹ Caltex submitted that:

While refinery closures inevitably reduce employment in the sector, the avoidance of losses in refining frees up capital for more productive use within the economy, boosting employment overall; in addition, Australia has a shortage of skilled labour broadly of the type released by refinery closures, so it is expected labour will be redeployed overall into more productive uses.⁵⁰

- 5.33 The AWU told the committee that they had received anecdotal reports that Kurnell employees who were actively looking for new jobs were experiencing difficulties:

You are talking about these highly skilled operators. They have been through the rigorous process of applying for jobs, even in a FIFO capacity into Western Australia and those rural areas, and only a small handful of guys have been able to secure work in those growth industries, which is concerning. It points to whether or not there is capacity for displaced highly skilled manufacturing workers to find a path into these growth sectors of the economy. There appears to be a disconnect there, and that is something of high concern, given the already huge impact of losing a job and the probability of finding employment thereafter.⁵¹

47 Shell, *Submission 20*, p. 13.

48 Shell, *Submission 20*, p. 14.

49 Mr Eriks Velins, *Submission 1*, pp. 5-6.

50 Caltex, *Submission 12*, p. [13].

51 Mr Misha Zelinsky, AWU, *Committee Hansard*, Canberra, 30 November 2012, p. 37.

5.34 In relation to the closure of the Clyde refinery, it was reported that:

It is likely that some of the staff directly affected by the closure could find employment elsewhere. However, this transition period is likely to create short-term hardships for these workers and their families whilst they invest time and resources to re-skill and/or up-skill to remain in the workforce.⁵²

5.35 In its submission RET identified the relative opportunities of workers depending on their job description, in general it was concluded that:

Workers displaced by refinery closures will have varying job prospects, depending on their skills and abilities, and depending on their willingness to seek work in other sectors, occupations or locations. Some workers with highly specialised skills may need to undergo retraining in order to take advantage of available job opportunities.⁵³

5.36 RET advised the committee of the measures the Australian Government would undertake to assist redundant employees, these included:

- a 'Jobs Market' for employees of the Kurnell refinery, which would bring together job seekers with employers and training organisations;
- the new 'Resources Sector Jobs Board' which is a website advertising job vacancies;
- general employment programs -- such as employment support with a 'Job Services Australia provider' for help with resume preparation, job applications, interview skills and career advice; the 'Experience+Career Advice service' for redundant workers over 45 year; financial advice from Centrelink;
- general skills development programs in particular the 'Australian Government Skills Connect initiative' and the 'Building Australia's Future Workforce package'.⁵⁴

5.37 Caltex told the committee that it is 'committed to supporting its people with the highest level of care, attention and respect'.⁵⁵ To this end Caltex will be providing displaced workers with a range of services, including

52 CFMEU, *Submission 9, Attachment 2: Strategic Economics and SGS Economics and Planning, The Future of Clyde Refinery – A report to CFMEU Mining & Energy and AMWU*, July 2011, p. 54.

53 RET, *Submission 18*, p. 29.

54 RET, *Submission 18*, p. 20.

55 Caltex, *Submission 12*, p. [13].

redundancy benefits, vocational training allowances and outplacement services, which include resume writing and interview skills training.⁵⁶

5.38 Shell has also submitted that it is committed to assist displaced staff:

As part of the conversion project Shell has invested a considerable amount of time and effort to equip our staff for life outside Shell. Apart from the almost 20 different programmes and seminars held for our employees post the announcement, we have run a series of Career Expos where local and National employers could engage with our employees on future job opportunities. The employment opportunities presented at these Expos resulted in employees feeling more confident that they could secure employment (even in Sydney) post the conversion of Clyde - including nine direct offers of employment from employers attending these Expos. In addition Shell worked with the local TAFE College on having more than 160 employees receive recognition of prior learning and thereby receive various trade certificates and qualifications.⁵⁷

Conclusion

5.39 The energy sector is a major employer providing work directly and indirectly for over 100 000 Australians. It is forecast that jobs in the sector will grow by 3.9 per cent annually, for the next five years. Employment in oil extraction is forecast to grow at 7.3 per cent. Employment in the oil refining sector diverges from the wider energy sector. At present, 5 500 people are directly employed in the sector with growth declining because of reducing refining capacity.

5.40 In general the energy sector's workforce is more highly skilled than other industries. This characterisation holds for petroleum refining and the fuel manufacturing industry. A large proportion of workers in the sector are employed in higher skilled occupational groups. It can take up to fifteen years for employees to become fully skilled in certain fields. So as refining capacity reduces there can be significant loss of skill, which cannot be easily replaced. This potential skill loss is something that the oil companies should monitor.

56 Caltex, *Submission 12*, p. [13].

57 Shell, *Submission 20*, p. 13.

- 5.41 Evidence presented showed that the people employed in the oil refinery industry are highly skilled, productive and, as is indicated by the average length of service, loyal.
- 5.42 Five refineries are remaining open and the committee did not receive any indication that they would be closing in the short-term. Indeed, Mobil Oil and Caltex indicated that refining was an important core business for them. The cooperative approach that Mobil and its employees are taking at the Altona refinery is commendable.
- 5.43 Where closures are inevitable, the committee holds the view that reducing undue stress and assisting workers to adjust to changing employment circumstances should be a priority for both industry and government. The committee believes this can only occur when there is a level of certainty for workers and targeted support. To date, structural changes have occurred in a relatively orderly manner, with long lead times between closures being announced and workforce having to adjust. Efforts to redeploy and reskill displaced workers must remain a priority.

Julie Owens MP
Chair
30 January 2013



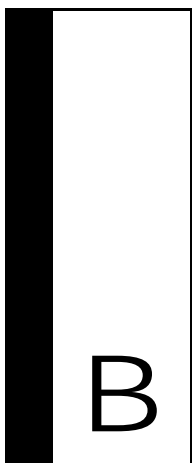
Appendix A – List of Submissions

Submissions

No.

1. Mr Eriks Velins
2. Woolworths Limited
3. Mr Matt Mushalik
4. Australian Workers' Union
- 4.1 Australian Workers' Union (Supplementary submission)
5. Board of Airline Representatives of Australia
6. Gas Energy Australia
7. Australian Manufacturing Workers' Union
8. Business Council of Australia
9. Construction, Forestry, Mining and Energy Union
10. Service Station Association
11. Federal Chamber of Automotive Industries
12. Caltex Australia
13. BP Australia Pty Ltd
14. Australian Institute of Petroleum
15. NRMA Motoring and Services
16. Australian Automobile Association
17. Mobil Oil Australia Pty Ltd
18. Department of Resources, Energy and Tourism

- 18.1 Department of Resources, Energy and Tourism
(Supplementary submission)
- 19. LyondellBasell
- 20. Shell Australia Limited
- 21. Renewable Fuels Australia
- 22. National Union of Workers



Appendix B – Hearing and Witnesses

Friday, 30 November 2012—Canberra

Australasian Convenience and Petroleum Marketers Association

Mr Nic Moulis, Chief Executive Officer

Australian Automobile Association

Ms Stefanee Lovett, Director, Policy and Advocacy

Australian Competition and Consumer Commission

Mr Mark Pearson, Deputy Chief Executive Officer, Regulation

Mr Gary Dobinson, Director, Fuel Transport and Prices Oversight

Mr Matthew Schroder, General Manager, Fuel, Transport and Prices Oversight

Australian Institute of Petroleum

Dr John Tilley, Executive Director

Mr Paul Barrett, Deputy Executive Director

Australian Workers' Union

Mr Misha Zelinsky, National Policy and Economics Officer

BP Australia Pty Ltd

Mr Richard Wise, Director, Government Affairs

Mr David Stuart, Government Affairs Adviser

Mr Peter Bottrell, Marketing Supply Manager

Caltex Australia Ltd

Mr Gary Smith, General Manager, Refining and Supply

Mr Frank Topham, Manager, Government Affairs and Media

Construction, Forestry, Mining and Energy Union

Ms Lorraine Usher, Secretary, NSW Energy District

Mr Peter Colley, National Research Director

Mr Graham Larcombe, Consultant

Department of Education, Employment and Workplace Relations

Mr Nick Mowbray, Director

Ms Carmel O'Regan, Director

Department of Industry, Innovation, Science, Research and Tertiary Education

Mr Mike Lawson, Head of Manufacturing Division

Mr James Pitman, Acting Assistant Manager, Chemicals and Plastics Policy Section

Department of Resources, Energy and Tourism

Mr Martin Hoffman, Deputy Secretary

Ms Robyn Casey, Acting General Manager, Energy Security Branch

Mr Brendan Morling, Head of Division, Energy

Mr Stephen Woolcott, Manager, Transport Fuels

Mr Stephen Norman, Acting Manager, Liquid Fuel Security

Mobil Oil Australia Pty Ltd

Mr Andrew Warrell, Director, Refining, Australia and New Zealand

Mr Alan Bailey, Manager, Issues and Government Relations, Public and Government Affairs

NRMA Motoring and Services

Mr Graham Blight, Non-Executive Director

Air Vice-Marshal (Retired) John Blackburn AO, Consultant

Shell Australia

Mr Andrew Smith, Vice President, Downstream Australia

Ms Jodie Haydon, Downstream HR Manager

Mr Mark McCallum, Government Relations

Mr Michael Pope, Manufacturing Strategy Adviser

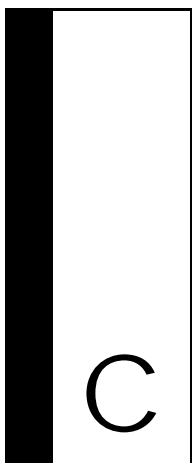
Ms Edwina Pribyl, Downstream Communications Manager

Mr Gary Schweizer, HR Manager, Clyde Refinery

Mr Paul Zennaro, Head of Media Relations Australia

Private capacity

Dr Vlado Vivoda



Appendix C – List of reports

Below is a list of reports tabled by the House of Representatives Standing Committee on Economics in the 43rd Parliament.

No.

1. Inquiry into the Income Tax Rates Amendment (Temporary Flood Reconstruction Levy) Bill 2011, and the Tax Laws Amendment (Temporary Flood Reconstruction Levy) Bill 2011
2. Inquiry into Indigenous economic development in Queensland and advisory report on the Wild Rivers (Environmental Management) Bill 2010
3. Advisory report on the Taxation of Alternative Fuels Bills 2011
4. Advisory report on the National Consumer Credit Protection Amendment (Home Loans and Credit Cards) Bill 2011
5. Advisory report on the Competition and Consumer (Price Signalling) Amendment Bill 2010, and the Competition and Consumer Amendment Bill (No. 1) 2011
6. Advisory report on the Food Standards Amendment (Truth in Labelling - Palm Oil) Bill 2011
7. Advisory report on the Corporations (Fees) Amendment Bill 2011
8. Advisory report on the Tax Laws Amendment (2011 Measures No. 8) Bill 2011, and the Pay As You Go Withholding Non-compliance Tax Bill 2011
9. Advisory report on the Minerals Resource Rent Tax Bill 2011 and related bills
10. Review of the Tax Laws Amendment (2011 No. 9 Measures) Bill 2011

11. Review of the Insurance Contracts Amendment Bill 2011
12. Advisory report on the Tax and Superannuation Laws Amendment (2012 Measures No. 1) Bill 2012
13. Advisory report on the Clean Energy Finance Corporation, Clean Energy Legislation Amendment Bill 2012, Clean Energy (Customs Tariff Amendment) Bill 2012, and Clean Energy (Excise Tariff Legislation Amendment) Bill 2012
14. Advisory Report on the Tax Laws Amendment (2012 Measures No. 2) Bill 2012, Pay As You Go Withholding Non-compliance Tax Bill 2012, Income Tax (Managed Investment Trust Withholding Tax) Amendment Bill 2012, and Passenger Movement Charge Amendment Bill 2012
15. Advisory Report on the Tax Laws Amendment (Managed Investment Trust Withholding Tax) Bill 2012
16. Advisory Report on the Tax Laws Amendment (2012 Measures No. 4) Bill 2012
17. Report on the Exposure Draft of the Australian Charities and Not-for-profits Commission Bills 2012
18. Advisory Report on the Clean Energy Amendment (International Emissions Trading and Other Measures) Bill 2012, Clean Energy (Charges – Excise) Amendment Bill 2012, Clean Energy (Charges – Customs) Amendment Bill 2012, Excise Tariff Amendment (Per-Tonne Carbon Price Equivalent) Bill 2012, Ozone Protection and Synthetic Greenhouse Gas (Import Levy) Amendment (Per-Tonne Carbon Price Equivalent) Bill 2012, Ozone Protection and Synthetic Greenhouse Gas (Manufacture Levy) Amendment (Per-Tonne Carbon Price Equivalent) Bill 2012, and Clean Energy (Unit Issue Charge – Auctions) Amendment Bill 2012