2

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.

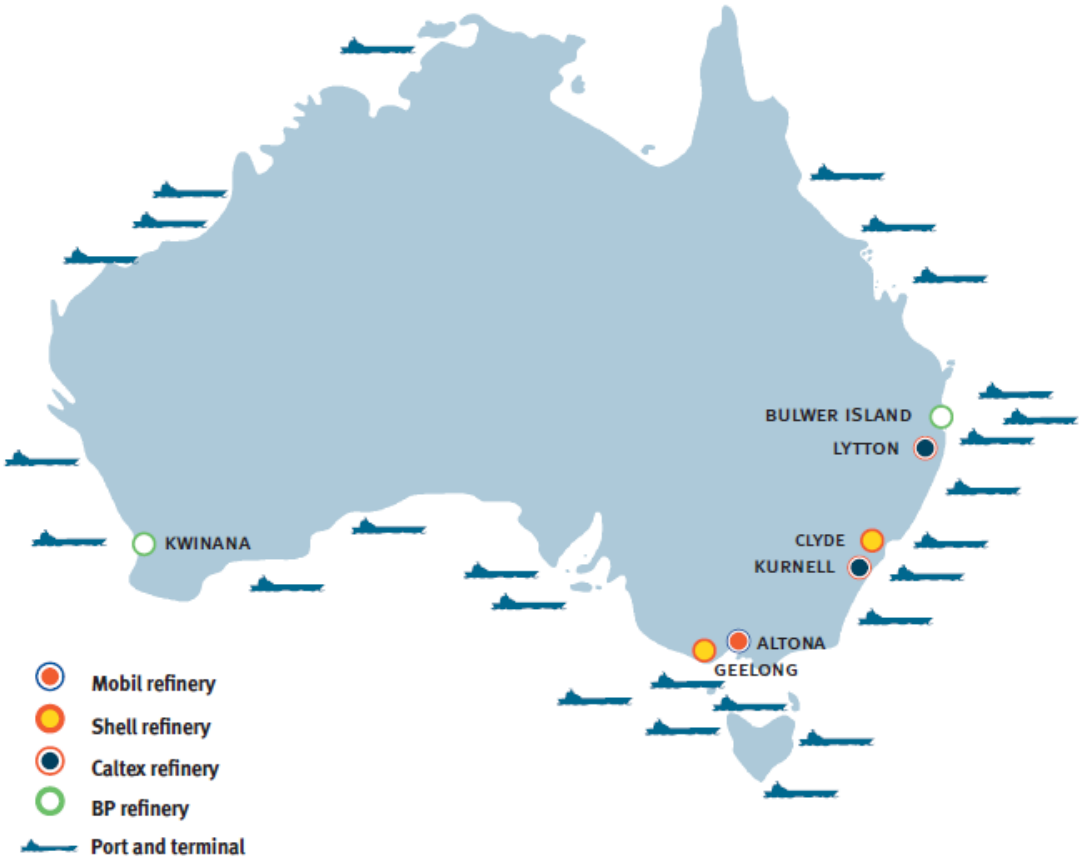
2.4 As a result, the trend has been to move away from domestic refining to a greater dependence on liquid fuel imports. This will include converting selected domestic refineries to import terminals. The companies have not sought government subsidies to continue the operation of these suboptimal refineries. 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) *Closing by mid-2014*	7820
Sydney	Clyde (Shell) *Closed in September 2012*	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

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'.