Australian Institute of Petroleum

Submission to the Inquiry into Australia's Oil Refinery Industry

Submission to:

House of Representatives
Standing Committee on Economics

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KEY MESSAGES

- There is a challenging market environment currently for the downstream petroleum industry – globally, regionally and domestically – and this environment is expected to endure for some years.
- This is particularly so for Australian refineries, given ongoing excess supply in the Asian region and the strong Australian dollar impacting on the outlook for domestic refining, and Australian refineries facing continued competitive pressure from Asian refineries which enjoy significant cost and scale advantages.
- In this market environment, the downstream petroleum industry requires a competitive market-based policy framework and stable investment environment for it to consider making significant infrastructure investments, as well as seek further efficiencies in refining and supply, to ensure ongoing supply security and reliability.
- As a result of industry investments and efforts to date, and Australia's efficient access to the global market for liquid fuels, the industry expects to continue to deliver secure, reliable and competitively priced fuels to the domestic market longer term, as confirmed in the Government's 'National Energy Security Assessment' (NESA), 'Liquid Fuel Vulnerability Assessment' (LFVA) and the recently released 'Energy White Paper' (EWP).
- These Government reports confirm that Australia has a high level of supply security for liquid fuels and has been very well served by proven, mature and diverse supply chains and supply sources, including the domestic refining sector. Importantly, these reports forecast this performance to continue in the future, even if a higher level of imports is needed to meet the expected growth in fuel demand.
- However, apart from difficult market conditions, there are other challenges impacting on the industry.
    - Australian refineries will come under increasing pressure from Asian competitors (see Box 1) due to:
        - the 'legacy constraints' of Australian refineries (ie. smaller scale and processing capabilities)
        - Asian refineries being larger scale with more complex and sophisticated processing equipment
        - high operational and construction costs in Australia (amongst the highest in Asia)
        - generally higher energy intensity (for the same level of complexity) and hence higher costs.
    - The increasing cost of doing business in Australia (labour and capital costs) is impacting on the domestic refining industry's ability to compete in the region and remain viable longer term, as is the cumulative impact of a wide range of complex and overlapping government regulation (eg. tightening regulations relating to the environment, fuel standards, OHS, planning and development approvals etc).
    - The future industry investment task is significant to ensure ongoing supply security and this can be best supported by a favourable investment environment, as well as soundly-based, harmonised and streamlined regulation across all levels of government. For example, any further changes to fuel quality standards must be based on sound science and provide a net economic benefit to the community as well as a return to the refiner to justify the significant investment required to produce these fuels locally.
    - The absence of a level playing field for competing transport fuels (eg. no commercial access to imported ethanol) is hampering the development of an efficient and competitive domestic biofuels market and has impacted on the shorter term supply reliability of these fuels (see Box 6).
    - Any future requirement for industry to fund and hold additional stockholdings to meet Australia's international compliance obligations could impose further (unjustified) cost on industry and lead to higher fuel prices for consumers and major fuel using industries.
- As proposed by the EWP, ongoing and regular NESA and LFVA assessments would enable these challenges and their impacts to be monitored, but these assessments must adopt and consistently apply a common assessment approach and methodology across all energy sectors, transport fuels and technologies.
- While a market based policy framework will help respond to these ongoing industry challenges, governments have an important role in ensuring that regulatory decisions and imposts do not undermine the competitiveness of domestic petroleum refining and fuel supply. For example, if domestic refineries are to remain competitive, the costs of carbon permits and other climate change response measures must continue to be recognised and offset when the manufacturing of fuel imported from other countries is not subject to similar imposts.
- Governments also have an important role in addressing market (not commercial) barriers to effective market operation and in ensuring that ongoing liquid fuels supply security is a priority consideration not just across all levels of government, but also across government agencies. All new policy and regulatory decisions by all levels of government should explicitly take account of the energy security implications of the proposed action or policy.
- Fundamentally, policy stability, a level playing field for competing transport fuels, and the minimum level of efficient and well targeted government regulation will help support the industry's future investment assessments as well as the development of robust, efficient and commercial markets for all transport fuels.
- AIP supports the clear commitment to a strong market based framework in the EWP and its core principle that a market-based approach provides a flexible and robust framework that is capable of adjustment in response to rapidly changing market or technology circumstances. In this Submission, AIP provides information and assessments in support of this framework and other information relevant to the terms of this Inquiry.

INTRODUCTION

About AIP

The Australian Institute of Petroleum (AIP) was established in 1976 as a non-profit making industry association. AIP's mission is to promote and assist in the development of a sustainable, internationally competitive petroleum products industry, operating efficiently, economically and safely, and in harmony with the environment and community standards.

AIP provides a wide range of factual information and industry data to assist policy makers, analysts and the wider community in understanding the key market, industry and other factors influencing the downstream petroleum sector in Australia. AIP is represented on key statutory advisory bodies including the National Oil Supplies Emergency Committee (NOSEC), the Fuel Standards Consultative Committee (FSCC) and the Oil Stewardship Advisory Council (OSAC). AIP sponsors or manages important industry health and environmental programs. The Australian Marine Oil Spill Centre (AMOSC) is a wholly owned subsidiary of AIP.

Should you have any questions in relation to this submission, or require additional information from AIP, the relevant contact details are below.

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About AIP Member Companies

AIP is pleased to present this Submission to the House of Representatives Standing Committee on Economics on behalf of AIP's core member companies:

BP Australia Pty Ltd
Caltex Australia Limited
Mobil Oil Australia Pty Ltd
The Shell Company of Australia Ltd.

AIP member companies operate across the liquid fuels supply chain including crude and product imports, refinery operations, fuel storage, terminal and distribution networks, and retail outlets.

- Underpinning this supply chain is considerable industry investment in supply infrastructure, and a requirement for significant ongoing investment in maintaining existing capacity. AIP member companies have total assets valued at over $16 billion dollars, and typically invest around $1 billion each year to maintain the reliability and efficiency of fuel supply meeting Australian quality standards.

AIP member companies play a very significant role in delivering the majority of bulk fuel supply to the Australian market.

- In relation to conventional petroleum fuels, AIP member companies operate all major petroleum refineries in Australia and supply around 90% of the transport fuel market with bulk petroleum fuels.
- In relation to gaseous fuels, AIP member companies are the major suppliers of bulk LPG to the domestic market, representing around two thirds of the market.
- In relation to biofuels, AIP member companies are the largest suppliers of ethanol blended fuels and blended biodiesel to the Australian market.

The Australian petroleum industry is a significant contributor to the domestic economy providing direct and indirect economic benefits from its own activities and underpinning the competitiveness of key Australian export industries.

- A significant proportion of petroleum products by value are used in the agriculture, forestry and fishing, manufacturing, mining and transport industries and make up a significant portion of the intermediate input costs of these key industries.
- As a technologically advanced industry, the refining industry employs and trains many highly skilled, technical staff and international expertise flows readily into the Australian workforce. There are also many 'spill-over' effects into other industries through the transfer of technical skills and expertise to other businesses.

AIP member companies are also very significant tax collectors for the Government. Payments to the Australian Government in 2010 (from fuel excise, GST on fuels and income tax) by AIP member companies were over $19 billion. Fuel excise (over $14 billion) provided around 5 per cent of taxation revenue to the Australian Government in 2010.

Given this background and their significant role in the Australian fuels supply chain and broader economy, AIP member companies have a very strong interest in ongoing energy security and any inquiries related to the ongoing operation and market settings for the downstream petroleum industry.

About AIP's Submission

The release of the Government's EWP in November 2012 follows a period of extensive consultation with the refining industry and detailed analysis and policy review of the sector by Government over much of 2010 and 2011 which has helped shape the EWP. AIP has supported and actively participated in this process, and this submission is set against this background.

AIP's Submission follows the structure and order of the Inquiry's terms of reference:

(1) Refining Environment & Trends
(2) Impact of Declining Refinery Capacity
(3) Energy Security for Liquid Fuels

This Submission does not address refinery workforce and employment mobility matters (the 4th term of reference), as individual AIP member companies will be able to provide insights into the employment at refineries and import terminals, the profile of their workforces, and their experiences concerning labour mobility.

Supporting this Submission is AIP's biennial publication '*Downstream Petroleum 2011'* (DP2011) on the state of the Australian downstream petroleum industry and its financial performance. DP2011 provides an overview of the significant changes that have recently occurred in petroleum refining and marketing in Australia and the Asia-Pacific region, the challenges and competitive pressures facing the domestic industry, and the importance of the industry to Australia's economic prosperity and energy security. DP2011 is available from http://www.aip.com.au/pdf/Downstream_Petroleum_2011_Report.pdf and is also attached (see **Attachment 1**). There is also a range of additional industry and energy policy information relevant to the terms of this Inquiry available on AIP's website at www.aip.com.au.

AIP member companies may also make submissions to this Inquiry, addressing specific matters raised in the Inquiry's terms of reference dealing with commercial and other issues related to those companies.

(1) THE REFINING ENVIRONMENT & TRENDS

"Identify the current international and domestic trends and pressures impacting on the competitiveness of Australia's domestic oil refineries."

(a) Global Market Trends

Overview

AIP supports the overall EWP conclusions, based on the most recent IEA modelling, that:

- *"global oil production will continue to grow as conventional supplies are increasingly complemented by unconventional sources to meet demand. Physical production limits (so-called 'peak oil') are unlikely to be reached before 2035."*
- *"oil will remain the main energy source for the transport sector to 2035".*

AIP member companies also publish detailed reports on long term energy sector trends and outlooks taking account of potential developments in the global economy, demographic trends, government policy, and technology. These reports are available to contribute to a wider understanding and debate on global energy issues. In particular, see:
BP *'Energy Outlook 2030'*, available from:
http://www.bp.com/sectiongenericarticle800.do?categoryId=9037134&contentId=7068677
ExxonMobil *'The Outlook for Energy: A View to 2040', available from:*
http://www.exxonmobil.com/Corporate/energy_outlook.aspx
Shell *'Energy Scenarios to 2050'*, available from:
http://www.shell.com/home/content/aboutshell/our_strategy/shell_global_scenarios/shell_energy_scenarios_2050/

A more detailed discussion of crude oil and petroleum product market trends is also contained in AIP's '*Downstream Petroleum 2011'* publication (see Attachment 1), which provides an overview of current and future trends and challenges for crude oil and petroleum markets, both globally and also for the trading and refining region of most relevance to Australia – the Asia-Pacific market.

As noted in the EWP, NESA and most recent Liquid Fuels Vulnerability Assessment (LFVA), spare refining capacity in the Asia-Pacific region has a significant influence over many aspects of the Australian fuels market and there has been a significant expansion in refining capacity in the Asia-Pacific region in recent years with more in prospect over the medium term. More broadly, the global, regional and domestic refining industry has also been undergoing 'ongoing structural change' in response to global market developments. These two key trends are discussed in detail below.

Asian Excess Supply Capacity

Following a shortfall in supply of refined products in 2005–06, the advent of new refinery capacity saw the Asian products market return to balance around 2008. International forecasters expected a continuing excess of supply, peaking around 2015. As a result of the slow recovery in product demand following the 2008 global financial crisis, the degree of excess supply is now expected to be greater in the shorter term, with the subsequent duration and extent of ongoing excess supply uncertain.

This market situation over recent years, and outlook for regional refining, has led to some recent rationalisation of the refining industry in the major producing countries in the region as well as delays in addition of new capacity in the region, as identified in the NESA. This rationalisation includes the announcements on the conversion of the Shell Clyde Refinery and the Caltex Kurnell Refinery to major import terminals.

Reflecting this market environment and outlook, the NESA and LFVA clearly highlight the *"significant surplus regional refining capacity expected over the medium term"*, based on the best available market forecasts at the time. Apart from impacting on capacity investment decisions in the region, there are two additional impacts of excess regional supply, as highlighted by the NESA, namely:

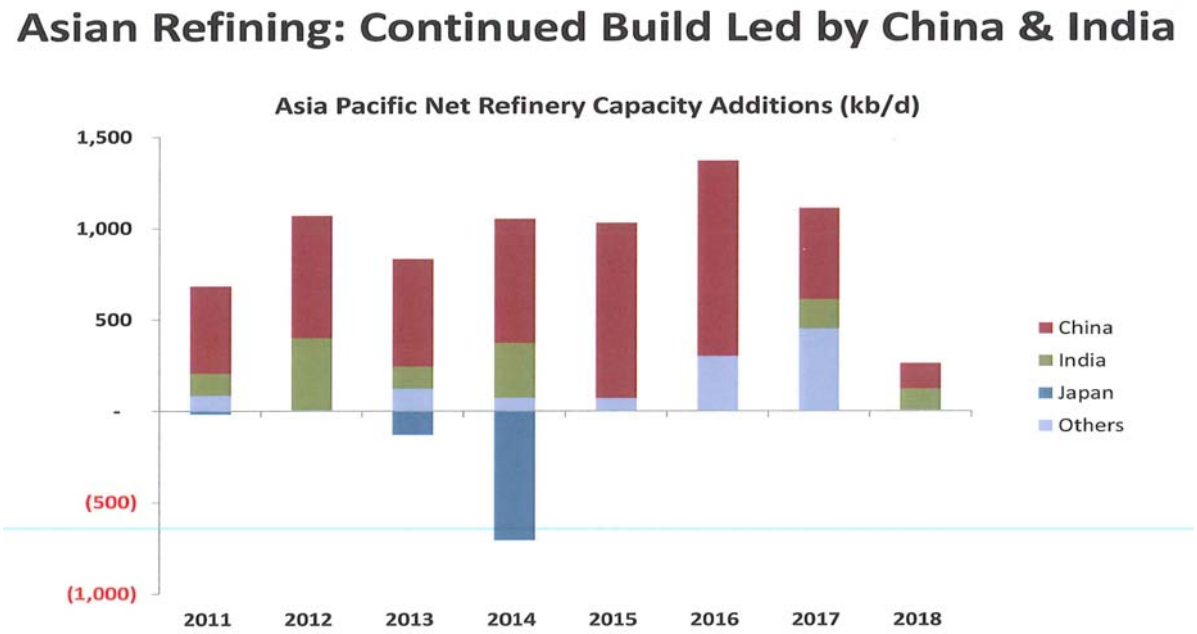
- *"this excess refining capacity helps provide a buffer against unexpected demand or supply shocks"*
- *"surplus capacity does, however, place competitive pressures on refineries globally, and there will remain a risk of further rationalisation in the Australian refining industry as Australia's relatively small refineries continue to struggle to compete against mega-refineries in Asia."*

Key factors influencing the regional excess supply outlook continue to be economic growth (particularly in China and India), decisions made about construction of planned new refining capacity, and ongoing rationalisation of existing, less efficient, refining capacity.

Economic growth is the key driver of liquid fuels demand, and growth in China and India has remained strong despite the global financial crisis. However, there is still significant uncertainty regarding the course of world economic growth. It appears at this stage that economic growth in the Asian region will continue to be relatively strong in the short term, although there will be flow-on effects to product demand from lower economic performance in other regions.

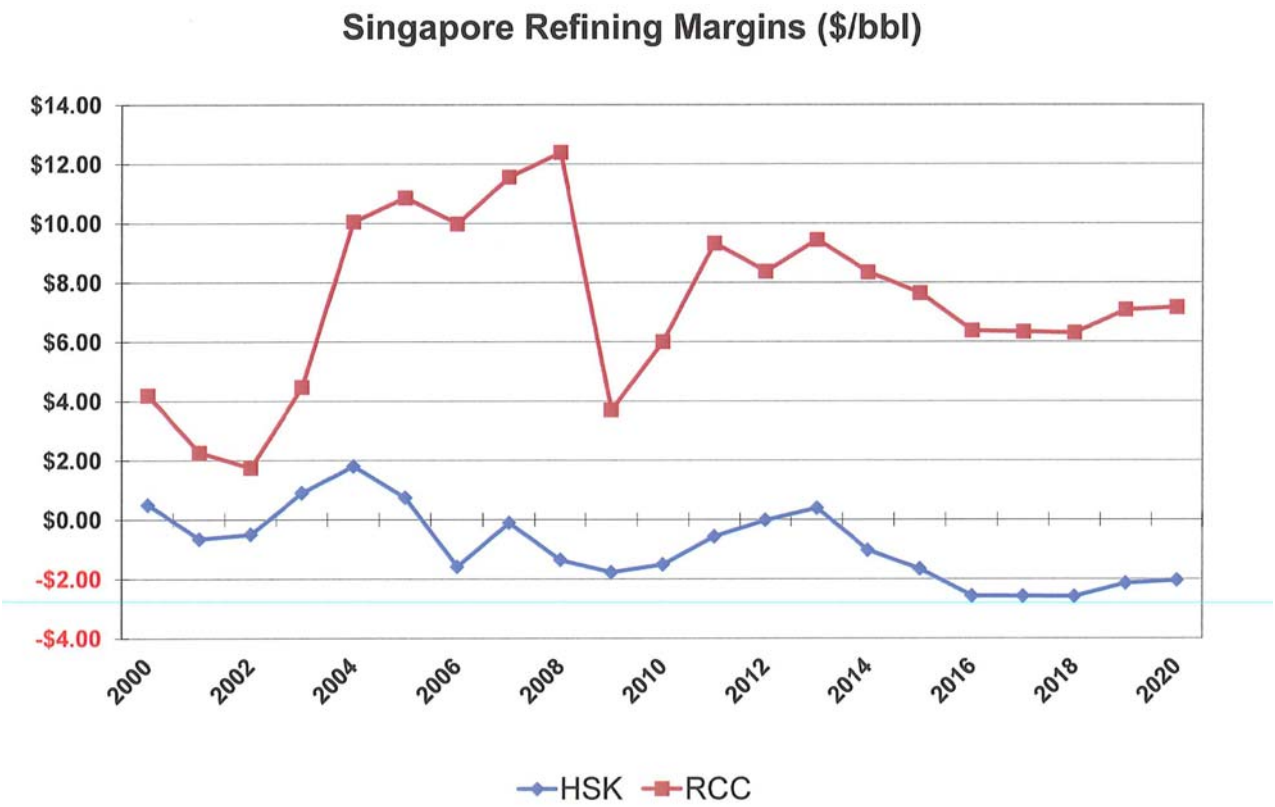
Nonetheless, the majority of additions to global refining capacity continue to be in the Asian region and informed industry commentators are still forecasting significant additions to capacity and excess supply over the medium term and beyond. The NESA finds that *"significant expansions are also expected in the Middle East, with an additional 2.3 mb/d of crude distillation capacity likely to be added by 2016, and this will help provide additional supply alternatives if required",* as a proportion of Middle Eastern product demand is currently being met by Asian refinery production.

These conclusions are supported by independent analysts that continue to forecast major capacity additions and expansions led by China and India resulting in significant ongoing excess refining capacity in the Asian region.



Source: FACTS Global Energy, September 2012

As a consequence, refiner margins will continue to be subdued compared to the levels achieved between 2004 -2008. These forecasts suggest an ongoing competitive challenge to the Australian refining sector.



Source: FACTS Global Energy, September 2012

Note: HSK is distillation margin and RCC is catalytic cracking margin

(HSK is breaking down crude oil into petroleum products through the 'distillation unit' and RCC is breaking down long-chain hydrocarbons like fuel oil into useful shorter-chain petroleum products like gasoline through the 'catalytic cracking unit')

Structural Change in Refining

Structural change in the global refining industry, including in Australia, has been occurring for some time and is ongoing.

Based on the IEA's latest Medium Term Market Outlook (October 2012), structural change is largely the market response to:

- excess capacity in Asia and Middle East
- changing demand patterns and the makeup of the demand-barrel (including due to fuel efficiency)
- new sources of supply including unconventional supplies
- shifts in regional storage, distribution and trade.

In the context of a global surplus of refining capacity, weak demand and tight refining margins, refiners are lowering refinery utilisation (as they have done globally to historically low levels) and are closing more marginal refineries. Refinery rationalisation since the GFC in 2008 has been, and will continue to be, focused in more mature refining markets in the OECD. In these cases, crude processing in refineries has been, and will increasingly be, replaced by increased product imports from Asia and the Middle East.

The unrelenting capacity expansion in Asia and the Middle East has driven much of the structural change in the global market. Importantly, this capacity has been delivered in the form of new, large scale, sophisticated refineries and with many having an export orientation from their commissioning. These refineries have been much cheaper to build, and will be cheaper to operate and maintain, compared to similar refineries in OECD countries (including Australia).

Importantly, this Asian and Middle East capacity expansion is ongoing, with the IEA noting that from 2013 planned capacity additions in the East are expected to exceed demand growth. The IEA estimates that over 4 million barrels of crude distillation capacity stills needs to shut, or not be built, to return to pre-GFC global refinery utilisation levels (4mb/d is roughly equivalent to shutting about 30-40 Australian sized refineries).

These market trends and developments, particularly in the refining sector, are confirmed in the EWP.

- "*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."*
- "*Structural change in this highly capital and infrastructure-linked industry tends to follow a very orderly transition over a long timeframe, so that the market can respond accordingly to ensure that supply security is maintained and supplier market shares are preserved. In order to continue to meet market demand, refinery closures are very unlikely to occur until alternative supply capacity has been secured. This is the case with the recent announcements by Shell and Caltex.*
- "*At the same time, the decline in our refinery capacity and continued growing demand for liquid fuels will lead to a greater share of refined petroleum products being sourced from imports".*
- "*Australia is not unique in this experience: Europe and the United States are also undergoing similar structural adjustment. This may extend the transitional period globally as companies manage international refinery portfolios while seeking to maintain or extend market share."*
- "*Asia is increasingly becoming the global refining and trade centre, with significant refining and storage capacity, highly complex and export-oriented refinery operations, and proximity to major trade routes. Significant net additions to Asia–Pacific export refining capacity are forecast to come online, including more refined fuels from India that meet Australian standards. This will maintain a surplus in regional refining capacity through to 2020."*

Against this background, the EWP concludes 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."

AIP notes that 'structural change' has been an ongoing feature of the Australian refining sector for decades, in an effort to ensure ongoing efficiency and viability, and includes for example:

- total industry investment in refinery reliability and safety of nearly $9.5 billion over the last decade, including refinery investment of over $3 billion in the cleaner fuels program, and the closure of the Port Stanvac refinery
- ongoing refinery debottlenecking programs and port expansions to increase capacity
- major improvements in energy efficiency, water usage and recycling
- significant ongoing investment in refinery and import terminal infrastructure, including investments in new facilities close to major demand growth centres
- decisions to convert the Clyde and Kurnell refineries into major import facilities.

In addition to significant actions to improve refinery reliability and efficiency, the industry has also taken important actions to improve the efficiency of the overall supply chain, including:

- streamlining of distribution networks and removal of intermediate steps (eg. on the Eastern seaboard 80% of petroleum products are delivered directly from major refinery or import terminals to major end-users and service stations);
- rationalisation of retail sites and the rise of 'higher volume sites' with multi product offerings on major transport corridors
- major changes to the structure of the industry, including changes to the range of industry operators and their associated market shares of refining, importing, wholesaling and retailing.

AIP reiterates the EWP conclusion that structural change in the oil market typically follows a very orderly transition over a lengthy time frame, so that the market can respond by producing additional product supply and so supply security can be maintained.

BOX 1 - COMPETITIVENESS OF AUSTRALIAN REFINERIES

Australian refineries are generally less competitive compared to new large scale Asian refineries due to:

- **Legacy constraints:**
  - Smaller scale compared to newer mega-refineries in Asia (ie. costs are higher per unit of production)
  - They were designed to meet domestic supply and demand fundamentals - for lighter sweet crude processing (eg. from Gippsland) and to produce a high yield of petrol; such crudes are typically more expensive in the market and petrol has relatively lower value now
- **Newer Asian refineries are more complex with more sophisticated processing equipment**
  - Complexity is how much equipment per unit of crude processing capacity
  - More sophisticated equipment means poorer quality crude (ie. heavier sour crude) can be processed more intensively into higher value products
  - In general, there is a relationship between complexity and refinery profitability
- **High operational and construction costs (amongst the highest cost in Asia)**
- **Generally higher energy intensity (for the same level of refinery complexity) and hence higher costs.**

As a result of the above, Australian refineries will come under increasing pressure from Asian competitors. However, as noted in the EWP, the prospects of individual Australian refineries over time will be determined by their individual competitive characteristics, including related to the above factors.

(b) Domestic Refining Challenges

AIP agrees with the EWP that while Australia's energy security outlook appears positive and robust, there are challenges in the coming decades for the overall energy sector, including the downstream petroleum market.

Apart from the competitiveness pressures noted in Box 1 above, these challenges include the regional supply balance outlook for petroleum fuels and those identified in the EWP; for example, the nature and timeframe of the international response to climate change, attracting the timely investment needed to meet future market requirements, the rising costs of energy globally, and unforeseen geopolitical or economic developments that reshape or disrupt international energy or capital markets.

However, AIP considers that the market, and a market based policy framework by Government, remains best placed to manage these challenges and future risks. This view is shared by the EWP (ie. *"Markets and businesses are generally well equipped to deal effectively with market and price risks"*).

- In relation to the future investment task, the EWP, NESA and LFVA all confirm that current market settings have resulted in significant recent investments by the downstream petroleum industry in the infrastructure needed to meet future fuels demand, and more is underway or planned.

- In relation to climate change policies, the Government's carbon market and pricing will drive market changes to help achieve Australia's abatement goals, as acknowledged by the EWP. However, AIP is of the strong view that if Australian refineries are to remain competitive, the costs of carbon permits and other climate change response measures in Australia must be recognised and offset when the manufacturing of fuel imported from other countries is not subject to similar imposts. This fact is currently recognised in the Government's transitional industry assistance provided under the Clean Energy Future Package.

- On geopolitical risks, AIP notes that international events that impact on crude oil and product markets will be felt by all countries, so Australia is not likely to be placed at a relative disadvantage, including competitively. In addition, and as noted in LFVA reviews and the EWP, past instances of geopolitical instability, civil unrest and war have had a relatively small impact on world crude oil flows and have not had a major impact on the reliability of crude oil and petroleum product imports to Australia.

- In relation to the rising costs of energy, AIP notes that with sustained price rises in conventional energy supplies, the market will respond efficiently to this price signal through greater investment in increased supply (including alternatives to conventional supplies), reductions in demand and changes in consumer behaviour, as has occurred in recent years.

The downstream petroleum market has already responded to these broad market dynamics and will continue to do so as further market changes and opportunities emerge. The EWP notes that *"Australia's liquid fuel market has operated on the principle of import price parity since 1977, which means that domestic fuel prices are closely linked to international events"* (see Section 2b) and exposure to global and regional markets has led to mature and proven supply chains delivering supply reliability and security for liquid fuels now and into the future (see Section 2a).

In this regard, AIP strongly supports the clear statements made in the EWP that:
"Well-functioning and competitive markets supported by effective policy and regulation underpin our ongoing energy security through their intrinsic ability to:
- *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."*

Overall, AIP considers that the critical issue for the longer term is ensuring that the market framework provides the right signals for ongoing investment in resource identification, extraction, processing and distribution. These signals will also be the drivers for the development of alternative liquid fuel supplies and for changes in consumer choices about how liquid fuels are used, including at lowest cost for consumers.

(2) IMPACT OF DECLINING REFINERY CAPACITY

"Investigate the impact of declining refinery capacity in Australia on the economy, including:
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."

(a) Australia's Liquid Fuels Supply Chains

As noted in the EWP, *"Our lack of oil self-sufficiency and the prospect of further refinery rationalisation does not in itself compromise or reduce our energy security. Our liquid fuel security is expected to remain high because of our access to reliable, mature and highly diversified international liquid fuel supply chains."*

AIP shares this assessment and 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.

In terms of international supply chains, independent market analysts expect a strengthening of supply chains relevant to Australia over time, and greater efficiencies in trade and petroleum product shipping patterns, due to:

- continued refining and storage capacity being built in Asia (particularly China and India) and in the Middle East;
- further market development and integration in the Asia-Pacific region and with petroleum product trade expected to grow in both volume and scope;
- the emergence and proximity of major new petroleum product export centres (eg. South Korea and India) and the use of an increasing variety of shipping routes to Australia;
- Asian refineries becoming more technically complex and increasing availability of fuel in the Region meeting Australian fuel quality standards;
- the outlook for ongoing excess supply in the region;
- a likely greater volume of available shipping services focused on the Asian region; and
- more broadly, crude and petroleum product trade becoming even more globalised.

In terms of 'within country' or domestic supply chains, AIP notes the following EWP conclusions:

- *"Rising imports (to meet demand growth) will require timely investment in import infrastructure, even in the absence of further refinery rationalisation."*
- *"Currently, the market is delivering adequate terminal and importing infrastructure to meet Australia's liquid fuel needs, and investment in new import infrastructure and storage is keeping pace with increasing consumption". As demand increases, it will be important for the Australian and state and territory governments to maintain an attractive investment environment through efficient, timely and consistent national planning, approval and regulatory processes. This will support future investment in import fuel terminals, storage facilities and distribution infrastructure."*
- *"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."*

Overall, AIP agrees with the EWP assessment that *"Australia's access to well-established and diverse international supply chains suggests that (future) risks are more likely to affect energy prices rather than compromise in a sustained way Australia's physical energy supply."*

(b) Import Price Outcomes

As noted in the EWP, *"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."* AIP supports this assessment, including against the background of the general operation of bulk fuel terminals and the overall wholesale market in Australia – see below.

Import Parity Pricing & Prices

The price of fuel in Australia is dependent on world market prices. Crude oil, petrol, diesel and jet fuel are bought and sold in their own markets. Each market is regionally based. There are linkages and transactions between regional markets to balance global demand and supply.

Price benchmarks or 'markers' for crude oil and petroleum products provide convenient indicators of what is happening with prices in specific markets. Information on changes in the prices of these markers is extensively reported on a daily basis.

Australia's benchmark prices – Tapis and Dated Brent crude oil, MOPS95 petrol and Gasoil 10 ppm sulphur for diesel – are quoted daily by independent monitoring agencies including Platts, based on transactions in the Singapore market on a given day.

There is a close relationship between these international fuel prices and Australian wholesale and retail fuel prices, as verified by the ACCC in successive annual formal price monitoring reports.

To meet Australian demand, around a quarter of fuel is imported, mostly from Singapore. Singapore is the regional refining, distribution and trading centre and among the world's largest.

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.

Australian refiners must price their fuel products to be competitive with fuel imports from Asia – called 'Import Parity Pricing' (IPP).

- If Australian fuel prices were below Singapore prices, Australian fuel suppliers would have no commercial incentive to import the fuel needed here because sales of that fuel would incur losses.
- In addition, Australian refiners would have an incentive to export production.

The IPP is the 'landed cost' of refined fuel to import terminals around Australia and includes:

- the refinery benchmark price for fuel (e.g. for petrol – MOPS95)
- the 'quality premium' for specific Australian fuel standards
- freight
- exchange rate
- wharfage, insurance and loss.

As the Singapore benchmark prices for fuel are quoted in $US per barrel terms, their price in Australian dollar terms also reflects movements in the $US/$A exchange rate. This means that exchange rate movements can offset or magnify changes in Singapore fuel prices.

The Singapore market price for fuel plus shipping costs, Australian taxes and the exchange rate – called the refined product cost – represents over 90 per cent of the retail price of fuel in Australia.

ACCC analysis [(1)] shows that the actual import costs paid by major fuel suppliers are broadly similar to, and move in line with, IPP. Over the past four years the difference has averaged less than 1 cent per litre. Moreover, the ACCC considers that the use of IPP-based pricing in Australia is appropriate, particularly if imports continue to be the marginal source of supply of refined fuel.

The use of IPP, including for sales between major fuel suppliers, provides clear benefits in terms of supply security and economic efficiency, and ensures Australia is not disadvantaged in accessing supplies of crude oil and products.

Australian Wholesale Prices

Terminal gate prices (TGPs or spot wholesale prices) typically include the IPP as well as 'wholesaling costs' to store and handle the fuel once it arrives in Australia and prior to its distribution to the domestic market. TGPs also include taxes (fuel excise and GST) and a small wholesale profit margin.

Wholesale price transparency in the Australian market is assisted by the regulated publication of TGPs for petrol and diesel by all AIP members. The ACCC has concluded that 'by virtue of its transparency and the fact that it represents a fuel-only charge, TGP is a useful benchmark for analysing wholesale prices'.

ACCC analysis [(1)] shows wholesale prices paid by customers only vary slightly from TGP (averaging 0.3 cents over the last four years) due to charges for additional services included in the transaction (such as delivery, branding and price support) and any volume discounts applying to large orders.

According to the ACCC [(1)], in 2010–11 the wholesale sector net profit for petrol was 1.05 cents per litre and for diesel was 0.87 cents per litre.

Bulk Fuel Terminals

Bulk fuel 'terminals' are large storage facilities from which fuel is distributed to wholesalers, retailers, distributors and large end-users. These may be import terminals, refinery terminals, marketing terminals or depots.

Terminals can be owned and/or operated by refiner marketers (including joint ventures), independent fuel importers or independent terminal operators. Other parties may access terminals through:

- hosting arrangements to store and load product at the terminal for a market-based usage charge on a spot or long term basis
- leasing of storage capacity, typically long term agreements based on a commercial return on capital and operating costs.

For economic and cost efficiency reasons, oil companies and independents often buy bulk fuel from each other in markets where they do not own facilities or where they do not directly import through hosting arrangements.

Capacity and throughput are two key measures of terminal utilisation. Terminal 'capacity' relates to the number and size of tanks at the facility, which is influenced by land area, range of products handled and size of incoming deliveries. 'Throughput' provides a better guide to the quantity of fuel a terminal can handle over a given period as it also takes account of the manner in which products can be supplied to and loaded out from the terminal (e.g. pipeline, truck), seasonal demand factors, and terminal constraints.

The ACCC has concluded [(1)] that there is considerable spare capacity in some independently owned import terminals around Australia, with more capacity becoming available in the future.

(1) ACCC annual Formal Monitoring Reports ('*Monitoring of the Australian petroleum industry—report of the ACCC into the prices, costs and profits of unleaded petrol in Australia*', December 2011)

Contracts for sales of fuel 'into' terminals, whether from domestic or international sources, are based on Import Parity Pricing (IPP). Sales of fuel 'from' terminals are negotiated on commercial terms mainly to contracted wholesale and retail customers, although spot purchases occur. Contracts are typically based on IPP while spot purchases are on the basis of TGP.

Terminal operators seek to recover the terminal's capital and operating costs including taxes and other charges. Discounts or premiums may apply to customers depending on the volume, contract term, and any branding or marketing support provided.

The general operation of bulk fuel terminals is not expected to change with declining refining capacity, as the factors above are typically the same whether fuel is refined or imported. That said, ongoing investment in petroleum import infrastructure becomes more important in ensuring supply security as demand for fuel grows – see Box 2 below.

BOX 2: THE INVESTMENT TASK - IMPORT INFRASTRUCTURE ADEQUACY AND COMPETITION ISSUES

As Australia's demand for fuel grows, ongoing investment in petroleum import infrastructure becomes more important in ensuring supply security – particularly investment in bulk fuel terminal infrastructure which enables safe and efficient fuel imports. Bulk fuel terminals play an important role in the domestic liquid fuels supply chain as the primary distribution point for domestic refineries as well as being the link between the international and domestic fuels market (through import terminals at Australian ports); they also play a critical role in any industry and government response strategy to manage a major disruption to liquid fuels supply.

Given the important role of terminals in the supply chain and the wholesale fuels market, as well as Australia's reliance on liquid fuel imports as the marginal source of supply, a focus for policy makers is on whether free market operation is delivering adequate terminal and importing infrastructure to reliably meet Australia's liquid fuels needs at competitive market prices (thereby, supporting Australia's international competitiveness).

Major independent and government reviews of Australia's petroleum import infrastructure and investment (including the NESA and LFVA and ACCC analysis) have concluded that:

- significant investment in new or expanded facilities has been occurring and more is under construction or planned
- there is significant spare capacity to meet future demand and import growth for fuels
- there are a range of economic options in Asia to efficiently import fuel meeting Australian quality standards
- current terminal operations and access arrangements do not impose a constraint to import competition nor to investment.

The EWP confirms these detailed assessments – *"currently, the market is delivering adequate terminal and importing infrastructure to meet Australia's liquid fuel needs, and investment in new import infrastructure and storage is keeping pace with increasing consumption".*

This market and investment environment will ensure ongoing fuel supply security and competitive fuel prices to consumers and major fuel users.

Given the above, there is no need for regulated access for third parties to bulk fuel terminals and distribution infrastructure as significant spare capacity exists in the market. Access is also readily available on commercial terms (through leasing, hosting and usage charges). Applying access regulation to this privately owned infrastructure would seriously reduce incentives to invest in new infrastructure, and would increase the costs of fuel supply to business and consumers. Australia's future supply security would be impacted because more investment in terminals will be needed to meet future demand and importing capability.

AIP supports reforms to ensure that planning, approval and regulatory processes are efficient, timely and nationally consistent, to support longer term investment in import, storage and distribution infrastructure.

(c) Employment Impacts

Individual AIP member companies will be able to provide insights into the employment at refineries and import terminals, the profile of their workforces, and their experiences concerning labour mobility.

(d) Impacts on Downstream Activities

AIP notes that the EWP briefly highlighted that *"continued access to competitively priced and reliable supplies of electricity, feedstock coal, gas and petroleum products will be important for transformative industries such as plastics, chemicals, alumina and steel"*.

The EWP also noted that *"Our gas and liquid fuel markets are also undergoing important structural changes, driven by a closer integration with global 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."*

Without further assessment, AIP does not believe that there are significant 'market' risks to downstream activities (including from recent refinery conversion decisions), since no market failure has been clearly identified and there is an established domestic and international market for sources of feedstocks.

(3) ENERGY SECURITY FOR LIQUID FUELS

"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)"

(a) Energy Security Outlook For Liquid Fuels

Fundamentally, AIP considers that Australia's longer-term liquid fuel supply security and transport energy needs will best be met through the market and market measures including:

- **open crude oil and fuel product markets**
- **competitive, market determined prices**
- **clear investment and market signals**
- **flexible and resilient supply chains and efficient supply management**
- **diversity of crude oil and liquid fuel sources**
- **competitive and viable domestic refineries**
- **policy and competitive neutrality between transport fuels**
- **improved vehicle technologies**
- **reliable, clean and high quality fuels acceptable to consumers.**

AIP's assessment is that these conditions largely exist now for the liquid fuels market, with the exception of biofuels (see Section 3b), and therefore the future imperative for governments is to maintain or further strengthen these market features. 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.

This AIP assessment is consistent with the Government's recently released EWP and also with the comprehensive assessments of liquid fuel supply security released in late 2011, including the National Energy Security Assessment (NESA) and the ACIL Tasman Liquid Fuel Vulnerability Assessment (LFVA) – see **Box 3** and **Box 4**. AIP considers that these recent assessments provide the evidence base and particularly relevant context for the Inquiry's terms of reference**.** They also provide a current, comprehensive and robust analytical basis for future Government Policy, and AIP supports these regular Government liquid fuels security reviews in consultation with industry on the established timeline.

AIP welcomes the clear acceptance by the Government in the EWP that:

- *"central to the delivery of this framework and energy security outcomes is the provision of stable policy. Without this fundamental underpinning, it will be difficult or more costly to attract the necessary investments to meet our energy* needs"
- *"market-based approaches are the best means to efficiently deliver policy outcomes, promote competitive efficiencies and provide the flexibility needed to respond to future developments"*

AIP considers there are four critical dimensions of any strategy to deliver secure and reliable fuel supply and meet adequacy and competitiveness conditions:
(1) open international markets for crude oil, petroleum products and biocomponent feedstocks and efficient integration into these markets
(2) a diversity of supply options – namely a portfolio of domestic and international supply sources
(3) flexible, resilient and efficient supply chains and associated infrastructure
(4) efficient supply management strategies, including in the event of a supply disruptions.

Importantly, this framework and key market dimensions apply equally to all fuels in the transport fuels mix (including conventional, gaseous and alternative fuels) if supply reliability and security is to be achieved.

For example, reliable ethanol supply to the Australian market was seriously compromised in 2011 during ethanol supply disruptions (related to floods, crop destruction and plant reliability) largely because the current domestic ethanol market and government policy settings have failed to develop a robust supply chain and alternative ethanol supplies, including through ethanol imports – see **Box 6.**

BOX 3: NATIONAL ENERGY SECURITY ASSESSMENT (NESA) 2011

- The NESA and its supporting analysis contained in the LFVA are comprehensive and timely assessments, underpinned by detailed independent analysis and modelling and drawing from authoritative sources.
- The key conclusion from these reports is that Australia currently enjoys a high level of liquid fuel security and this position is not expected to change in the coming years.
- The reports clearly demonstrate that Australia's market based approach and ready access to the global market have delivered secure, reliable and adequate liquid fuel supplies which meet the operational requirements of consumers and major fuel users at internationally competitive prices.
- The industry considers that Australia's longer term fuel supply security and transport energy needs will be met through the existing open market approach and measures, and Australia will continue to be able to access crude oil to meet its refining needs as well as imported petroleum products for customers as long as we pay international market prices.
- On the basis of the NESA and LFVA findings, the industry considers there is no case for a significant change in overall government policy settings for the liquid fuels market.
- 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 NESA 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 NESA 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 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 NESA update.
- The NESA also notes that there is clear evidence of significant recent investments by industry in the infrastructure needed to meet future demand but also recognises that ongoing investment in adequate importing capacity and storage will be important in the future. In relation to ongoing infrastructure investment:
    - AIP supports reforms to ensure that planning, approval and regulatory processes are efficient, timely and nationally consistent, to support longer term investment in import and storage facilities
    - AIP notes that there is significant spare storage and importing capacity available in the Australian market, particularly in independently owned and operated facilities, and that spare capacity is usually available to third parties on well established commercial terms (eg. leasing, hosting etc).

BOX 4: THE LIQUID FUELS VULNERABILITY ASSESSMENT (LFVA) 2011

- The LFVA provides detailed supporting analysis and modelling which underpins the NESA.
- The LFVA comprehensively explores the current issues and challenges facing the Australian downstream industry, including the competitive pressure that new large scale refineries in Asia are placing on our domestic industry; the assessment comprehensively explores issues like global and regional supply-demand balance for crude oil and petroleum products, supply security, and supply chain reliability and flexibility.
- AIP supports the underlying conclusions from the LFVA that:
  - diversity of crude oil and petroleum product supply is important to energy security
  - growing dependency on crude oil and petroleum product imports will have limited implications for liquid fuels supply
  - imports can lead to an increase in the diversity of sources of potential supply in the event of disruptions to domestic production
  - the continuing presence of domestic refineries contributes to Australia's ongoing energy security as it increases the number of supply options available
  - the probability of a major disruption to global oil supplies is considered to be low, the market would respond and readjust the supply lines to replace supplies lost in the event of a disruption, and the disruption would have manageable impacts on the Australian economy.
- As highlighted in the NESA, the LFVA also indicates that if supply capacity constraints emerge this could impact on Australia's vulnerability through international market prices and volatility, but excess supply capacity in the Asian region, and significant recent and planned industry investment in capacity in the domestic market, is mitigating this risk.
- AIP also supports the recommendations in the LFVA as they are consistent with longstanding AIP positions including:
  - to review Asian supply capacity as part of each NESA update every two years
  - measures to improve decision-making and monitoring of liquid fuels supply, including mandatory provision of stocks data by industry to official statistics
  - the Australian Government pursuing with the IEA changes to their methodologies underpinning international obligations which are more market reflective and recognise Australian and Asian market realities.

However, the downstream petroleum industry, and the refining sector in particular, faces some <u>significant challenges</u> currently and in the future, as clearly acknowledged by the EWP and the NESA reviews. The major industry challenges focus on the following two market drivers.

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

These challenges emphasise that governments in Australia have an important role in ensuring that regulatory decisions and imposts do not undermine the competitiveness of liquid fuel production and supply. For example:

- the costs of carbon permits and other climate change responses in Australia must be recognised and offset when the manufacturing of fuel imported from other nations is not subject to similar imposts
- any changes to fuel quality standards must be based on sound science and provide a net economic benefit to the community to justify the significant investment required to produce these fuels
- the current complex and overlapping array of environmental and other regulatory measures must be carefully reviewed and streamlined to ensure that current and future measures are soundly based, cost effective and harmonised
- there must be consistency in the excise treatment of competing liquid fuels, for example taking account of energy content.

Notwithstanding these challenges, Australia's well functioning liquid fuels market is still forecast to continue to deliver secure and reliable fuels supplies to the Australian market at competitive market prices.

However, to support the industry in meeting future challenges and competitive pressure from Asia there are still key areas of Government activity and reform that could strengthen the operation of the fuels market and better support and facilitate the significant infrastructure investment required in the future to meet Australia's growing liquid fuel needs.

Overall, AIP agrees with the core underlying message in the EWP that a reliable and secure transport fuels system is best achieved through a stable policy framework which allows the market to work effectively and encourages efficient ongoing investment. Consistent with this, and as the Government pursues the above priorities and any proposed changes to policy or market settings in the coming years, AIP considers that an appropriate Government decision making framework is presented in **Box 5**.

BOX 5 – A SOUND GOVERNMENT POLICY FRAMEWORK FOR THE FUELS MARKET

Any future Government actions to strengthen liquid fuels security should meet the following policy principles.

- First, Government policy should be:
  - based on sound science and rigorous economic analysis which indicate a clear net public benefit
  - consistent and transparent
  - aimed at strengthening linkages to international energy markets
  - aimed at maintaining a level playing field for transport fuels
- Second, changes in government policy should:
  - allow for a sufficient transition period
  - recognise the considerable investment that will be required over the next ten years to maintain the reliability and capacity of the downstream petroleum industry
- Third, regulatory regimes should:
  - clearly define their objectives
  - be regularly reviewed to ensure the objectives are still relevant
  - be harmonised across jurisdictions
  - be enforced, and applied, consistently to all market participants
  - be allowed to lapse when their objectives have been met
- Fourth, if governments implement energy security policies, the impacts on Australia's international competitiveness and, thereby, on domestic prices, should be well understood by the community

Consistent with these principles, Government policy for liquid fuels should:

- maintain a strongly market based approach to liquid fuels with minimal regulatory intervention
- recognise the competitive pressures from regional refineries and the impact on the economy of any loss of our competitive advantage created by government policies
- facilitate the development of the liquid fuels infrastructure, including streamlining approvals for new infrastructure developments such as new storage facilities, port deepening etc
- maintain a strong commitment to technical skills formation in the education system
- not place additional and unjustified compliance, regulatory and cost burdens on industry that reduce the industry's ability to compete effectively in the region
- ensure R&D policy settings are appropriate and encourage the commercial development of transport fuels which can contribute to liquid fuel security in Australia
- seek to identify and address any government policy and regulatory impediments to Australia maintaining a high level of liquid fuel security over the longer term.

These policy principles and recommendations recognise key industry drivers and market realities which are also relevant for any future Government policy including:

- the long lead times required for industry investment
- the significant capital employed by the industry
- the risks to supply security associated with any policy changes that make Australian refineries uncompetitive/unviable in the future.

(b) Biofuels

AIP strongly supports market based approaches to the supply of fuels in Australia. AIP considers that biofuels will have a place in the Australian fuels market as long as the fuels are available at a competitive price, reliably supplied, acceptable to consumers and produced sustainably.

AIP believes that government policy in support of biofuels (e.g. for environmental benefits) needs to be: (i) transparent, with clear and credible objectives; (ii) based on sound science; and (iii) cognisant of other broader policy settings.

AIP does not support mandates requiring the use of any particular type of fuel because mandates imply higher cost fuels, may reduce market transparency to suppliers or consumers, do not engender market and price competition for the supply of the fuel to wholesalers and retailers, and fail to encourage the development of robust and reliable fuel supplies. All of these features are already evident in the Australian biofuels market. Mandates for any particular fuel create economic inefficiency and regulatory dependency where the requirement for supply of these fuels grows beyond the efficient level determined by market forces. The supply of fuels beyond market justified levels lowers the overall efficiency of the economy and allocates scarce resources to lower value uses in the economy reducing productivity as a whole.

AIP is concerned that while mandates may have helped to create increased consumer demand:

- interactions between biofuels policies and other policies relating to fuel excise and customs duty have created market distortions that have impeded the establishment of a properly functioning biofuels market and supply chain;
- there is ongoing uncertainty surrounding biofuels supply reliability;
- there is not effective competition involving a diverse number of ethanol producers in the wholesale biofuels markets; and
- compliance regimes have developed that lack predictable and equitable outcomes for all suppliers.

BOX 6 - ETHANOL SUPPLY IN 2011

The Australian Government has recently committed to ethanol, biodiesel and methanol (so called 'renewable fuels') being excise free for a period of 10 years. However, this commitment does not apply to imported ethanol which will continue to pay the full rate of excise of 38.143 cents per litre with no entitlement to an excise offset for this period. AIP does not support this approach to imported ethanol as it is likely to undermine the reliable and economic supply of ethanol blend biofuels to the Australia retail fuel market, and also because the long term growth in the uptake of biofuels in the Australian transport sector will be limited to the growth potential of 'domestic' ethanol production.

The reliable supply of conventional liquid fuels (petrol, diesel and jet fuel) to the Australian market has been underpinned by a diversity of supply options for petroleum products from domestic refiners and imports, and ready access to the global market for petroleum products in the event that domestic production is either disrupted or insufficient to meet Australian demand.

In 2011, Australian fuel suppliers (including AIP member companies and independents) encountered significant problems in sourcing reliable and quality supplies of ethanol from domestic producers. This was due to natural disasters in Australia affecting ethanol feedstocks, plant reliability issues, and also due to the closure of ethanol plants for financial reasons (despite the current 'excise-free' regime). Access to commercially viable imported ethanol during these times would have filled the void left by domestic producers. Instead some suppliers of ethanol blended fuel to the retail market were forced to withdraw this fuel from their product offerings to consumers. The lack of reliable domestic supply of ethanol (and the inability to import economically viable supplies) causes production/manufacturing disruptions and places additional costs on biofuel blend suppliers to implement supply chain management changes. These additional costs and supply disruptions reduce the cost advantages for biofuels, and their acceptability to consumers, adversely affecting the achievement of a long term sustainable biofuels market.

For these reasons, AIP strongly opposes the differential fiscal treatment of domestic and imported ethanol and considers that this fundamentally undermines supply reliability and competitive market pricing for ethanol. AIP proposes that government equalises the fiscal treatment of imported and domestically produced ethanol so that an efficient and stable ethanol market can be created with significantly improved options for supply.

(c) Emergency Management

Within a market based framework, AIP and its members companies support multilateral government efforts to ensure that world markets remain open and that effective response mechanisms are in place to mitigate the impact of short term supply disruptions and global oil supply emergencies.

Australia already has emergency response frameworks covering our major energy markets including liquid fuels. In the case of the liquid fuels market, industry and governments recognise the potential risks and impacts of a disruption to liquid fuel supplies. AIP and its member companies actively participate in government sponsored management committees like the National Oil Supplies Emergency Committee (NOSEC), a committee of the COAG Standing Council on Energy and Resources.

While every effort is made by industry to ensure continuing reliable supply, NOSEC and the International Energy Agency (IEA) have established emergency response plans that would help ensure a coordinated response to any liquid fuel supply or oil emergency at a national or international level.

AIP considers 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.

The main features of Australia's emergency response framework include the following:

- A tightly integrated industry-government response strategy, with stakeholders focused on their core areas of responsibility and competency.
    - At the government level, wide-ranging and flexible Ministerial powers to address any emergency situation as well as effective government communication procedures.
    - At the industry level, existing and proven commercial practices to allocate and distribute supply efficiently and equitably under government direction.
    - At the consumer level, voluntary demand restraint measures consistent with IEA best practice.

- Robust legislation (the *Liquid Fuels Emergency Act 1984*), legal instruments and emergency plans to deal with the specific/different circumstances of any liquid fuel emergency or IEA collective action.
    - As noted by the EWP, these plans and legislation are appropriately focused on demand restraint and the priority needs of 'essential users' defined in the legislation.
    - Importantly, there have been major improvements recently to the emergency management framework and associated plans, following extensive reviews and close consultation with industry and all levels of government.

- Industry has an enshrined and active role in the NOSEC and a close day-to-day relationship with key managers and advisors across all levels of government on liquid fuel supply matters.

Importantly, this AIP assessment is shared by relevant authorities. For example, according to previous detailed IEA reviews of Australia's emergency response capability, the security of supply in Australia is well served by an industry which operates a resilient and diversified supply chain. It is also supported by a regime of policy and regulatory emergency measures, regular in-depth vulnerability assessments, and international advocacy of open global energy markets.

Against this background, AIP reiterates our support for the EWP principles that:

- *"Government intervention to manage disruptions should be as a last resort. Decisions to intervene should be based on an agreed, transparent and objective emergency management framework that ensures cooperation between industry and government to minimise market distortion."*
- *"In the event of a disruption, energy market participants should be able to make independent decisions in response to price signals and existing or revised contractual arrangements. Those decisions are likely to provide the most effective, flexible and timely responses to minimise the impact of disruptions at least cost."*

Importantly, the above framework and principles for liquid fuels have been proven to be robust in the context of major supply disruptions and incidents that have occurred in Australia in recent years, including across energy sectors (eg. the 2011 Queensland floods and the Varanus Island gas explosion).

AIP therefore considers that major changes to Australia's emergency response framework and operation for liquid fuels are not required, but the framework should be periodically reviewed to ensure it continues to align with the Government's principles noted above as well as current market realities and commercial practices.

(d) International Engagement & Obligations

As outlined in the EWP, and supported by AIP, Australia is a member of several multilateral energy forums that cooperate on energy information, policy and trade and is also a member of a wide range of energy technology groups that cooperate on low-emissions technologies and practices.

Australia is a member of the International Energy Agency (IEA) and a signatory to the 1974 Agreement on an 'International Energy Program' (IEP). Under the IEP, participating countries are obligated to meet an 'emergency reserve commitment', which requires each country to hold oil stocks equivalent to no fewer than 90 days of the previous year's average daily net imports. The agreement also includes coordinated emergency response measures that allow IEA members to act collectively in the event of a major global oil disruption. The response measures include: drawdown of oil stocks; demand restraint measures; fuel-switching from oil to alternative energy sources; surge oil production; and sharing available supplies.

Australia does not hold government-controlled or regulated industry stocks for drawdown in an emergency, and as a result Australia's contribution to any IEA-coordinated emergency response, or 'collective action', is through a combination of market and industry mechanisms and voluntary demand restraint, consistent with the Government's market based framework.

As the EWP notes, *"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. Therefore, we rely on commercial stockholding practices of industry and market flexibility to maintain supply during short-term global and domestic supply disruptions."*

AIP considers this approach remains appropriate, efficient and cost effective in the context of Australia's:

- **open market operation and market realities**
- **robust emergency response framework (noted above)**
- **high level of liquid fuels security and efficient commercial stockholdings confirmed in the NESA**
- **market and commercial approach which has delivered supply reliability at a competitive cost to consumers and end-users, with no widespread customer shortages being experienced.**

Accordingly, AIP considers that any emergency stockholdings for Australia over and above normal commercial requirements (see **Box 7** below) is not justified on energy security grounds, as confirmed by the NESA and LFVA reviews and the EWP.

Any Government decision to mandate increased industry stock levels for 'international compliance reasons' would need to apply proportionally to all fuel suppliers (refiners, manufacturers and importers). If the likely significant cost of 'mandatory' industry-wide stockholdings could not be passed through to consumers, or the Government did not underwrite these costs, there would likely be an adverse impact on refining competitiveness and ongoing viability, significantly reducing Australia's energy security. Alternatively, the Government could purchase stocks from the open market and hold stocks to meet international compliance obligations.

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.

There are also a range of practical, logistical and market factors making emergency stockholdings impracticable in an Australian market context. For example, the costs of acquiring, holding and managing stockpiles above commercial levels would be significant and such stocks would need to be very substantial to provide petroleum products to the domestic market for an extended period. In addition, increasing stocks of petroleum products is also far from straightforward. There are issues around turnover of stock, seasonal changes to product specifications, and potential quality degradation over extended storage periods.

Moreover, to establish whether additional emergency stocks are required to meet IEA obligations, the Government will need full confidence that Australian liquid fuels supply and demand and stockholding data is comprehensive and robust to clearly demonstrate a risk to, or breach of, their IEA obligation – see Section 3e.

BOX 7 : CURRENT INDUSTRY COMMERCIAL STOCKHOLDINGS IN AUSTRALIA

AIP member companies regularly undertake extensive reviews of their supply chain operations and commercial levels of stockholdings. AIP member companies review their commercial stock levels on an ongoing basis to determine whether demand characteristics have altered sufficiently to warrant an increase in stock levels at certain locations.

The current levels of commercial stocks reflect a considered assessment of the operating conditions throughout the supply chain and the risks more likely to be encountered by refiners and others operating the supply chain.

As found in the NESA and LFVA, the current level of commercial stockholdings and industry judgements around stockholdings and their management, have been fundamentally sound. Importantly, these reports confirm that Australia has sufficient stocks on a commercial basis currently in the Australian supply chain for security of supply and this will continue into the future with recent and planned increases in storage capacity.

However, the effectiveness of current market based mechanisms and the commercial response strategies of major fuel suppliers can always be improved through an ongoing dialogue between major fuel suppliers and users – particularly in relation to unusual levels of demand for particular products. This is why AIP member companies encourage the active review and management of supply chains, demand and stocks with their customers, particularly in markets with limited supply options – for example, in remote areas.

Fundamentally, AIP does not see it as a role for major fuel suppliers (AIP member companies) to hold 'buffer' stocks to guarantee the ongoing business operation of major fuel users and distributors in the event of a major disruption. AIP member companies believe that fuel users are best able to make decisions about their need for liquid fuels, and the way they use those fuels, based on information about price and availability and also fuel use within their own business operations. They can also make better decisions about how they will manage the risks of a disruption so that their commercial and community interests are maintained. Some fuel users may invest in extra stockholdings, while others may change the way they do things to avoid or minimise the impact of possible disruptions.

From an AIP perspective, the **main barriers** to even more efficient supply chain operation are:

- many fuel users only holding very limited stocks on the basis of their perception that stocks will be held by suppliers, or governments will intervene to protect consumers' interests if supplies are not forthcoming; and
- business and industry fuel users believing they are 'essential users' and will get preferential supplies during a supply emergency in the same way as police and emergency services (which are defined as essential users under the Liquid Fuels Emergency Act and are the only parties guaranteed fuel supply in an emergency).

AIP supports any government efforts to address these barriers, and notes that NOSEC is seeking to address these through liaison and education efforts focused on critical energy infrastructure and major user groups.

(e) Improved Liquid Fuels Data & Monitoring

AIP shares the EWP assessment that energy data, information and analysis is constantly evolving with energy market developments and *"access to high-quality and timely energy use information and analysis"* is crucial for government, business and households in being able to make efficient and well-informed decisions.

In this light, AIP supports coordinated Government efforts to:

- **consolidate energy data and activity analysis across the Australian Government**
- **develop higher-quality and broader coverage of the Australian Petroleum Statistics**
- **the development and application to all energy sectors of robust and accepted 'quantitative indicators' that can inform future security assessments (NESAs).**

Consistent with these principles, AIP supports two priority actions identified in the EWP:

- *"there is a need to improve the quality and coverage of the collection and publication of monthly national and state petroleum data through the Australian Petroleum Statistics."*
- *"The Australian Government is considering mandatory stock reporting in the context of its consideration of aspects of our international stockholding obligations".*

AIP agrees that *"the data* (the Australian Petroleum Statistics) *is collected on a voluntary basis, and requires review to improve its completeness, consistency and accuracy and to inform assessments of liquid fuel vulnerability. This will also improve the analytical capability of government and assist in reporting to the International Energy Agency."*

As noted in the Government's Liquid Fuels Vulnerability Assessment (LFVA), the coverage of Australian Petroleum Statistics (APS) does not include all major operators in the domestic market who hold significant stocks and the LFVA therefore recommends:

- *"In the light of the importance of industry statistics to ongoing assessment of vulnerability the government should mandate the provision of stocks data through the Australian Petroleum Statistics portal."*
- *"Responsibility for reporting stocks should remain with the owners of those stocks. Terminal owners should be required to advise importers of their responsibility to report and an annual survey of port authorities should be undertaken to ensure that all new storage is identified by the Department."*
- *"The Government should communicate its concerns over the calculation methodology to the IEA and seek a review of market arrangements in the Asian region and their impact on the calculation of stocks for Australia."*

AIP supports these recommendations. Given the importance of robust petroleum and stocks data, including to future government security assessments and to meeting Australia's international obligations, AIP member companies support all major fuel suppliers and importers supplying data to the Australian Petroleum Statistics. If this cannot be universally achieved across industry through voluntarily action (our preference), or if some market participants choose not to supply data, then AIP member companies would support the Minister imposing a mandatory data provision requirement under the *Liquid Fuels Emergency Act*. AIP member companies have supplied data voluntarily for many years.

AIP also agrees with the LFVA that the Government should also pursue all avenues with the IEA to recognise Australia's specific market characteristics, as well as the established dynamics of supply and trade in the Asian region, in the IEA's stockholding calculations.

- It is well accepted, including in the LFVA, that the current IEA methodology unjustifiably penalises Australia and other members of the IEA, as it has not adapted over the last decade or two to the significant global changes in crude and products markets as well as changes in supply and trade flows.

- The IEA last conducted a review of its 90 day calculation methodology in 2002, and there appears a strong case for the Government to seek a review of the IEA's core methodology supported by other relevant IEA members sharing similar market characteristics.

Once stockholding data and methodology issues are resolved, including with the IEA, if it is clear that Australia may be in 'structural breach' of its IEA obligations, or is very likely to be in future, then Government should commence a public process (informed by clear policy principles) to identify the most operationally feasible and lowest cost emergency stock arrangements for Australia to meet its IEA obligations.

ATTACHMENT 1

Australian Institute of Petroleum

‘Downstream Petroleum 2011’

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Downstream Petroleum 2011

Australian
Institute of
Petroleum

AIP mission and objectives

AIP was formed in 1976 to promote effective dialogue between the oil industry, government and the community. It replaced a number of other organisations such as the Petroleum Information Bureau that had been operating in Australia since the early 1950s. AIP has gained national and worldwide recognition as a key representative body of Australia's petroleum industry.

AIP's mission is to promote and assist in the development of a strong, internationally competitive Australian petroleum products industry, operating efficiently, economically and safely, and in harmony with environment and community standards. Through the active involvement of its members, AIP provides responsible and principled representation of the industry along with factual and informed discussion of downstream petroleum sector issues.

As well as its policy development role, AIP also runs the Australian Marine Oil Spill Centre (AMOSC) in Geelong that supports industry preparedness to manage an oil spill and responds to major spills to water that may threaten the environment.

AIP encourages decisions on regulations or self regulation which are taken on a case-by-case basis in the best interests of the consumer and the industry so as to achieve excellence in standards of industry safety and product performance; and works to ensure that due diligence is maintained at all times on industry safety, occupational health and environment protection.

Members and Associate Members

BP AUSTRALIA LIMITED

CALTEX AUSTRALIA LIMITED

MOBIL OIL AUSTRALIA PTY LTD

THE SHELL COMPANY OF AUSTRALIA LIMITED

AFTON CHEMICAL ASIA PACIFIC LLC

APACHE ENERGY LTD

ASP SHIPPING MANAGEMENT PTY LTD

BHP BILLITON PTY LTD

BJ PROCESS & PIPELINE SERVICES

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INPEX BROWSE LTD

INTEROIL

MEO AUSTRALIA LTD

NEXUS ENERGY LTD

NYNAS (AUSTRALIA) PTY LTD

ORIGIN ENERGY RESOURCES LTD

PAPUAN OIL SEARCH LTD

PTTEP AUSTRALASIA PTY LTD

RIO TINTO ALCAN GOVE

ROC OIL COMPANY LTD

SANTOS LTD

TEEKAY SHIPPING (AUSTRALIA) PTY LTD

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VERMILION OIL AND GAS AUSTRALIA PTY LTD

VOPAK TERMINALS AUSTRALIA

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Message from the AIP Chairman

***Downstream Petroleum 2011* sets out key industry facts and issues impacting on the downstream petroleum sector in Australia.**

Liquid fuels play a key role in the Australian economy and underpin the economic performance of many key industry sectors. Over the past decade, nearly $9.5 billion has been invested by the Australian petroleum industry in maintaining refinery reliability and safety, and to produce the high quality fuels required by government and demanded by industry and consumers. Terminal capacity has been expanded around Australia to facilitate reliable supply from local and imported sources to meet growing liquid fuel demand. There has also been major investment in fuel retailing to meet changing customer expectations. These investments, and the industry's ongoing pursuit of business efficiencies, are helping to maintain the internationally competitive prices of liquid fuels in Australia.

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.

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.

These challenges mean that governments in Australia have an important role in ensuring that regulatory decisions and imposts do not undermine the competitiveness of liquid fuel production and supply:

- the costs of carbon permits and other climate change response measures in Australia must be recognised and offset when the manufacturing of fuel imported from other countries is not subject to similar imposts
- any changes to fuel quality standards must be based on sound science and provide a net economic benefit to the community to justify the significant investment required to produce these fuels
- there must be consistency in the excise treatment of competing liquid fuels, taking account of energy content
- the current complex and overlapping array of environmental and other regulatory measures must be carefully reviewed and streamlined to ensure that current and future measures are soundly based, cost effective and harmonised.

An ongoing favourable climate for investment in Australian refineries, and fuel terminals that are able to efficiently meet growing import requirements, will be essential to maintain the high levels of liquid fuel supply reliability and security that consumers have come to expect. As the Australian Government's *2011 National Energy Security Assessment* indicates, liquid fuel supply reliability is maximised through a mix of Australian refined products as well as imported products from diverse international sources.

Biofuels and other alternative fuels will have a role in the liquid fuels market, provided consumers are satisfied that these fuels can reliably meet vehicle operability and environmental expectations and are cost competitive with conventional fuels. However, unless issues with reliability, quality and lack of diversity of biofuels supply can be resolved, and the excise differential removed from imported ethanol, it will be difficult for biofuel blends to be a consistently available, competitively priced, mainstream transport fuel of choice.

From a consumer perspective, Australian petrol and diesel prices continue to be among the lowest in OECD countries. In-depth annual reviews of fuel prices by the ACCC have confirmed the competitiveness of domestic fuel prices and markets, and the longstanding direct linkage between Australian fuel prices and internationally traded fuel prices in Singapore. The strong Australian dollar has insulated Australian fuel users from much of the large increases in international fuel prices over 2010 and 2011.

If an open market environment and level playing field can be maintained, the downstream petroleum industry expects to be able to continue to provide Australia with high levels of secure, reliable and affordable liquid fuel supplies.

Julian Segal
Chairman, AIP

4 Australian liquid fuel supply

Key messages

- The Australian refining industry is a price taker in the Asia–Pacific region. Profitability is related to Singapore product prices less crude oil and processing costs.
- Australian refineries are generally smaller than regional competitors.
- The Asia–Pacific region has a surplus supply balance due to increased supply from new refineries.
- Imports increased in 2010–11 to meet the growing gap between domestic refinery production and increasing demand.
- The Australian downstream petroleum industry has an excellent record over recent decades of ensuring reliable supplies.
- Variations in demand, and major supply disruptions have led to large fluctuations in crude oil and petroleum product prices.

In 2010–11, domestic refineries supplied around 74 per cent of petroleum products required by major industries and the fuel distribution network of around 6300 service stations. The reliability of the fuel supply system is high given the unique logistic and geographic challenges in Australia.

Australian petroleum refineries are highly capital intensive, technically sophisticated facilities that employ a wide range of highly skilled personnel and provide significant economic and other benefits to key Australian industries.

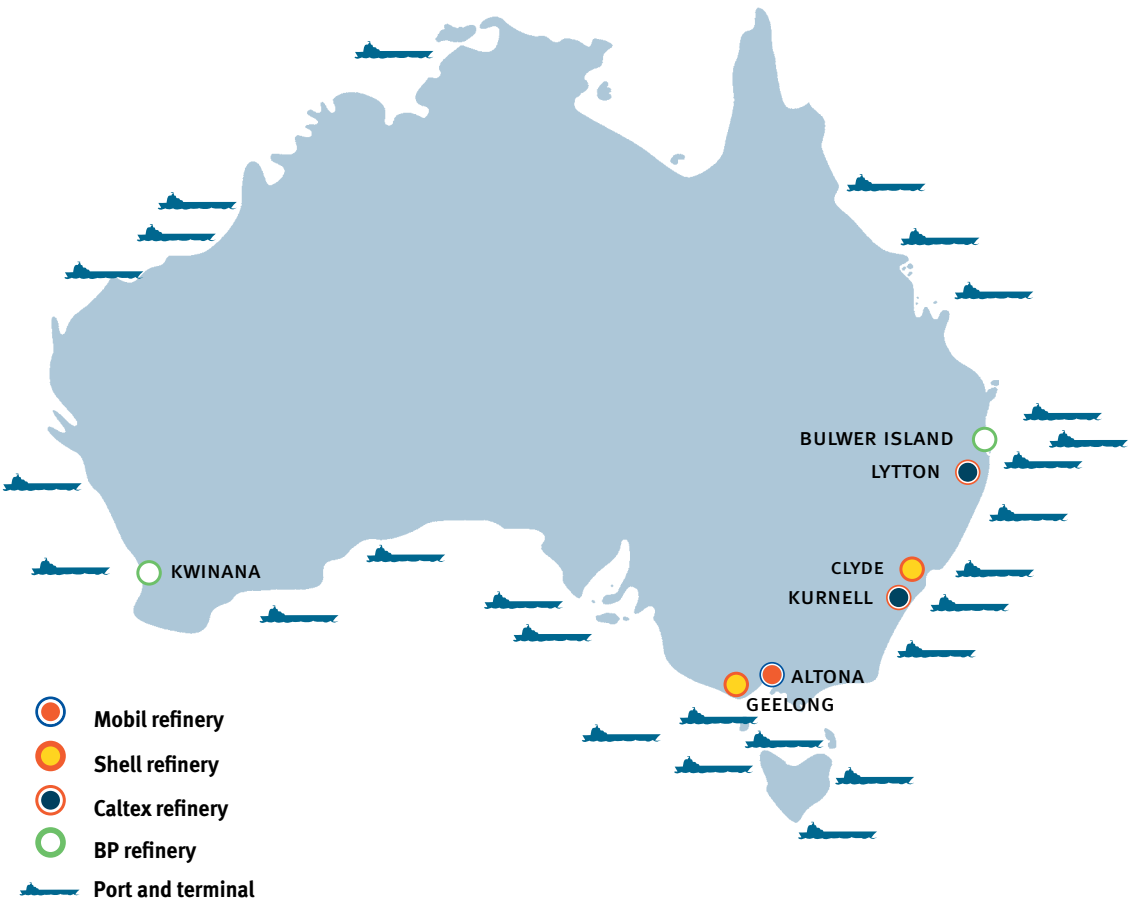
The Australian oil refining industry produces a range of petroleum products comprising:

- petrol (43%)
- diesel (33%)
- jet fuel (14%)
- fuel oil (2%)
- LPG (4%)
- other products (4%).

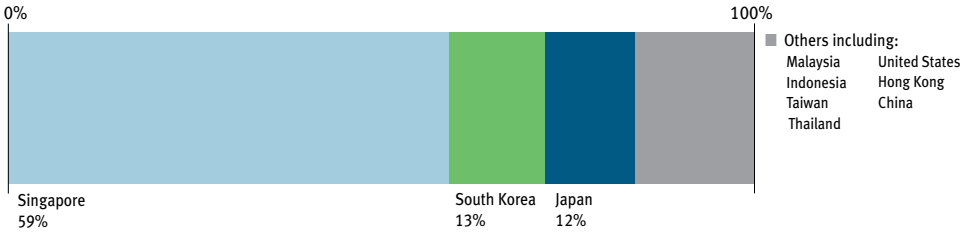
It also produces a substantial volume of chemical feedstock.

In 2010–11 Australia consumed 52 100 ML (megalitres) of petroleum products. Australian refineries produced 38 400 ML of petroleum products, of which around two per cent was exported (excluding LPG). Net imports accounted for 27 per cent (or 13 900 ML) of total consumption. A proportion of this imported volume was supplied to northern and north western areas of Australia where it is more economic to supply directly from Asia. Import terminals are located throughout Australia. The bulk of imported petrol was from Singapore.

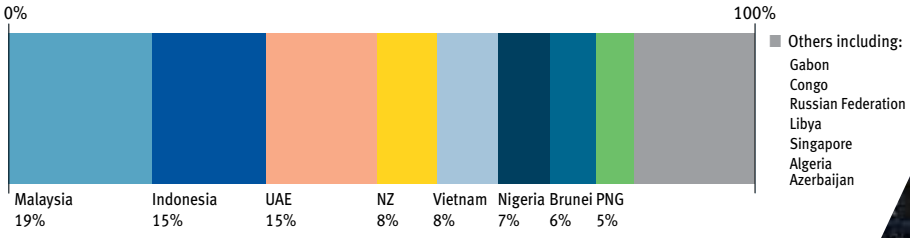
While Australia has substantial crude oil production, around 70 per cent of this oil was exported in 2010–11. Crude oils required to meet the product demand mix in Australia were imported by domestic refineries mainly from Asia (63 per cent), the Middle East (19 per cent) and Africa (14 per cent).



Imports of petroleum products: 2010–11



Imports of crude oil: 2010–11



Australia has seven refineries that were generally constructed in the 1950s and 1960s, although they have been extensively upgraded since then, particularly during 2005 and 2006 to meet tighter fuel standards. These refineries are relatively small, with the largest having a capacity of 8300 ML pa (megalitres per year), compared with the four largest Asian refineries which produce between 30 000 ML pa and 70 000 ML pa.

Australian refineries must price their output to be competitive with imports (i.e. import parity) from the Asia–Pacific region. There is no tariff protection and all seaboard capitals have import facilities. Profitability of the Australian refining industry is therefore largely determined by product prices in Asia, and its viability depends on our competitiveness against imports from Asian refiners. In future, the growth in demand in Australia will continue to be largely met by imports, further strengthening the price relationship with Asian product prices.

The demand for petroleum products in Australia was around 52 100 ML in 2010–11 (around 143 ML per day—a 2.6 per cent increase since 2008–09).

Australian refineries

Refinery	Capacity: (ML pa)
Bulwer Island (BP—Brisbane)	5910
Lytton (Caltex—Brisbane)	6300
Clyde (Shell—Sydney)	4990
Kurnell (Caltex—Sydney)	7820
Altona (Mobil—Melbourne)	4640
Geelong (Shell—Geelong)	7470
Kwinana (BP—Kwinana)	8300
Total	**45 430**

Refinery capacity has increased by 6.3 per cent since 2006 as a result of upgrades and de-bottlenecking investments by industry.

The Port Stanvac (SA) refinery (capacity: 4520 ML pa) ceased operations in July 2003 and was closed permanently by Mobil in July 2009. As one of the smallest refineries in the Asia–Pacific region, it could not compete against larger, more sophisticated regional refineries.

In March 2011 Shell announced that the Clyde (NSW) refinery would be converted by mid-2013 to a fuel import terminal.

International and Asian refining

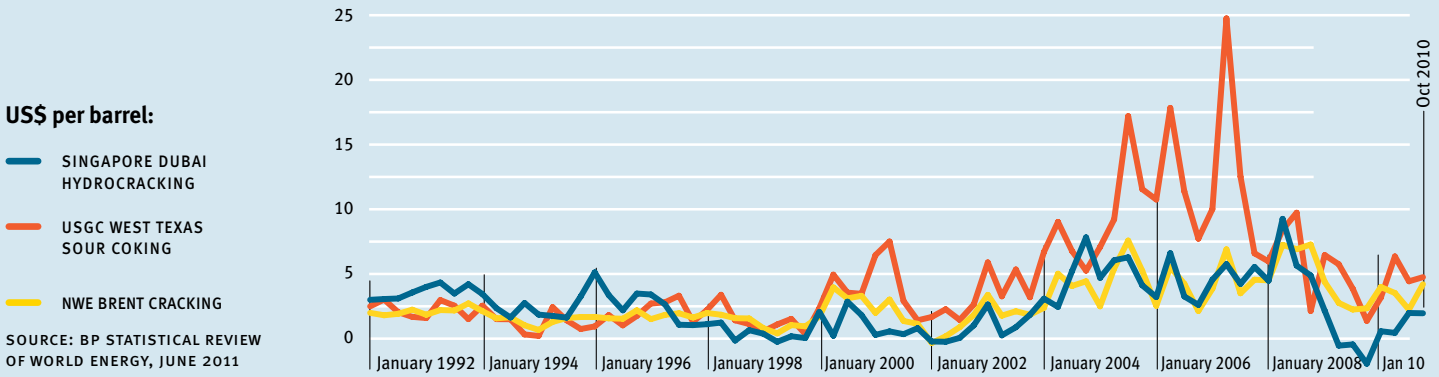
The separate but interrelated petroleum product markets in the USA, Europe and Asia continue to respond in ways driven by regional market dynamics.

Most markets have shifted to excess supply with many US and European refiners responding by capacity closures and the delay, scaling back or cancellation of additional capacity construction. The impact in the Asian region has been cushioned by ongoing economic growth in China and India, but there has been some capacity closure and some scaling back in refinery construction in the region. The majority of additions to global refining capacity continue to be in the Asian region.

Refiner margins have recovered from the negative margins seen in 2009, but during the period up to the end of 2011 had showed no sign of reaching the US$5–8 levels seen between 2004 and 2007.

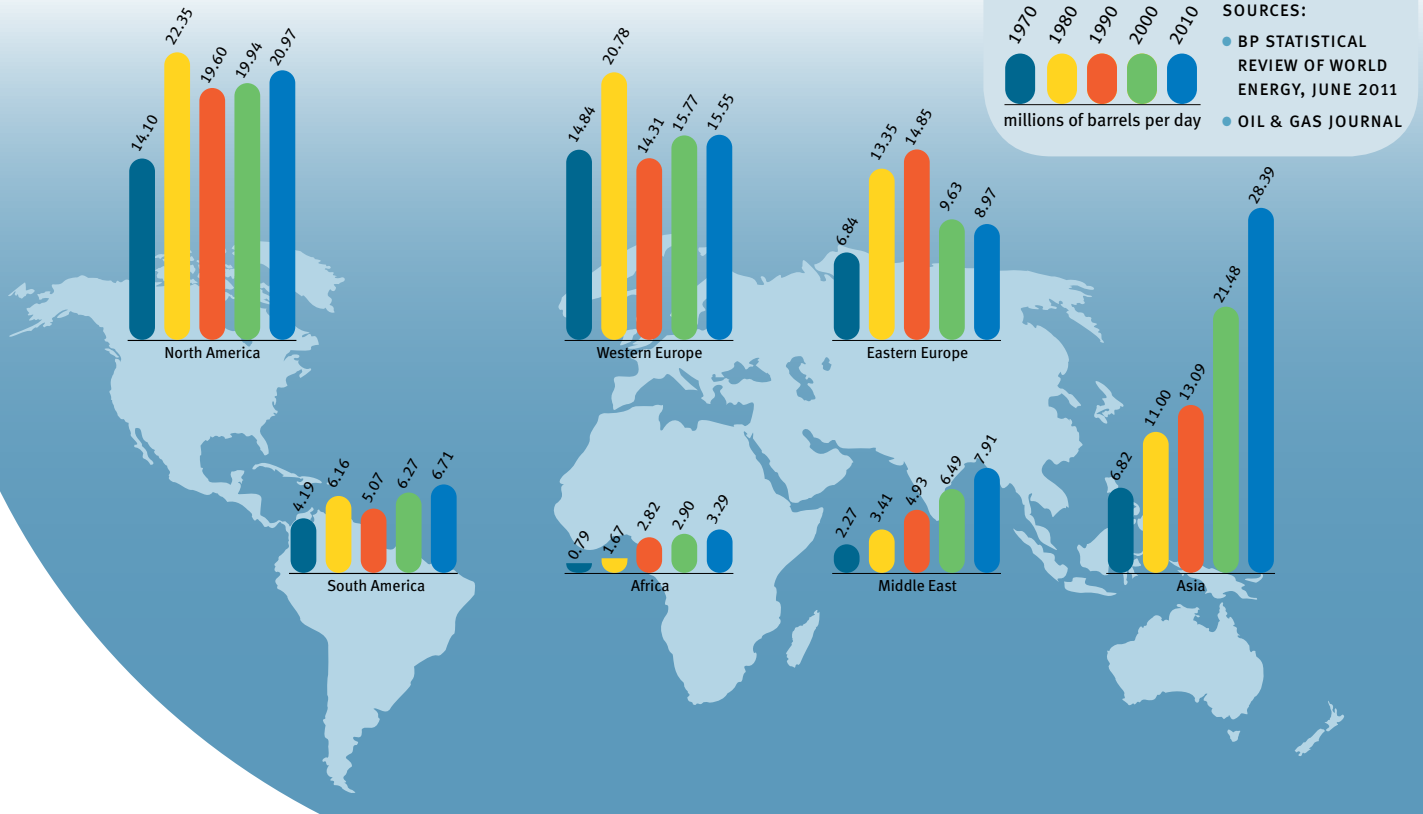
International forecasters such as the International Energy Agency (IEA) and FACTS Global Energy expect that refiner margins will remain under significant pressure for an extended period. For Asian refiners, margins for simple skimming refineries are forecast to be negative out to 2020. Margins for more sophisticated cracking refineries are forecast by FACTS to remain around US$2 per barrel until 2020.

WORLD REFINING MARGINS 1992–2010



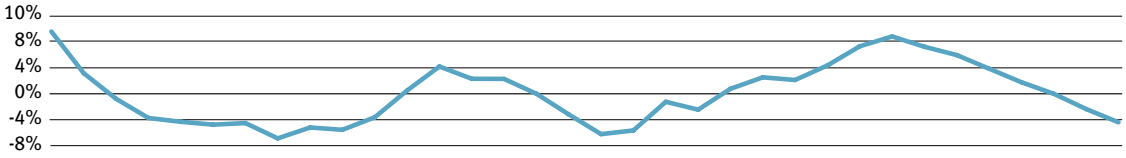
SOURCE: BP STATISTICAL REVIEW OF WORLD ENERGY, JUNE 2011

World refining capacity

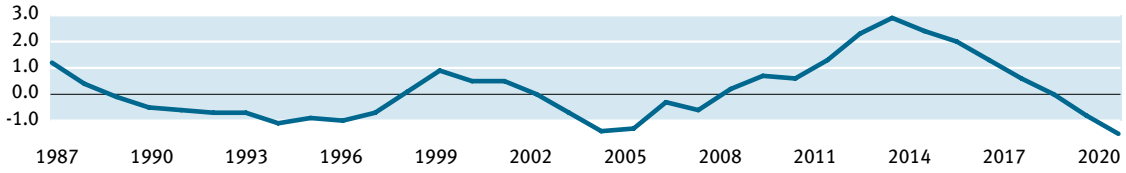


Asian excess supply capacity

PROPORTION OF TOTAL SUPPLY (%)



EXCESS SUPPLY (MILLIONS OF BARRELS)



SOURCE: FACTS GLOBAL ENERGY & CALTEX

Following a shortfall in supply of refined products in 2005–06, the advent of new refinery capacity saw the Asian products market return to balance around 2008. For a number of years, international forecasters have expected a continuing excess of supply, peaking in 2014, with the subsequent duration and extent of the excess supply uncertain. This general outlook for Asian supply/demand balance has led to some rationalisation of the refining industry in the major producing countries as well as delays in addition of new capacity in the region.

Key factors influencing this regional outlook continue to be economic growth (particularly in China and India), decisions made about construction of planned new refining capacity, and ongoing rationalisation of existing, less efficient, refining capacity.

Economic growth is the key driver of liquid fuels demand, and growth in China and India has remained strong despite the global financial crisis. However, there is still significant uncertainty regarding the course of world economic growth. It appears at this stage that economic growth in the Asian region will continue to be relatively strong in the short term, although there will be flow-on effects to product demand from lower economic performance in other regions.

The course of the Asian refining industry will largely be set by supply side responses. A key factor is the level of ownership of the regional refineries by national oil companies (NOCs) or by companies with close associations with their host government.

This relationship and national development goals mean that refinery investments are likely to continue to occur despite weaker commercial incentives. For example, China has a policy of national self sufficiency in refining capacity, and investments are expected to continue regardless of refining margins.

It is also likely that existing refining capacity of NOCs, which do not have the same commercial disciplines as privately or publicly owned refineries, will remain open despite the prospect of low refiner margins. For example, small regional refineries in China are likely to remain open well beyond what could be justified on purely commercial factors.

On the other hand, some refineries operated by private sector companies have closed or significantly cut production runs thereby reducing their capacity utilisation.

Regional refiners have also been impacted by changes in the differential between the prices of light sweet and heavy sour crudes. The significant premium for light sweet crude since 2004 caused many refiners, including some Australian refiners, to install equipment to process heavy sour crudes. Ongoing political unrest in the Middle East over the past year or so has further increased the premium for light sweet crude oil.

Asian export production

The Singapore refining complex is primarily oriented to exports. This is a key reason why Singapore is the regional hub for the liquid fuels market.

South Korea, Taiwan and India also have significant export capacity. Other refineries in the region occasionally sell surplus production to the market.

The major refineries currently under construction, or recently completed in Asia, are very large. For example, the Reliance refineries at Jamnagar, India have doubled capacity to nearly 70 000 ML pa (nearly twice Australia's total refining capacity). Other large projects under construction or being considered in the region have capacities ranging from 12 000 to 75 000 ML pa in China, and 25 000 ML pa in South Korea. The combination of size and the use of newer technologies will make these refineries the low cost competitors in the Asian region.

8 Refinery competitiveness

Key messages

- The Australian refining industry is part of a highly competitive global oil market. Profitability and ongoing viability will be determined by supply and demand in the Asia–Pacific refining industry.
- Australian refineries face significant challenges over the next decade including:
  - excess refinery capacity in the Asian region
  - increased competition from mega-refineries in Asia
  - commercial pressures for increased business efficiencies and avoidance of new costs
  - implementation of climate change policies
  - general tightening of regulatory requirements
  - competing demand for construction services and skilled labour.
- Continued viability of Australian refineries will require sound public policies based on efficient and competitive market principles.

Economies of scale provide a key competitive advantage in refining, with larger refineries having lower unit costs of production.

Economies of scale arise from larger production runs, lower capital and labour costs per unit of production, and lower purchasing costs for greater volumes of inputs, such as crude oil and energy. In addition, newer refineries have additional efficiencies arising from newer technologies and the associated flexibility in the crude oil inputs and product slates.

Refiners seek to run the optimal mix of crude oils through their refineries, depending on the relative price of available crudes, the specific equipment at the refinery, and the desired output mix to meet the demand and quality standards of their target markets.

While the cost of crude oil is the major input cost for refineries (over 90 per cent according to the ACCC), other key expenses for refineries include:

- crude oil shipment and storage
- the cost of additives, catalysts and chemicals
- capital costs/depreciation
- wages and salaries
- plant maintenance and 'outages'
- site security and systems
- environmental protection measures
- product shipment and storage
- utilities and energy charges
- government taxes and charges.

Refineries seek to manage the challenges they face by improving the efficiency of their operations through enhanced refinery yields, reliability and cost containment. The continued availability of highly trained technical staff and contractors contributes to high levels of refinery efficiency.

Competitiveness of Australian refineries

Compared to refineries across Asia, Australian refineries suffer from substantial disadvantages in operating and capital costs that virtually preclude Australia from consideration for major new refinery projects.

The relatively small Australian refineries offer no economies of scale benefits. As an industrialised nation, Australia offers none of the capital or operating cost benefits available in many developing countries.

Australian labour and construction costs for new and expanded refinery investments are significantly higher than in the United States and in most countries in Asia.

In addition, the taxation and investment regimes applying in Asia are highly attractive for new facility construction and for substantial refinery upgrades, through the provision of taxation holidays, substantial investment allowances and investment facilitation.

These competitive disadvantages impact adversely on the decisions that must be taken by Australian refiners on major refinery upgrades and overhauls.

More complex and stringent environmental and other regulatory measures also pose significant constraints on new investment in Australia and provide ongoing challenges for existing Australian refineries. For example, fuel pricing, charges and taxation, fuel standards and climate change policies are regulated by overlapping and complex federal and state government policies. The many overlapping federal, state and local government regulations impacting on refineries increase the complexity of operations and raise the costs of doing business in Australia.

As Australian governments focus their attention on strategies to maintain and enhance the role of the manufacturing industry, key considerations for the future of the Australian refining industry will include:

- how to offset the capital and operating cost advantages offered by industrialising countries in Asia and elsewhere
- how to reduce the complexity and cost of doing business for Australian refiners
- how to ensure that new and modified regulatory policies do not place Australian refineries at a further disadvantage compared to competitor refineries in Asia.

Economic contribution of the Australian refining industry

The Australian refining industry is a significant contributor to the Australian economy providing direct and indirect economic benefits from its own activities and underpinning the competitiveness of key Australian export industries.

Economic modelling by KPMG Econtech found that the downstream petroleum industry directly contributed 0.5 per cent of GDP or $6.2 billion per annum. This contribution to GDP is two-thirds the contribution of the textiles, clothing and footwear industry and twice that of the forestry and fishing industries.

Each refinery is a significant economic contributor to their local region directly and indirectly providing some 3500–4000 jobs, with many concentrated in the local areas and in the supply of goods and services to the refinery.

As a technologically advanced industry, refineries employ and train many highly skilled, technical 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.

The Australian petroleum refining sector underpins the competitiveness of other key Australian export industries — 48 per cent of all petroleum products by value are used in the agriculture, forestry and fishing, manufacturing, mining and transport industries. Petroleum products make up a significant portion of the intermediate input costs of key industries — 27 per cent in air transport, 19 per cent in road transport and around 12 per cent in various mining activities.

Australian refineries also contribute to the high level of liquid fuel supply security in the Australian energy market.

Profitability measures

The profitability of the Australian downstream petroleum sector is largely driven by the supply and demand balance in the Asian region. The region continues to be oversupplied with petroleum products and as a consequence Australian industry profits continue to be subdued. Profitability will only improve with further growth in demand in the region and reductions in excess supply from refineries.

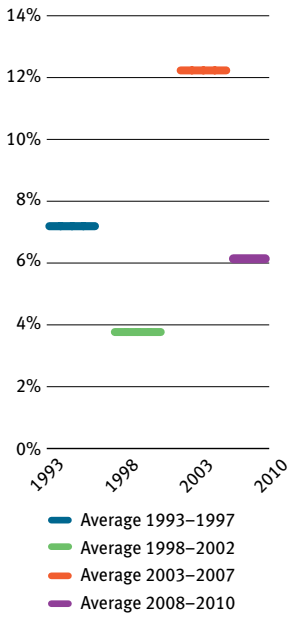
Over the last 18 years, there have been four distinct periods of Australian downstream petroleum industry profitability. From 1993 to 1997, in a period of excess supply, five year average returns were 7.3 per cent. With even greater levels of excess supply in the period 1998–2002, five year average returns fell to 4 per cent. From 2003–07, five year average returns increased to 12.2 per cent reflecting a period of excess regional demand. Over this period, ten year bond rates were around 5–6 per cent.

The GFC led to more volatile returns in the industry with an underlying return of 1.2 per cent in 2008 as the crisis unfolded. Significant cut-backs in regional refinery capacity utilisation, a low Australian dollar and an unexpected increase in demand saw returns increase in 2009 to 11.3 per cent.

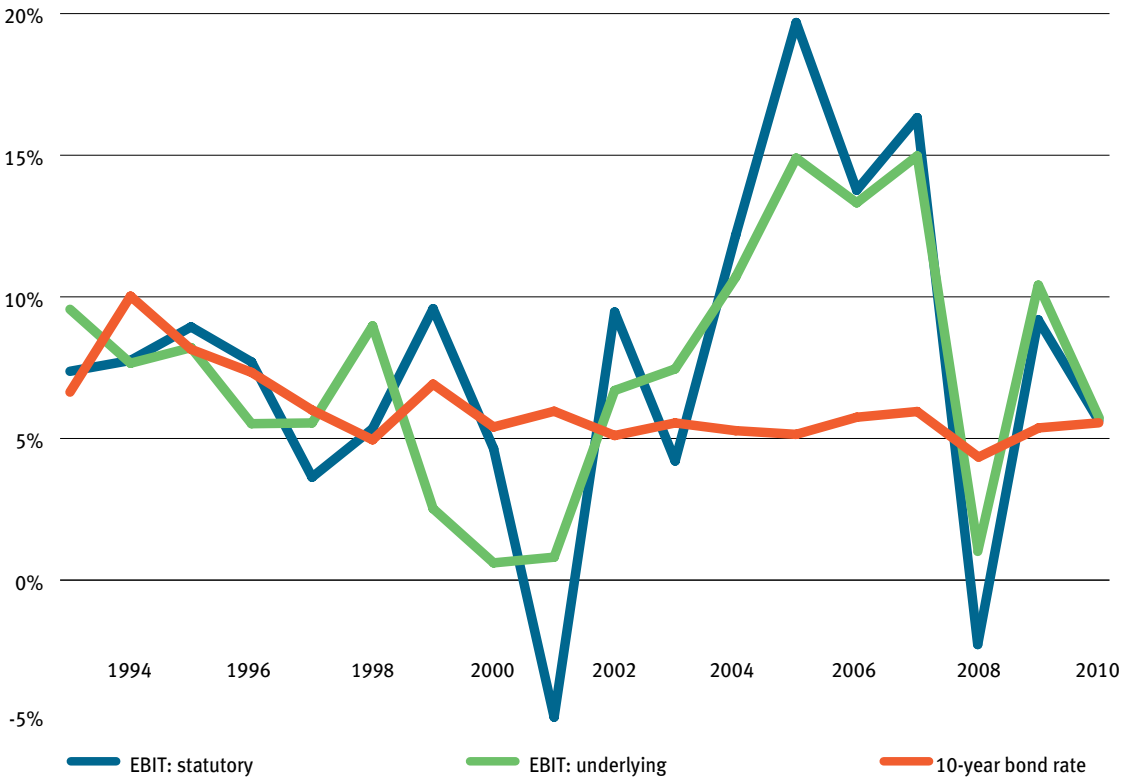
Increased regional refinery utilisation in 2010, a strong Australian dollar and slower demand growth caused returns to decrease to 5.6 per cent. The average returns over the period 2008–10 were 6 per cent compared to a ten year bond rate of around 5 per cent.

The extent of the excess refinery capacity in the Asian region is more than sufficient to meet projected increases in regional demand over the next several years. A strong Australian dollar will have ongoing negative effects on Australian refinery profitability since imports are likely to remain more competitive and costs will remain high. It can be expected that Australian industry returns will be relatively low and potentially volatile until the excess regional refinery capacity is reduced.

Five-year average return on assets on underlying EBIT: PER CENT



EBIT on total assets: PER CENT



Measures of profitability are presented as earnings before interest and tax (EBIT) on total assets for both statutory and underlying returns. The statutory return is reported in company accounts and complies with reporting requirements under relevant legislation. The underlying return removes the impact of stock gains and losses to derive a profit result not affected by the impact of movements in international crude oil and product prices. Removing the stock valuation effects from profitability measures provides a clearer picture of the fundamental economic performance of the industry.

Investment and profits

Due to its capital intensive nature, the downstream petroleum industry routinely requires large and ongoing capital investment in plant and equipment to continue safe and reliable operations.

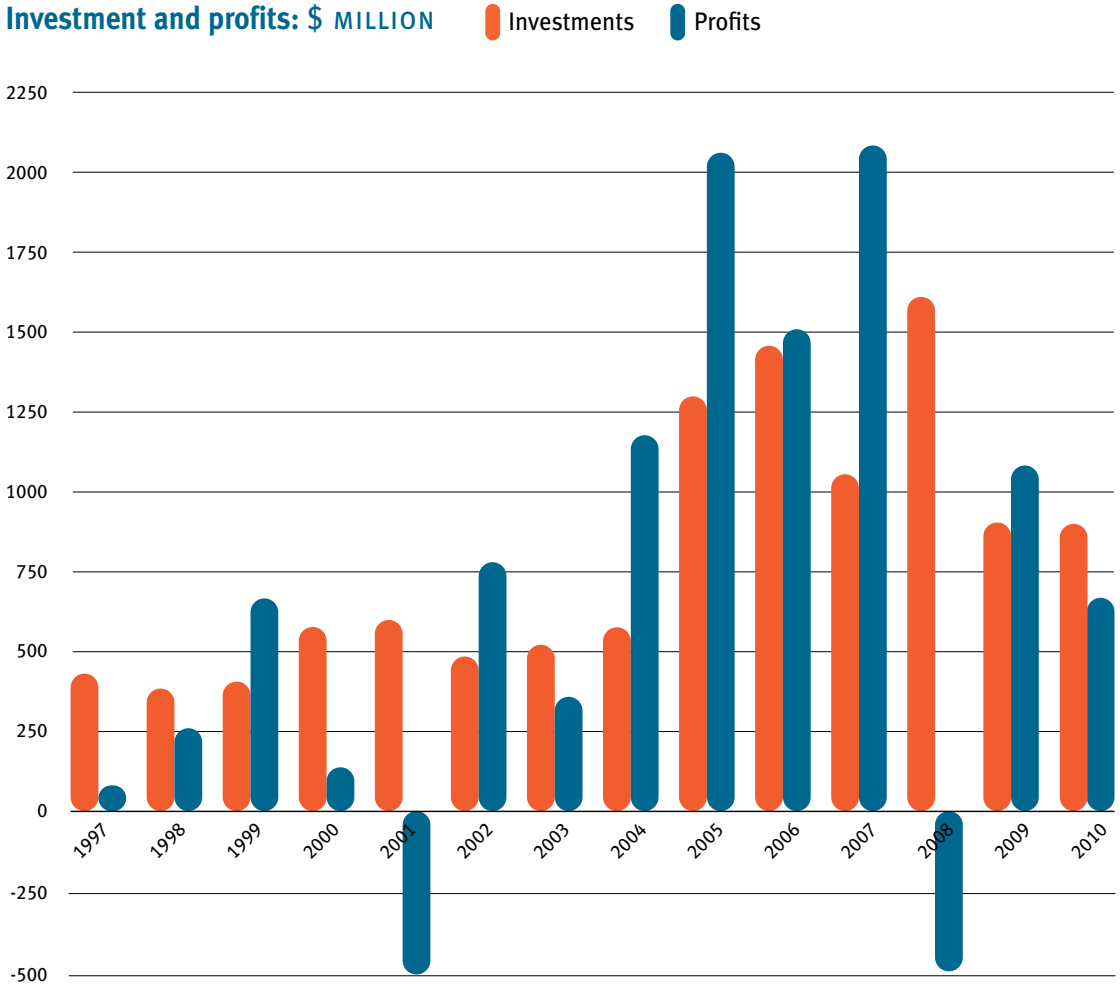
Over the decade to 2010, the industry has invested nearly $9.5 billion. In comparison, net profits over the same period were $8.7 billion on a statutory basis and $9.1 billion on an underlying basis. As a proportion of net profits, investment in this period was 108 per cent of statutory profits and 103 per cent of underlying profits. These proportions were even higher over the five year period 2006–10.

In 2009 and 2010 the industry invested $900 million each year despite the significant decline in profits since 2008 and the lacklustre outlook for future profits. These investment levels were below the investment levels in 2005–08, which were associated with plant and equipment to implement the major phases of the Australian Government's Cleaner Fuels Program.

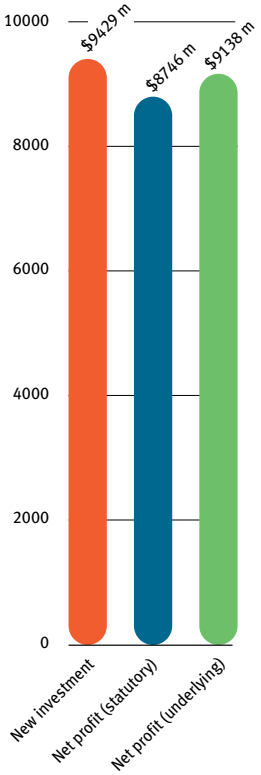
The outlook for relatively low refiner margins over the next few years means that Australian downstream petroleum industry profitability is likely to be at the lower end of the range seen over the past decade. Australian refiners are expected to continue to seek ways to maintain their competitiveness through productivity improvements, energy and process efficiency measures and technological innovation. However, any significant investment over the coming years will be tested against the potential for greater returns through refinery investments in other countries and through non-refinery investments.

Against this background, any additional investment in Australian refineries that is driven by government regulation, such as fuel standards, will be exceedingly challenging. It must be noted that the major investments needed to implement the Cleaner Fuels Program were undertaken during a period of much higher returns.

Investment and profits: $ MILLION



Downstream petroleum investment and profits: $ MILLION (2001–2010)



Comparative Australian industry profitability

The cyclical nature and the ongoing challenges to the Australian downstream petroleum industry are further demonstrated by comparative industry profitability analysis. The Australian Competition and Consumer Commission (ACCC) (*Monitoring of the Australian petroleum industry, December 2011*) reported relative profitability of key Australian industries between 2002–03 and 2010–11.

The ACCC noted that the Australian downstream petroleum industry return on assets was less than 10 per cent. This was comparable to returns in the food and beverage sectors. In comparison, returns in the food and staples retailing sector were over 18 per cent.

The ACCC also reported relative profitability of the refining, wholesale and retail components of the petroleum industry compared to similar components of other key industries. Over the same period the ACCC noted that:

- petroleum refining activities showed a return on assets comparable to the food products and building products industries, but significantly lower than the health care and supplies industry
- petroleum wholesaling returns on assets were above most product wholesaling industries, except meat wholesaling
- retail petroleum returns on assets were well below the average for ASX200 retail companies.

These results underline the competitive pressure on every level of the downstream petroleum industry. The returns to the downstream petroleum industry are generally lower when compared to other industries of similar size and turnover value. When this result is considered with the favourable international comparison of Australian fuel prices and the recognised efficiency of the industry, a clear conclusion can be drawn from the latest ACCC price monitoring report that Australians are receiving value for money on liquid fuels at every level of the industry.

S&P/ASX 100 Australian industries return on assets: 2002–03 TO 2010–11

SOURCE: ACCC

Australian Government policy

In addition to international and Australian market challenges, the downstream petroleum industry faces a complex policy environment regulated by federal, state and local governments.

AIP considers that a key role for governments is to provide a clear, stable and consistent longer term policy framework, underpinned by a strong market-based approach.

Government policy should:

- ensure a competitive and open market is maintained in Australia
- ensure that the local refining industry is not competitively disadvantaged in the Asia–Pacific region
- maintain a strong commitment to technical skills development in the Australian education system.

Government policies will have significant impacts on the commercial viability of refineries. Government policies will also impact on investor perceptions of the longer term prospects for Australian refineries.

This, in turn, will impact on the ability of Australian refiners to attract further investment for refinery upgrades, and ultimately for major maintenance programs.

Key policy influences on the competitiveness of the Australian downstream petroleum industry are:

- fuel quality regulation
- liquid fuel supply reliability and security
- alternative fuels policies
- fuel and corporate taxation
- skilled labour availability and training
- climate change policy
- environmental and OHS regulation
- competition regulation.

In each of these areas, AIP and member companies advocate policies that apply equally to all industry participants and are based on sound science supported by comprehensive economic analysis.

Proposals for changes to current market-based policy settings need to clearly demonstrate that:

- a real market failure or vulnerability exists within the industry
- new policy measures will produce a net benefit to the community and will not impact adversely on the competitiveness of the industry or liquid fuel supply security and reliability
- continued reliance on domestic and international markets is unable to deliver a similar outcome.

14 National fuel quality standards

Key messages

- Government regulated fuel quality standards facilitate the introduction of advanced engine technologies. Benefits include improved urban air quality (reduced smog and particulates), reduced greenhouse gas emissions, and improved fuel efficiency.
- Cleaner fuels require major refinery investment, cost more to produce and lead to higher CO_2 emissions from refineries.
- Benefits of further tightening fuel standards for premium grade petrol do not outweigh the costs of such action.
- For alternative fuels to compete in the market, they must be competitively priced, be reliably supplied and have consumer acceptance.

AIP supports appropriate national fuel quality standards to facilitate the introduction of advanced engine technologies and so help reduce scientifically established urban air quality impacts.

AIP has worked closely with governments and the motor vehicle industry to ensure that fuel quality standards are consistent across Australia, and predictable, so that participants in the market have sufficient time to implement and adjust to any new standards.

Long lead times (which are getting longer due to resource and labour constraints) are required to make the necessary engineering changes to refineries. Consistent and stable application of policy is also essential to provide the framework for refiners to recover their increased costs.

The *Fuel Quality Standards Act 2000* provides the regulatory framework for fuel quality standards in Australia and for progressive changes in standards.

Over the past decade the Australian refining sector has invested well over $3 billion to implement the Australian Government's Cleaner Fuels Program.

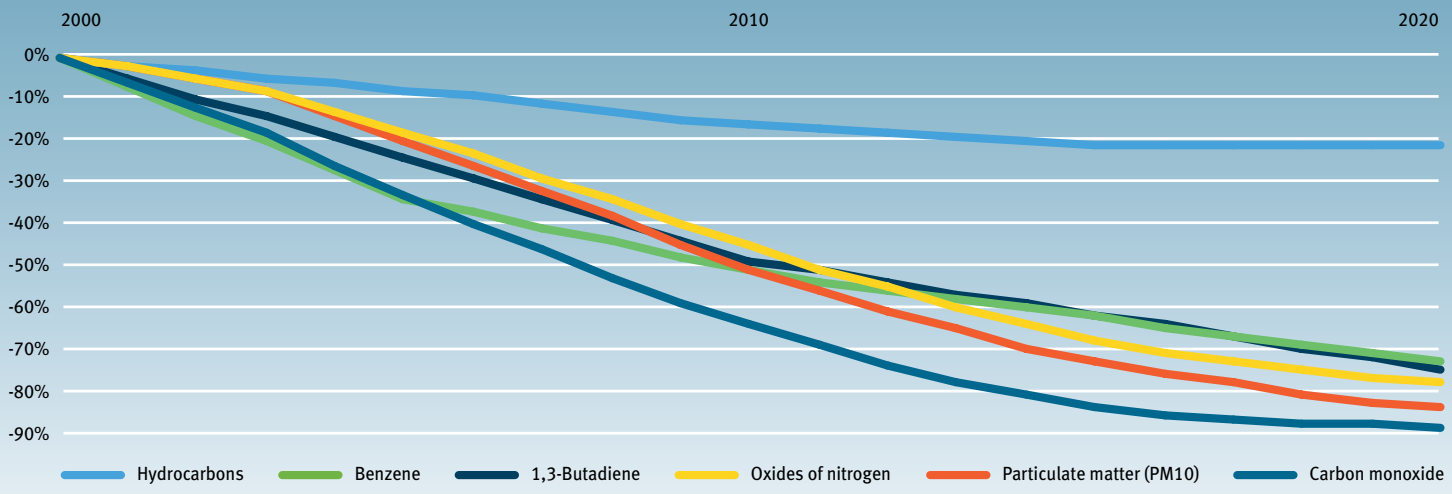
Premium unleaded petrol (PULP) which is expected to be the base grade petrol for new vehicles in Australia is at an equivalent Euro 4 standard, and diesel is at an equivalent Euro 5 standard. These petrol and diesel fuel standards when combined with complementary engine technologies will address virtually all national air quality issues that can be controlled by regulating fuel quality.

No further major adjustments to Australian fuel quality standards are required to meet identified technology facilitation, urban air quality or climate change emission reduction objectives.

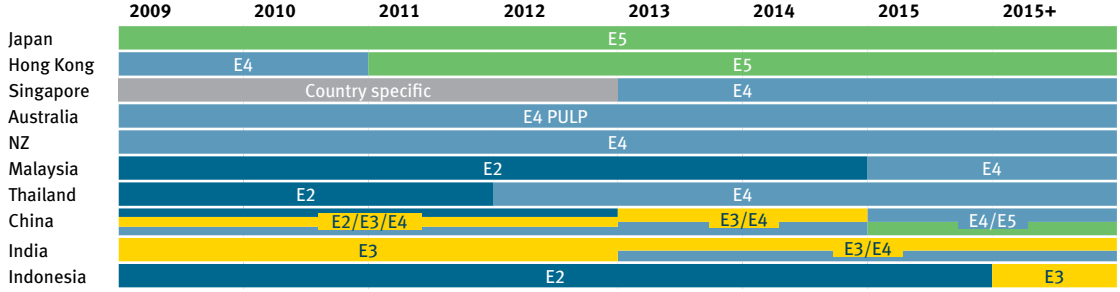
All prospective major gasoline vehicle technologies, except for lean burn gasoline direct injection (GDI) can operate on fuels already available in the Australian market. Some lean burn GDI engines require 10 ppm sulfur (Euro 5) PULP to operate. However, this technology is only used in the very small, high performance, segment of the vehicle market, so production and distribution of a boutique fuel for such a small market segment is not commercially viable. Lean burn technologies are no longer produced in Japan and are unlikely to be produced in Europe beyond 2015.

New engine technologies, such as homogeneous charge compression ignition (HCCI) are expected to enable further improvements in fuel economy and lower emissions to be achieved without requiring tighter fuel quality standards than those met by fuels already available in the Australian market.

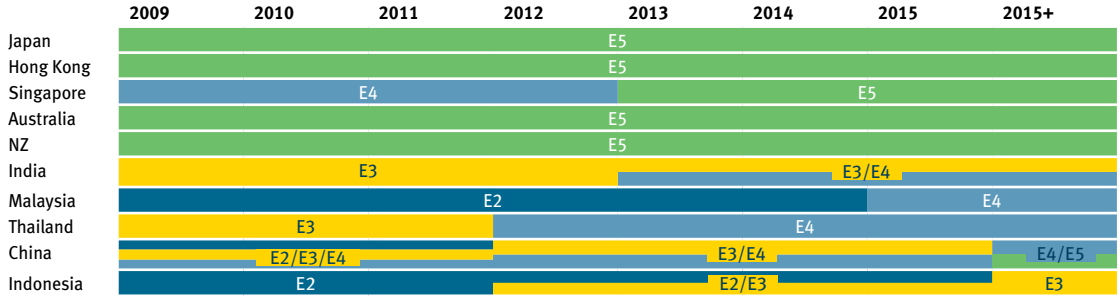
Reduction in vehicle emissions from cleaner fuels



Petrol regulatory outlook for the Asia–Pacific region



Diesel regulatory outlook for the Asia–Pacific region



Countries in the Asia–Pacific region are mandating cleaner fuels on different timelines. As demand for higher quality fuels has increased, refineries in the region are producing these fuels as standard products rather than as boutique fuels for specific markets. This has resulted in increased availability of the cleaner fuels.

Euro standards (E2, E3, E4, E5) relate mainly to the reduction of sulfur in petrol and diesel, although they also set standards for other product parameters such as benzene and other aromatics, olefins, cetane, density, lead and oxygen.

For sulfur levels in petrol: E2 sets the limit at 500 ppm, E3 at 150 ppm, E4 at 50 ppm and E5 at 10 ppm.

For sulfur levels in diesel: E2 sets the limit at 500 ppm, E3 at 350 ppm, E4 at 50 ppm and E5 at 10 ppm.

Renewable and alternative fuels

Alternative fuels that are used or have been proposed for use in Australian motor vehicles include:

- **biodiesel and biodiesel blends**
- **ethanol blends in petrol up to 10 per cent**
- **high ethanol content fuel (up to 85 per cent)**
- **liquefied petroleum gas (LPG)**
- **compressed natural gas (CNG)**
- **liquefied natural gas (LNG).**

AIP strongly supports market based approaches to the supply of fuels in Australia. Biofuels and alternative fuels will have a place in the Australian fuels market as long as they are:

- available at a competitive price
- reliably supplied
- acceptable to consumers
- produced sustainably.

Government policy in support of biofuels and alternative fuels needs to be:

- transparent, with clear and credible objectives
- based on sound science
- cognisant of other policy settings.

AIP does not support mandates requiring the use of any particular type of fuel because mandates imply higher cost fuels, may reduce market transparency to suppliers or consumers, do not engender market and price competition for the supply of the fuel to wholesalers and retailers, and fail to encourage the development of robust and reliable fuel supplies. All of these features are evident in the Australian biofuels market.

AIP is concerned that while mandates for biofuels, through restricting consumer choice, may help to create increased demand:

- interactions between biofuels policies and other policies relating to fuel excise and customs duty have created market distortions that have impeded the establishment of a properly functioning biofuels market and supply chain
- there is ongoing uncertainty surrounding biofuels supply reliability
- there is not effective competition involving a diverse number of ethanol producers in the wholesale biofuels markets
- a compliance regime has developed that lacks predictable and equitable outcomes for all suppliers.

AIP opposes differential fiscal treatment of domestic and imported ethanol and considers that this fundamentally undermines supply reliability and competitive market pricing for ethanol. The fiscal treatment of imported and domestically produced ethanol must be changed so that an efficient and stable ethanol market can be created with significantly improved options for supply.

The lack of a coherent policy framework across all jurisdictions, limited supplies of competitively priced biofuels, and quality concerns with some sources of biodiesel, are hampering the development of a commercially viable biofuels industry.

The petroleum industry is working with governments and other stakeholders to address these and other barriers to greater use of biofuels in the retail and commercial fuels markets.

Maintaining supply security and reliability

Key messages

- Australia's longer-term fuel supply security and transport energy needs will best be met through market measures including:
  - open crude oil and fuels markets
  - competitive, market determined prices
  - clear investment and market signals
  - flexible and resilient supply chains
  - efficient supply management
  - diversity of crude oil and liquid fuel sources
  - competitive and viable domestic refineries
  - policy and competitive neutrality between transport fuels
  - improved vehicle technologies
  - reliable, clean and high quality fuels acceptable to consumers.
- AIP considers that these conditions exist now for liquid fuels. Therefore the future imperative for governments is to maintain or further strengthen these market features.

Supply security

Australia currently enjoys a high level of liquid fuel security and this position is not expected to change in the coming years.

The strength of Australia's position is due 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)
- 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.

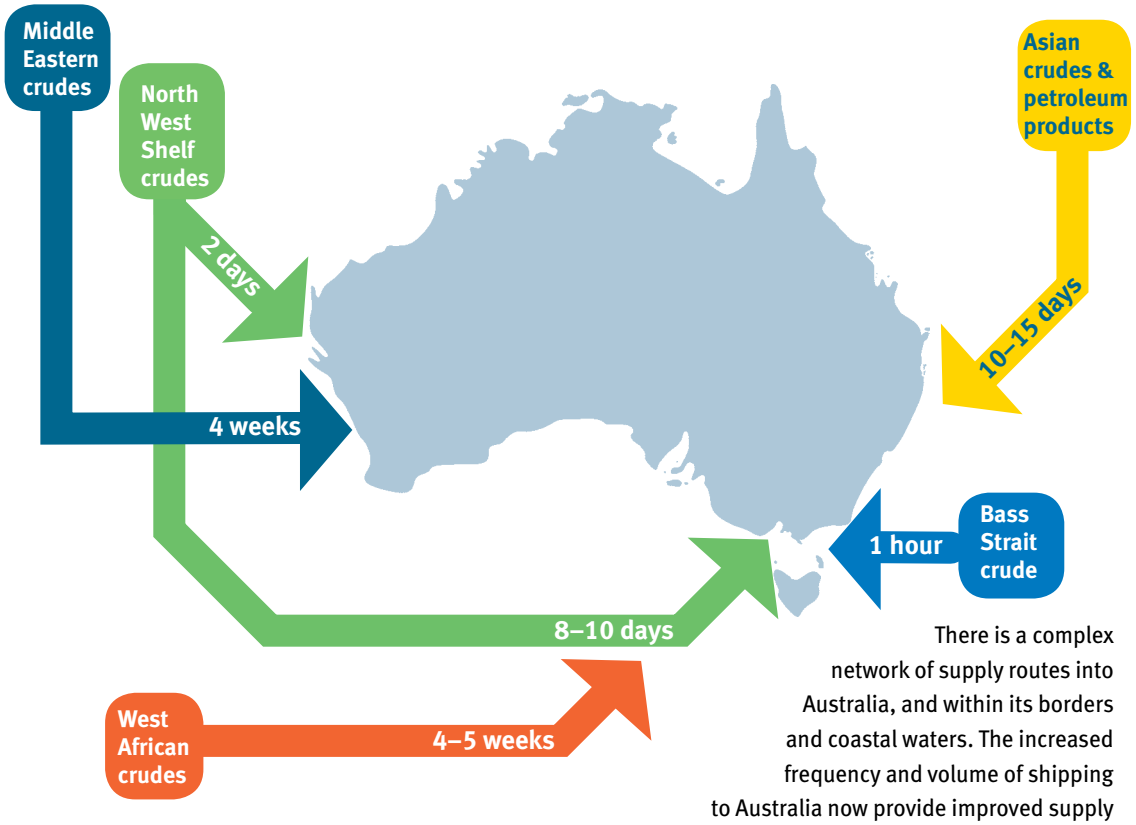
This assessment is confirmed in government and independent reviews of liquid fuel supply security released in 2011 including the National Energy Security Assessment (NESA) and the ACIL Tasman Liquid Fuel Vulnerability Assessment.

The industry has well established and reliable access to crude oil and petroleum product supplies from across the region and beyond. Current and forecast excess supply in the region supports this ready availability of product suitable for Australian needs.

Australia will continue to be able to access crude oil to meet its refining needs as well as imported petroleum products for customers as long as we pay the prevailing international market price.

Australia's market based approach has delivered secure, reliable and competitive liquid fuel supplies which meet the operational requirements of consumers and major fuel users.

If governments wish to consider new policies for domestic energy security purposes, the impacts on the international competitiveness of Australian refineries, and on consumer fuel prices, need to be well understood by the community.



There is a complex network of supply routes into Australia, and within its borders and coastal waters. The increased frequency and volume of shipping to Australia now provide improved supply chain flexibility to respond to supply disruptions.

Supply chain reliability

The Australian fuel supply chain delivers a high level of reliability by global standards.

The supply chain includes crude and product shipments, refinery throughput, storage tanks, extensive terminal and distribution networks, around 6300 retail outlets, and the extensive storage facilities of bulk fuel customers.

There are strong business pressures on fuel suppliers to maintain resilient and efficient supply chains, since this is essential to minimise costs, and to maintain or increase sales through a reputation for reliable supply.

To maximise the benefits of increased shipping volumes to Australia, new import and storage facilities have been installed in 2010 and 2011 and more are under construction or planned. This infrastructure has been independently assessed as being able to meet Australia's future fuel supply needs.

Current industry stockholdings reflect a sound commercial assessment of likely operating conditions and disruption risks. Independent analysis has confirmed these commercial stockholdings have not declined in recent years and have kept pace with recent increases in fuel demand.

Any increase in stockholding levels beyond commercial levels would place higher costs on the supply system that would be passed on to consumers.

Managing supply disruptions

There are a variety of unplanned events that can create fuel supply challenges including:

- refinery production disruptions
- breakdowns in key supply infrastructure
- delays in ship arrivals
- customer demand exceeding identified or contracted supply requirements.

However, the impact of such disruptions is rarely felt by consumers, as refiners and major fuel suppliers are adept at managing these issues as part of day-to-day operations.

Rapid and comprehensive industry response strategies are in place to address or replace any lost supply, including:

- numerous 'in-refinery' technical options
- utilising alternative supply infrastructure and supply and distribution routes
- sourcing supplies from other Australian refiners and fuel wholesalers
- sourcing supplies from international sources and the spot market
- equitably allocating bulk fuel to customers
- drawing down industry stockholdings.

In addition, all fuel consumers, particularly large fuel users supporting the economy and the community, are expected to fully understand and to have plans to manage the impact of a fuel supply disruption on their operations.

Emergency supply management

Industry and governments recognise the potential risks and impacts of a disruption to liquid fuel supplies. AIP actively participates in government sponsored management committees like the National Oil Supplies Emergency Committee (NOSEC).

While every effort is made by industry to ensure continuing reliable supply, NOSEC and the International Energy Agency (IEA) have established management plans that would help ensure a coordinated response to any liquid fuel supply or oil emergency at a national or international level.

According to detailed IEA reviews of Australia's emergency response capability, the security of supply in Australia is well served by an industry which operates a resilient and diversified supply chain. It is also supported by a regime of policy and regulatory emergency measures, regular in-depth vulnerability assessments, and international advocacy of open global energy markets.

The international crude oil and product markets

Key factors influencing international oil prices:

- short and longer term changes in regional and global supply balances
- major supply disruptions from natural disasters, war, civil unrest/strikes
- seasonal demand and demand spikes
- inventory management
- shipping availability and freight rates
- market trading activities and strategies
- short term decisions of oil producing countries, National Oil Companies (NOCs) and nations holding strategic reserves
- changes in economic conditions/sentiment
- new oil discoveries
- investment in new oil production and refining capacity
- future global demand and supply balances
- population growth
- longer term global economic growth and short term conditions
- costs of oil production and refining
- technological progress
- long term policies of NOCs and oil producing nations
- regulation and government policy.

International prices

The price of fuel in Australia is dependent on world market prices.

Crude oil, petrol, diesel and jet fuel are bought and sold in their own markets. Each market is regionally based. There are linkages and transactions between regional markets to balance global demand and supply.

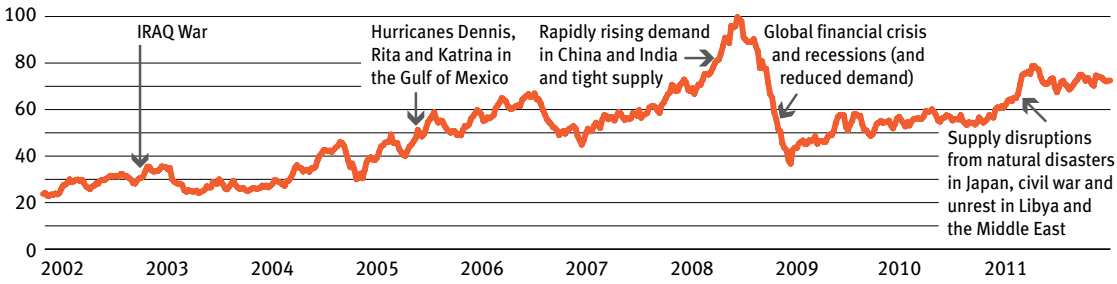
Prices in regional markets can be volatile and can move in different directions from each other. This can be due to the impact of factors and events unique to one market or all markets globally. Australia's regional market for petroleum products is the Asia–Pacific market.

Supplies of crude oil and petroleum product are sold internationally and domestically through a variety of term contract arrangements and in spot transactions. They are also traded on futures markets like NYMEX and ICE.

Price benchmarks or 'markers' for crude oil and petroleum products provide convenient indicators of what is happening with prices in specific markets. Information on changes in the prices of these markers is extensively reported on a daily basis.

Australia's benchmark prices—Tapis and Dated Brent crude oil, MOPS95 petrol and Gasoil 10 ppm sulphur for diesel—are quoted daily by independent monitoring agencies including Platts, based on transactions in the Singapore market on a given day.

Major events impacting on crude oil prices: TAPIS CRUDE OIL: CENTS PER LITRE



The steep increase in the crude oil price in 2007 and 2008 reflected the significant increase in global demand from economic growth in China and India, and global supply not keeping pace with this demand. The Global Financial Crisis subsequently led to demand destruction in many key markets and a significant fall in crude oil prices over 2008 and into 2009. Since then the recovery of demand growth together with supply disruptions from civil war and unrest in the Middle East (eg. Libya) and natural disasters (Japan) has contributed to higher market prices for crude oil over 2011.

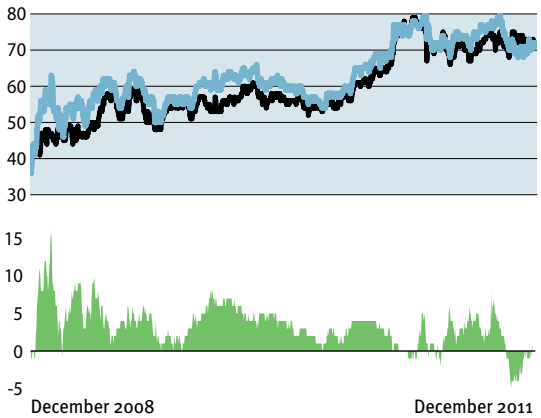
Price trends 2009–2011

These charts provide a snapshot of the movements over the period 2009–2011 in the key market prices relevant to the price of petrol in Australia.

- CRUDE OIL PRICE (TAPIS)
- SINGAPORE PETROL PRICE (MOPS95)
- MOPS95 PLUS SHIPPING AND TAXES
- AUSTRALIAN TERMINAL GATE PRICE (TGP)
- AUSTRALIAN PUMP PRICE
- GROSS MARGIN

The 'margin' shown in these charts is the difference between two market prices or benchmarks and is used to highlight trends within a specific market or market segment. It is a 'gross margin' and does not represent profits in the market nor take account of the range of relevant costs.

International market trends: 2009–2011
CENTS PER LITRE (A$)



The link between international and Australian prices

There is a close relationship between international fuel prices and Australian wholesale and retail fuel prices, as verified by the ACCC.

To meet Australian demand, around a quarter of fuel is imported, mostly from Singapore. Singapore is the regional refining, distribution and trading centre and among the world's largest.

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 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.

Australian refiners must price their fuel products to be competitive with fuel imports from Asia — called 'import parity' pricing.

If Australian fuel prices were below Singapore prices, Australian fuel suppliers would have no commercial incentive to import the fuel needed here because sales of that fuel would incur losses.

In addition, Australian refiners would have an incentive to export production.

As the Singapore benchmark prices for fuel are quoted in US$ per barrel terms, their price in Australian dollar terms also reflects movements in the US$/A$ exchange rate. This means that exchange rate movements can offset or magnify changes in Singapore fuel prices. The Singapore market price for fuel plus shipping costs, Australian taxes and the exchange rate — called the refined product cost — represents over 90 per cent of the retail price of fuel in Australia.

Overall market and fuel price transparency in Australia is assisted by data published by AIP and member companies. The ACCC also formally monitors fuel prices in Australia and publishes a report annually.

The Singapore to wholesale price lag

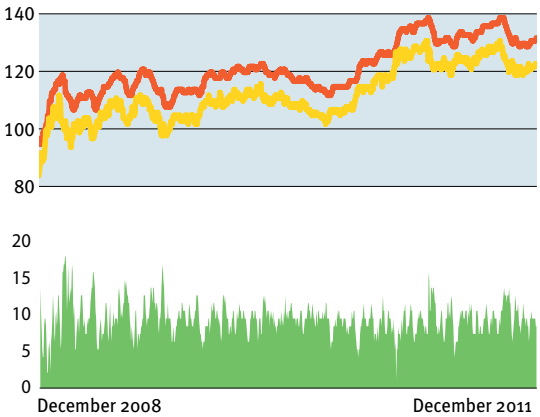
Generally there is a time lag of one to two weeks between changes in international (Singapore) prices and changes in Australian wholesale prices.

Importantly, this time lag occurs whether prices are going up (when the lag slows price rises to consumers) or prices are going down (when the lag delays price falls).

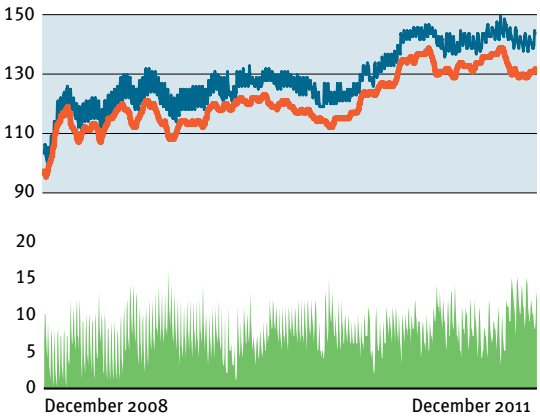
The lag is a result of using a rolling average of Singapore prices as part of the wholesale pricing methodologies of companies — very similar to that used by the ACCC when wholesale prices were government regulated. The pricing methodology is called import parity pricing or IPP.

According to the ACCC, this time lag can be longer during times of significant volatility in international prices.

Wholesale market trends: 2009–2011
CENTS PER LITRE (A$)



Retail market trends: 2009–2011
CENTS PER LITRE (A$)



Key messages

- Australian wholesale fuel prices are transparent and linked to international prices.
- Over 95 per cent of the wholesale fuel price is refined product cost plus government tax.
- There is significant wholesale market competition in Australia.
- There is competition for bulk fuel supply both 'into terminal' and 'ex-terminal' to wholesalers, resellers, retailers and other major fuel users.
- The underlying pricing approaches in bulk fuel contracts and TGP transactions are generally the same for all wholesale customers.
- Changing market shares and profitability of major fuel suppliers over time, including refiner-marketers and independent suppliers, demonstrates a competitive market.
- Independent fuel importers and wholesalers now own more import storage capacity for petrol than the major oil companies.
- Independent wholesalers accounted for around 40 per cent of total petrol imports in 2010–11, compared with less than 5 per cent in 2008–09 (ACCC).

Wholesale fuel prices

Australian wholesale fuel prices are closely linked to international prices through Import Parity Pricing (IPP).

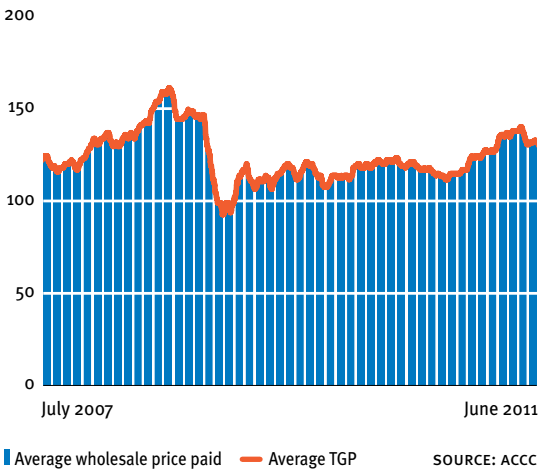
The IPP is the 'landed cost' of refined fuel to import terminals around Australia and includes:

- the refinery benchmark price for fuel (e.g. for petrol — MOPS95)
- the 'quality premium' for specific Australian fuel standards
- freight
- exchange rate
- wharfage, insurance and loss.

Terminal gate prices (TGPs or spot wholesale prices) typically include the IPP as well as 'wholesaling costs' to store and handle the fuel once it arrives in Australia and prior to its distribution to the domestic market. TGPs also include taxes (fuel excise and GST) and a small wholesale profit margin.

Wholesale price transparency in the Australian market is assisted by the regulated publication of TGPs for petrol and diesel by all AIP members. The ACCC has concluded that 'by virtue of its transparency and the fact that it represents a fuel-only charge, TGP is a useful benchmark for analysing wholesale prices'.

Average wholesale prices paid versus Average Terminal Gate Prices (TGP): 2007–08 to 2010–11 CENTS PER LITRE



ACCC analysis shows wholesale prices paid by customers vary slightly from TGP (averaging 0.3 cents over the last four years) due to charges for additional services included in the transaction (such as delivery, branding and price support) and any volume discounts applying to large orders.

According to the ACCC, in 2010–11 the wholesale sector net profit for petrol was 1.05 cents per litre and for diesel was 0.87 cents per litre.

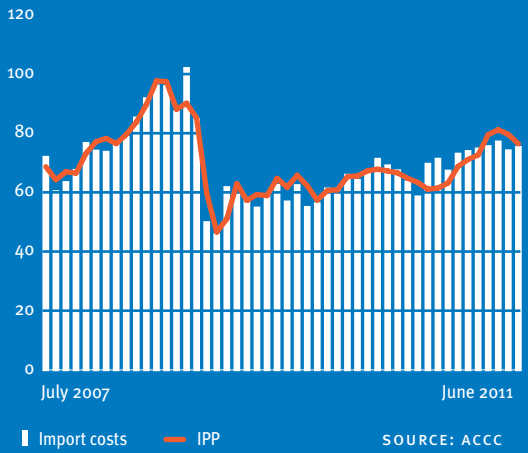
IPP

ACCC analysis shows that the actual import costs paid by major fuel suppliers are broadly similar to, and move in line with, IPP. Over the past four years the difference has averaged less than 1 cent per litre.

The ACCC considers that the use of IPP-based pricing in Australia is appropriate (if imports continue to be the marginal source of supply of refined fuel).

The use of IPP, including for sales between major fuel suppliers, provides clear benefits in terms of supply security and economic efficiency, and ensures Australia is not disadvantaged in accessing supplies of crude oil and products.

IPP versus import costs paid by wholesale fuel suppliers: 2007–08 to 2010–11 CENTS PER LITRE



Facts about bulk fuel terminals

Bulk fuel 'terminals' are large storage facilities from which fuel is distributed to wholesalers, retailers, distributors and large end-users. These may be import terminals, refinery terminals, marketing terminals or depots.

Terminals can be owned and/or operated by:

- refiner marketers (including joint ventures)
- independent fuel importers
- independent terminal operators.

Other parties may access terminals through:

- hosting arrangements to store and load product at the terminal for a market-based usage charge on a spot or long term basis
- leasing of storage capacity, typically long term agreements based on a commercial return on capital and operating costs.

For economic and cost efficiency reasons, oil companies and independents often buy bulk fuel from each other in markets where they do not own facilities or where they do not directly import through hosting arrangements.

Capacity and throughput are two key measures of terminal utilisation. Terminal 'capacity' relates to the number and size of tanks at the facility, which is influenced by land area, range of products handled and size of incoming deliveries. 'Throughput' provides a better guide to the quantity of fuel a terminal can handle over a given period as it also takes account of the manner in which products can be supplied to and loaded out from the terminal (eg pipeline, truck), seasonal demand factors, and terminal handling constraints.

The ACCC has concluded that there is considerable spare capacity in some independently owned import terminals around Australia, with more capacity becoming available in the future.

Import terminal ownership and hosting: 2011

Refiner marketers:	Sole ownership	40
	Joint venture	5
Independent		14
Total		**59**
Hosting available		34

SOURCE: ACCC

Petrol capacity and throughput: 2010–11

	Capacity (ML)	Throughput (ML)	Turnover (times)
Independently owned	399	1505	4
Refiner-marketer owned	293	3514	12
Australia	**692**	**5019**	**7**

SOURCE: ACCC

Fuel sales into and out of terminals

Contracts for sales of fuel 'into' terminals, whether from domestic or international sources, are based on Import Parity Pricing (IPP).

Sales of fuel 'from' terminals are negotiated on commercial terms mainly to contracted wholesale and retail customers, although spot purchases occur. Contracts are typically based on IPP while spot purchases are on the basis of TGP.

Terminal operators seek to recover the terminal's capital and operating costs including taxes and other charges. Discounts or premiums may apply to customers depending on the volume, contract term, and any branding or marketing support provided.

Import infrastructure adequacy and competition issues

As Australia's demand for fuel grows, ongoing investment in bulk fuel terminals becomes more important in ensuring supply security. Major independent and government reviews of Australia's petroleum import infrastructure and investment have concluded that:

- significant industry investment in new or expanded facilities has been occurring and more is under construction or planned
- there is significant spare capacity to meet future demand and import growth for fuels
- there are a range of economic options in Asia to efficiently import fuel meeting Australian quality standards
- current terminal operations and access arrangements do not impose a constraint to import competition nor to investment.

This investment environment will ensure ongoing fuel supply security and competitive fuel prices to consumers and major fuel users.

There is no regulated access for third parties to bulk fuel terminals and distribution infrastructure as significant spare capacity exists in the market. Access is readily available on commercial terms (through leasing, hosting and usage charges). Applying access regulation to this privately owned infrastructure would seriously reduce incentives to invest in new infrastructure, and would increase the costs of fuel supply to business and consumers. Australia's future supply security would be impacted because more investment in terminals is needed to meet future demand and importing capability.

AIP supports reforms to ensure that planning, approval and regulatory processes are efficient, timely and nationally consistent, to support longer term investment in import and storage facilities.

Key messages

- The retail fuel market is highly dynamic and competitive.
- Australian retail fuel prices are closely linked to international prices.
- Australia has among the lowest retail fuel prices in the OECD, providing the domestic economy with a competitive advantage.
- A majority of consumers utilise the retail petrol price cycle in capital cities to purchase heavily discounted fuel; ACCC analysis shows retail price movements around public holidays are similar to those at other times.
- Prices can vary greatly between regional towns due to their differing competitive and economic characteristics.
- Oil company profits are a very small proportion of the retail price (profit over the past decade has averaged 1.8 cents per litre of fuel sold).
- Major supermarkets and independent operators have the majority share of the Australian retail fuels market.
- Larger volume retail sites with convenience stores now dominate the retail market.

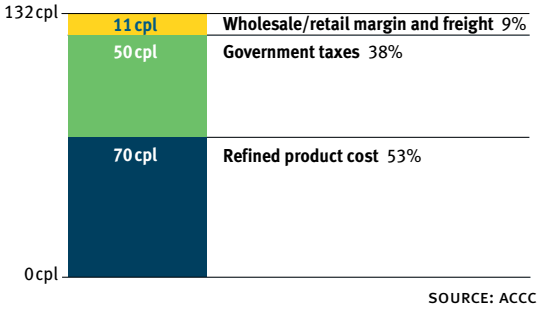
Prices and taxes

In 2010 and 2011 Australia continued to have among the lowest retail petrol and diesel prices in the OECD. The ACCC considers that Australian retail fuel prices are highly competitive. Retail fuel prices apply to almost half of the fuel sold in Australia. The remainder of sales are under competitive tenders to commercial, industrial and agricultural buyers.

The components of the national average retail petrol price highlight the small proportion of the final price received by fuel wholesalers and retailers. In 2010–11, the tax component (GST and fuel excise) of the final price of petrol averaged about 38 per cent or 50 cents per litre.

According to the ACCC, 'petrol industry costs are dominated by refined international benchmark prices and taxes'.

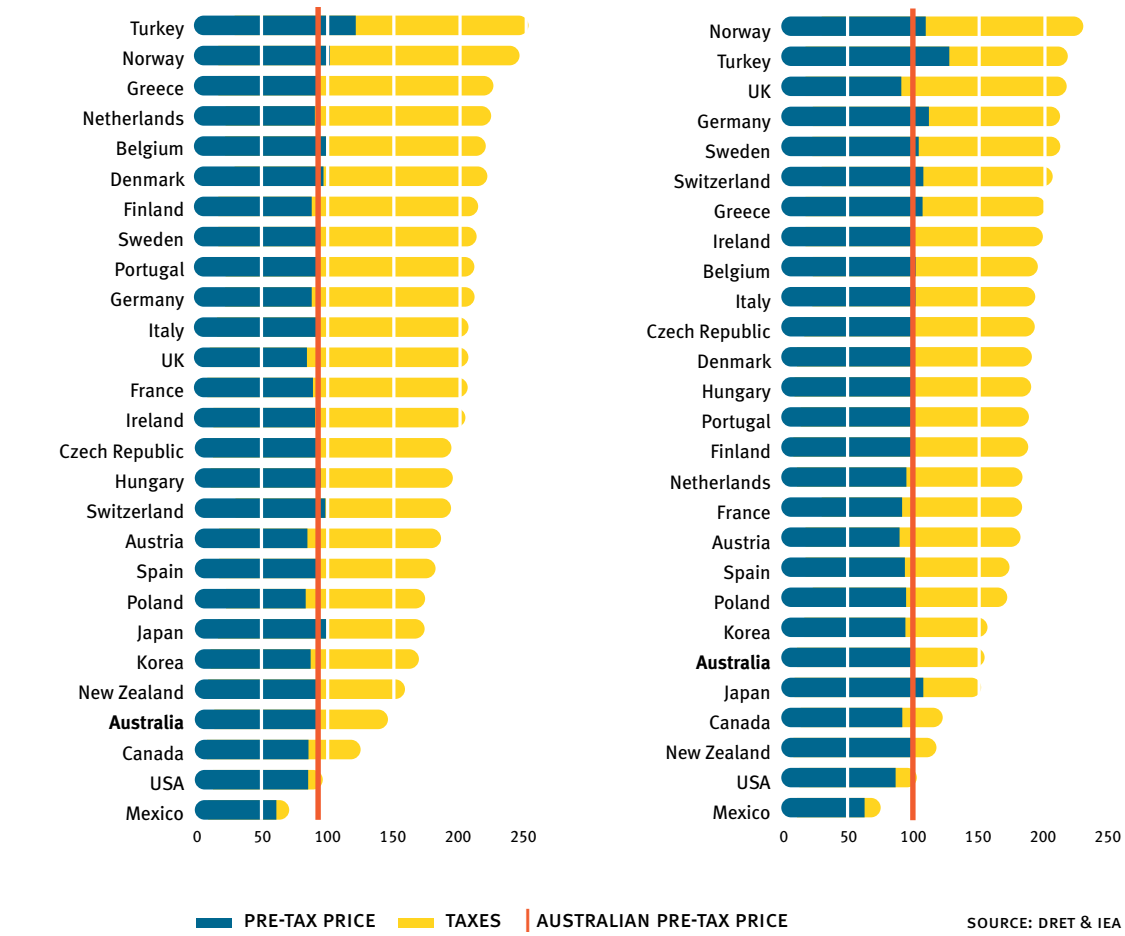
Retail petrol price components: NATIONAL AVERAGE 2010–11



SOURCE: ACCC

Payments to the Australian Government in 2010 (from fuel excise, GST on fuels and income tax) by AIP member companies were over $19 billion. Fuel excise (over $14 billion) provided around 5 per cent of taxation revenue to the Australian Government in 2010.

Petrol and diesel prices and taxes in OECD countries: JUNE QUARTER 2011



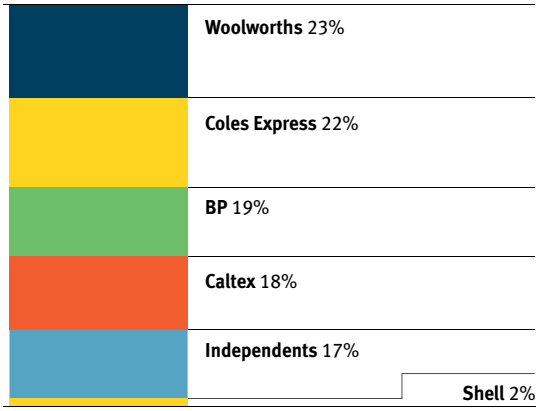
SOURCE: DRET & IEA

The retail market

Retail market share

The supermarket alliances and independents account for around two-thirds of the retail petrol market.

Petrol volume sold by brand: 2010–11

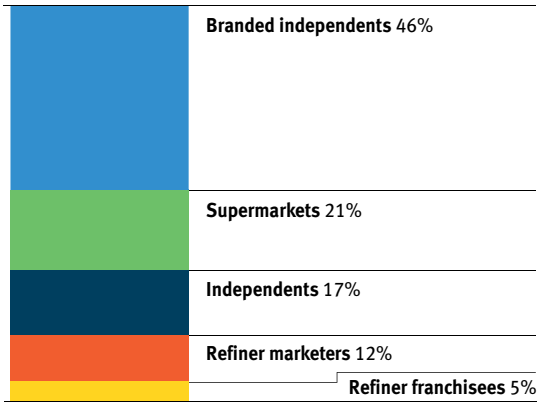


SOURCE: ACCC

The retail business and operators

The structure of the retail market continues to evolve. The number of retail sites has decreased from 20,000 sites in 1970 to around 6300 in 2011. The ACCC has concluded that consolidation of retail sites has slowed significantly over the past few years. Most sites now sell larger volumes of fuel and rely more on convenience store sales. The major oil companies (BP, Caltex, Mobil and Shell) now directly operate and set the prices at only 12 per cent of retail sites across Australia, noting that Mobil sold its service stations to 7-Eleven in 2010.

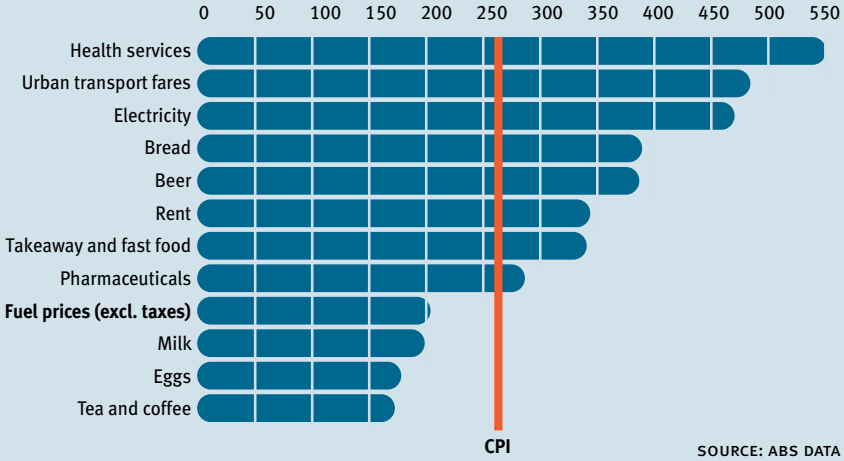
Who sets retail prices: 2010–11



SOURCE: ACCC

Relative changes in retail prices

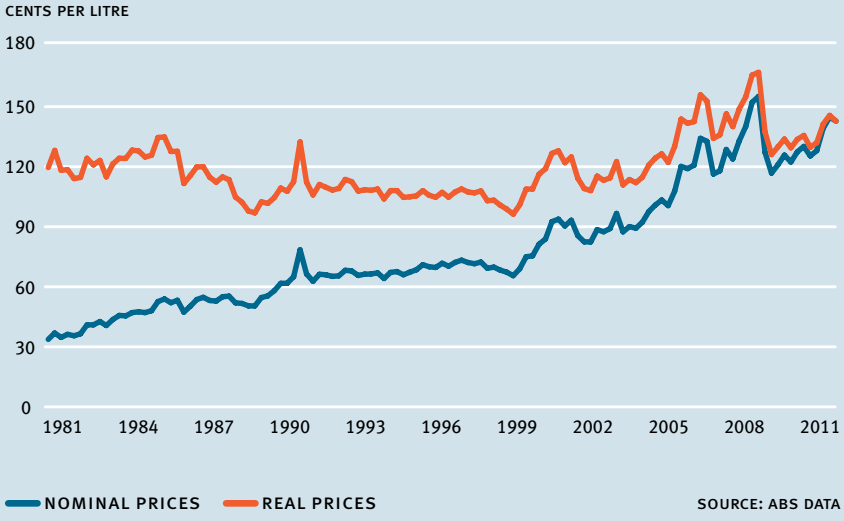
Percentage change in retail prices: 1981–2011



SOURCE: ABS DATA

Since 1981, the increase in retail fuel prices paid by consumers (when fuel taxes are excluded) has been less than the increase in the CPI and less than price increases for other significant household consumables and services.

Retail fuel prices over the last 30 years



SOURCE: ABS DATA

Key messages

- Climate change presents a significant risk to the environment, and therefore to the economy and society. AIP member companies support actions to advance climate science to improve understanding and reduce the risks from future impacts.
- A broad-based national approach to GHG emissions abatement has been introduced through the Clean Energy legislation. Pathways to reduce emissions from use of liquid fuels include improved energy efficiency, development and deployment of innovative technologies, enhanced public awareness.
- Policy decisions must be based on sound scientific and economic analyses that recognise the risks, costs and benefits to society and the economy, as well as to the downstream petroleum industry.
- The future viability of Australian refineries, and Australia's energy security, will be dependent on maintaining the international competitiveness of Australian refined products.

The Clean Energy Future Plan

The Australian Government's Clean Energy Future (CEF) Plan establishes the framework for a greenhouse gas (GHG) emissions trading scheme (ETS), with a fixed carbon price for the first three years before transitioning to a full ETS. The CEF Plan covers the four main greenhouse gases, primarily within the stationary energy and industrial sectors, and will account for around 60 per cent of Australia's total GHG emissions. Petroleum refineries are subject to the ETS but transport fuel use is treated separately.

AIP member companies have worked closely with the Australian Government on the downstream petroleum sector aspects of the CEF Plan. A key consideration has been the ongoing competitiveness and viability of Australian refineries and Australia's future fuel supply security.

Impact of carbon prices on refineries

The introduction of the Clean Energy legislation will increase direct and indirect petroleum refining costs in Australia. Australian petroleum refineries are energy intensive operations and will incur greenhouse gas emissions liabilities from mid-2012. To help maintain Australian refinery competitiveness, emissions permits will be allocated to meet these liabilities (94.5 per cent of industry average baseline emissions in year one) through the Jobs and Competitiveness Program (JCP), although these allocations will decline (1.3 per cent per year) over time.

Since almost all liquid fuel imported into Australia comes from countries which are unlikely to impose a carbon price on their refinery operations over the next decade, Australian refiners will be placed at an increasing commercial disadvantage to their overseas competitors. Import parity pricing of liquid fuels in Australia means that these additional costs cannot be recovered from consumers, hence industry profits will decline.

The Clean Energy legislation requires the JCP to be reviewed by the Productivity Commission in 2014–15 to determine whether the JCP allocations should be held at 90 per cent of particular industry emissions or whether this proportion should continue to decline when the operations of overseas competitors become subject to carbon emissions costs.

Impact on fuels market

The challenges of including emissions from the combustion of liquid fuels in an ETS have also been significant. Key design features of the Clean Energy legislation will ensure:

- designated business use of liquid fuels will be subject to a carbon price through regular adjustments to the fuel excise rebate scheme
- large liquid fuel users will be able to opt-in to the ETS
- the carbon price applying to liquid fuels will be transparent to relevant consumers
- all liquid fuels entering the Australian market will be subject to the legislation, whether produced locally or imported.

Impact of carbon prices on fuel users

The Clean Energy Future Plan adopts a mix of measures to encourage abatement of greenhouse gas emissions from the use of liquid fuels:

- fuel used in smaller vehicles (less than 4.5 tonnes) will not be subject to a direct carbon price but new vehicles will be required to meet increasingly tighter carbon emission standards
- fuel used in large on-road vehicles is intended to be subject from 2014 to a carbon price applied through regular adjustments to the fuel excise rebate scheme
- fuel used in off-road vehicles, aviation, marine and rail transport will be subject from July 2012 to a carbon price applied through regular adjustments to the fuel excise rebate scheme, but the use of liquid fuels in agriculture, forestry and fisheries will be exempt from the carbon price
- biofuels and renewable fuels will be exempt from the carbon price.

Additional policies in the Clean Energy Future Plan provide for:

- research and innovation funding to be available to support the development of cleaner fuels and alternative fuel vehicles
- driver education programs and incentives to encourage more efficient use of vehicles
- improved public transport as an alternative to private motor vehicle use.

As new measures are introduced, full consideration will need to be given to assessing the benefits and costs of the measures to ensure that climate change benefits will be realised across the full fuel lifecycle, and that all other non-climate-change costs and benefits are identified.

All stakeholders will need to be assured that there are overall net national benefits from adopting additional measures and that the measures do not undermine the effects of the Clean Energy legislation.

Key messages

- AIP and its member companies are committed to safe and environmentally sound practice in their operations. AIP member companies in Australia share the general community concern for conservation of the environment, and seek to protect air, water and soil from contamination through their operations. In doing so, their aim is to:
  - treat with care all materials that may cause pollution
  - achieve a zero accident rate
  - maintain open communications with governments and local communities
  - support market mechanisms for conservation and wise use of our valuable energy resources.
- Some of the programs contributing to these objectives are the AMOSC oil spill response centre, the CRC CARE research program, the petroleum industry Health Watch program, and the lubricants waste management and recycling program.

Health Watch

For over 30 years AIP has sponsored the development and operation of an epidemiological study called Health Watch which tracks the health of over 19 000 present and past employees of the Australian petroleum industry.

The information from Health Watch is important in identifying factors within the industry that may be a risk to the health of the industry workforce and ways in which these risks may be addressed. Health Watch is an independent university-based research program, currently conducted by the Monash Centre for Occupational and Environmental Health, a leading international centre for epidemiological research at Monash University.

Health Watch is highly valued by petroleum companies and their employees and is an internationally respected study. In 2010 the Health Watch study was expanded to provide new employees in participating company worksites across Australia the opportunity to join the study.

The findings of the study are published in regular Health Watch reports. The reports have clearly and consistently shown that petroleum industry employees represented in Health Watch have better health than the general community.

For more information see:
www.aip.com.au/health/ohs.htm

CRC CARE

AIP is a foundation participant of the Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) which undertakes innovative, cutting edge research aimed at preventing, assessing and remediating contamination of soil, water and air. CRC CARE is delivering research outcomes that underpin policy development work, numerous technology patents and techniques, and extensive academic and industry training.

AIP projects involve collaboration with environmental regulators to develop best practice, risk based approaches to remediation of soil and groundwater contaminated by hydrocarbons. Work is also underway to help harmonise the regulation of remediation activities across all Australian jurisdictions. It is expected that these efforts will lead to better results for Australian communities and least cost solutions for business.

Waste management and recycling

Lubricants are not completely consumed in use and result in waste oil that needs to be collected and recycled. AIP members have adopted a product stewardship role for their products and are actively supporting the collection and recycling of waste oil and its packaging.

The Australian Government has introduced a product stewardship scheme for waste oil to support recycling, funded through an excise on sales of lubricants. AIP is also a signatory to the Australian Packaging Covenant. AIP on behalf of its member companies has established a collection and recycling program for used plastic oil containers across Australia. In 2011, over 380 collection sites were maintained by VIP Packaging for AIP, with around 290 tonnes of plastic being recycled into various industrial products.

AIP MONASH University Health Watch

CRC CARE

AMOSC Australian Marine Oil Spill Centre Pty Ltd

Oil spill response

Each of the companies involved in petroleum exploration and production, and in refining and distribution of petroleum products, has major programs in place to minimise the risk of a marine oil spill. Company personnel are also trained to respond to any oil spill so as to minimise any environmental impact. These company specific petroleum industry activities are supported and supplemented by the Australian Marine Oil Spill Centre (AMOSC), a wholly owned subsidiary of AIP set up in 1991. AMOSC is based at Geelong, Victoria.

AMOSC's primary roles are to:

- provide equipment and personnel on a 24-hour basis to support a major oil spill response
- maintain the petroleum industry stockpiles of equipment for use in a response to a major oil spill
- coordinate Australian petroleum industry mutual aid arrangements for oil spill response
- train, accredit and maintain a substantial group of spill response personnel.

AMOSC also provides a range of ancillary services and advice to the petroleum and shipping industries, and to governments in Australia and in the South Pacific region on:

- oil spill response plans
- selection and management of oil spill response equipment, including short term equipment hire
- operational and strategic advice on oil spill response matters
- access to international oil spill response providers and petroleum industry spill response networks.

AMOSC forms a key part of the petroleum industry's commitment to support Australia's national oil spill response arrangements, as set out in Australia's National Plan to Combat Pollution of the Sea, in petroleum industry obligations under the Environment Protection and Biodiversity Conservation legislation, and in requirements imposed on the petroleum industry by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

AMOSC resources and services are also made available to Australian governments, through a memorandum of understanding with the Australian Maritime Safety Authority (AMSA), to support responses to oil spills from general shipping and other sources.

AMOSC has provided substantial support to all major oil spill responses in the Australasian region for many years, including the Montara oil spill off the northwest of WA, the Pacific Adventurer and Shen Neng oil spills off Queensland, the Pasha Bulker incident at Newcastle, and the Rena oil spill in New Zealand.

Fuel for Aboriginal communities

Petrol sniffing continues to be a major concern in remote Aboriginal communities.

Since 2005 Opal petrol has been supplied to remote communities and the regions surrounding those communities. This fuel is produced by BP and is the first of its kind in the market place, containing low levels of aromatics. The fuel is available from all suppliers to the communities under the Australian Government Petrol Sniffing Prevention Program.

AIP member companies continue to work closely with federal, state and territory governments to help tackle petrol sniffing in Indigenous communities.

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