

# Downstream Petroleum 2011



**AIP**

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 (AMOSOC) 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.



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### ***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

## 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.

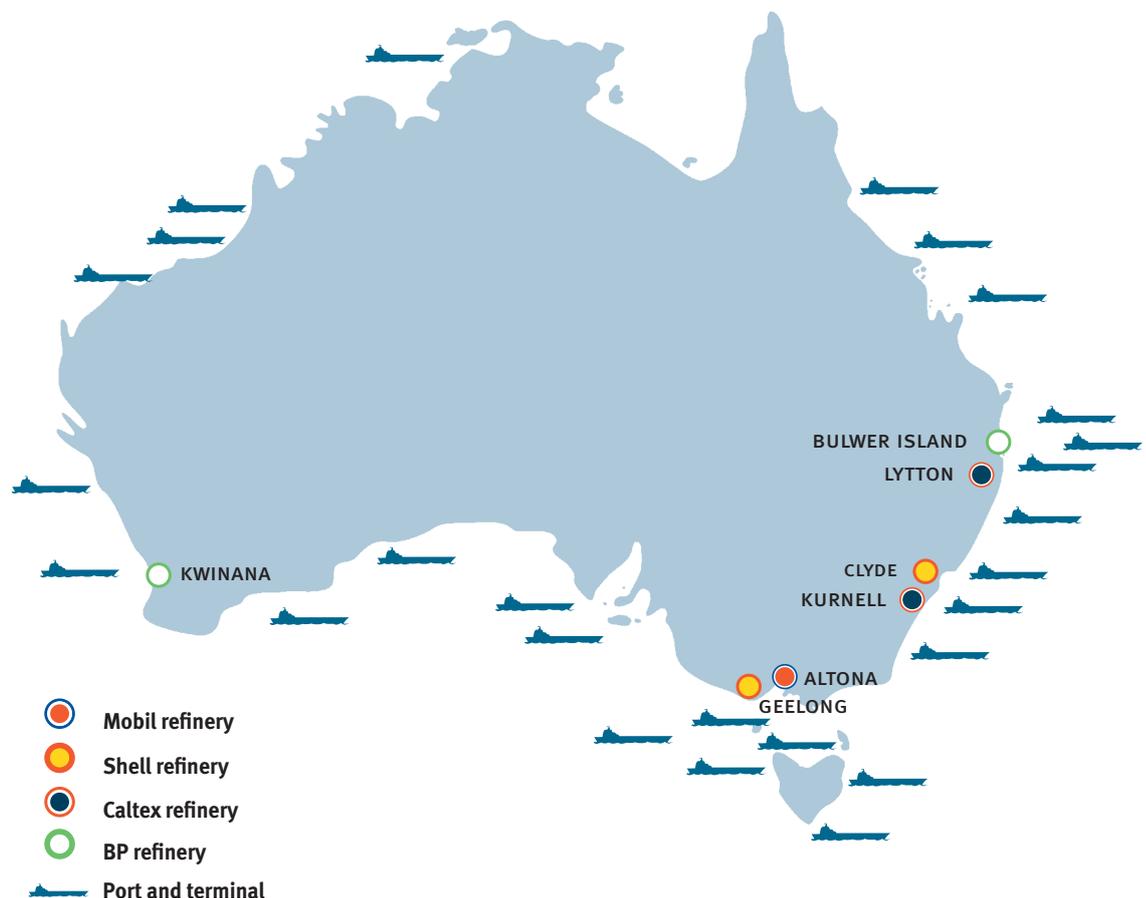
The Australian oil refining industry produces a range of petroleum products comprising:

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

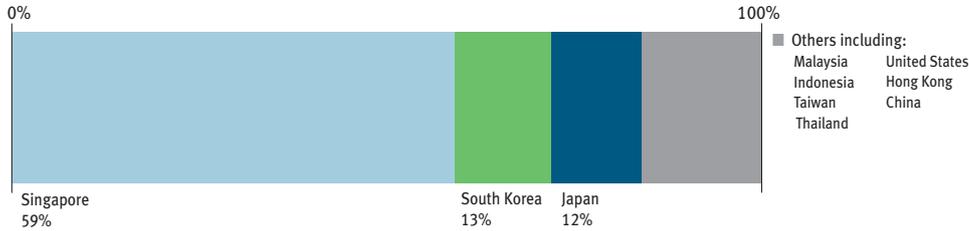
It also produces a substantial volume of chemical feedstock.

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.

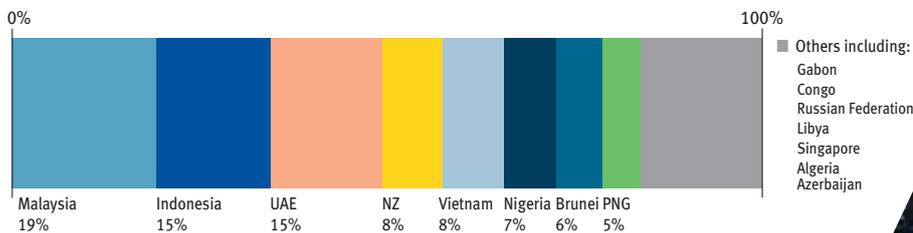
While Australia has substantial crude oil production, around 70 per cent of this oil was exported in 2010–11. Crude oils required to meet the product demand mix in Australia were imported by domestic refineries mainly from Asia (63 per cent), the Middle East (19 per cent) and Africa (14 per cent).



## 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
<b>Total</b>	<b>45 430</b>

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.



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.

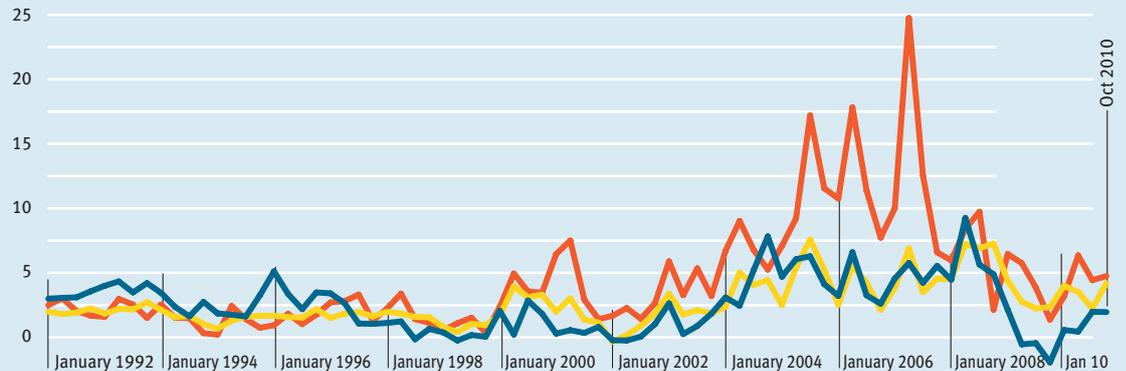
International forecasters such as the International Energy Agency (IEA) and FACTS Global Energy expect that refiner margins will remain under significant pressure for an extended period. For Asian refiners, margins for simple skimming refineries are forecast to be negative out to 2020. Margins for more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

WORLD REFINING MARGINS 1992–2010

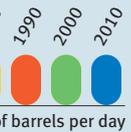
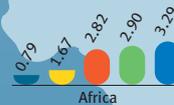
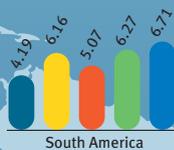
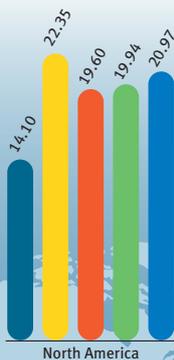
US\$ per barrel:

- SINGAPORE DUBAI HYDROCRACKING
- USGC WEST TEXAS SOUR COKING
- NWE BRENT CRACKING

SOURCE: BP STATISTICAL REVIEW OF WORLD ENERGY, JUNE 2011



## World refining capacity



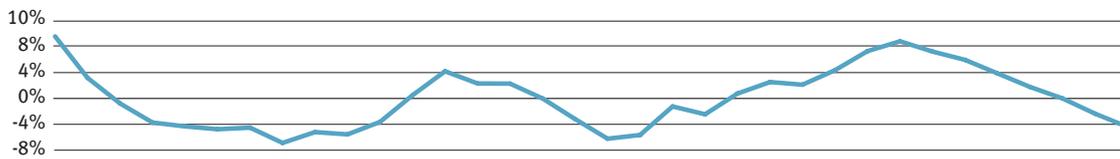
millions of barrels per day

SOURCES:

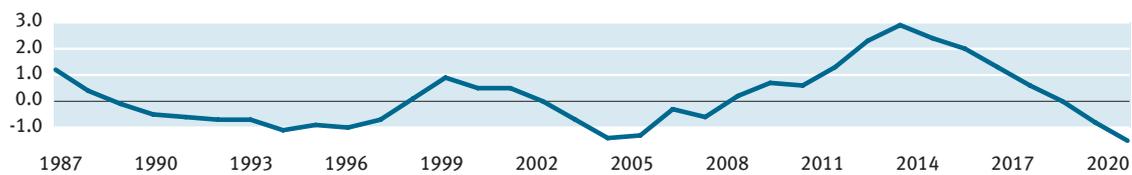
- BP STATISTICAL REVIEW OF WORLD ENERGY, JUNE 2011
- OIL & GAS JOURNAL

## 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.

## 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.

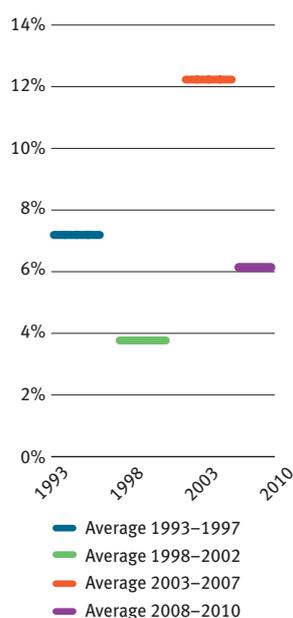
The GFC led to more volatile returns in the industry with an underlying return of 1.2 per cent in 2008 as

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.

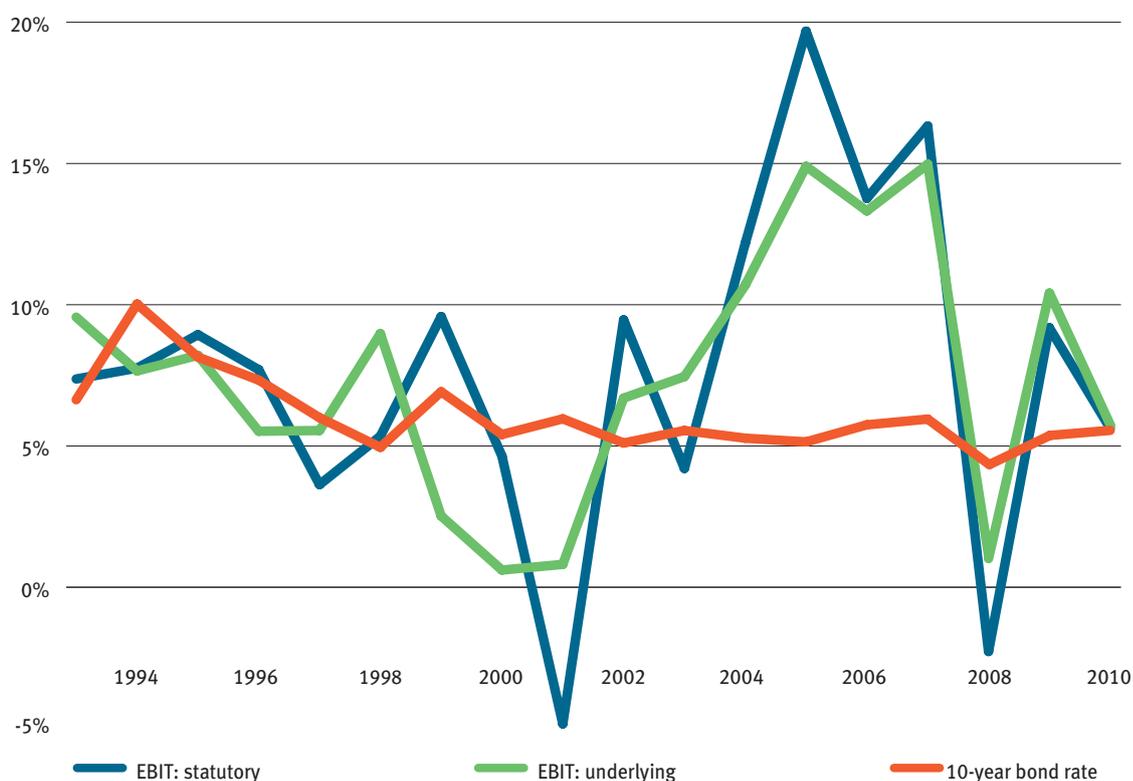
Increased regional refinery utilisation in 2010, a strong Australian dollar and slower demand growth caused returns to decrease to 5.6 per cent. The average returns over the period 2008–10 were 6 per cent compared to a ten year bond rate of around 5 per cent.

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.

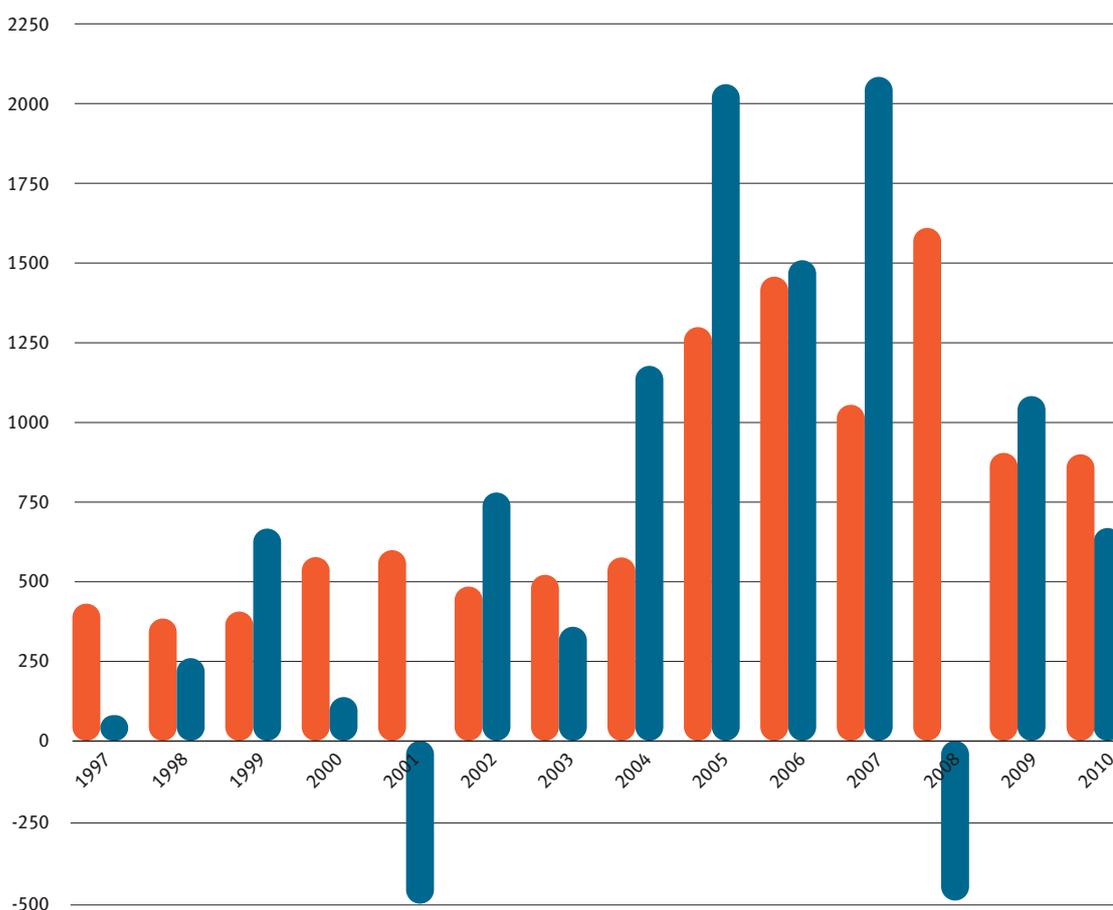
In 2009 and 2010 the industry invested \$900 million each year despite the significant decline in profits since 2008 and the lacklustre outlook for future profits. These investment levels were below the investment levels in 2005–08, which were associated with plant and equipment to implement the major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

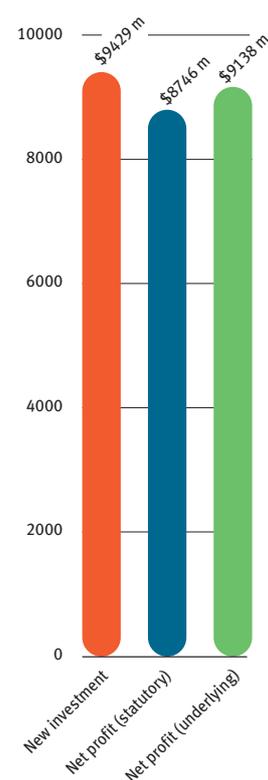
Against this background, any additional investment in Australian refineries that is driven by government regulation, such as fuel standards, will be exceedingly challenging. It must be noted that the major investments needed to implement the Cleaner Fuels Program were undertaken during a period of much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

### Investment and profits: \$ MILLION

Investments Profits



### 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.

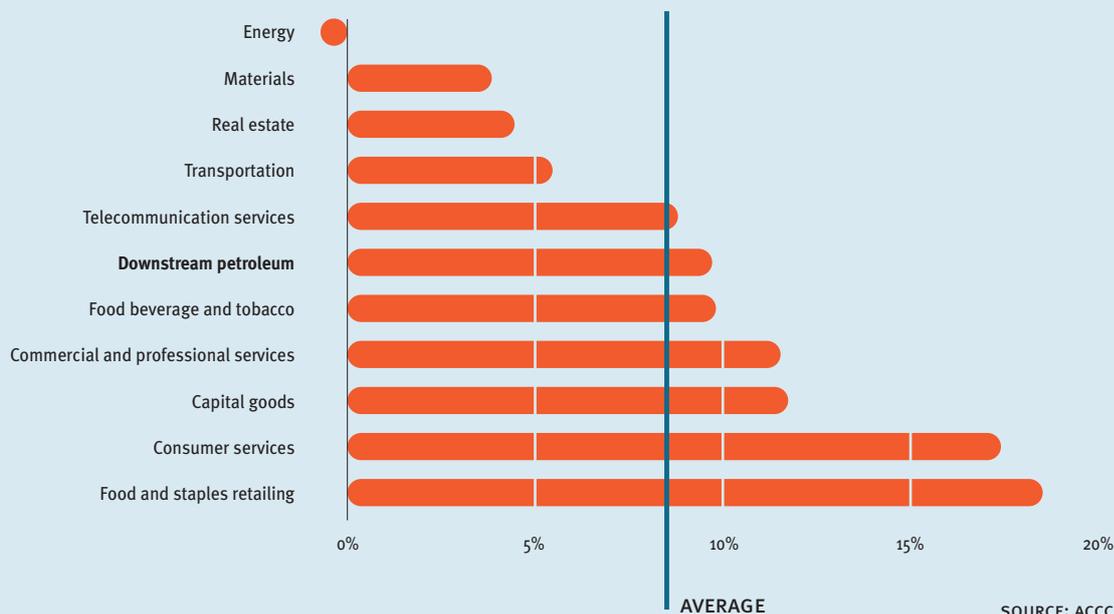
The ACCC noted that the Australian downstream petroleum industry return on assets was less than 10 per cent. This was comparable to returns in the food and beverage sectors. In comparison, returns in the food and staples retailing sector were over 18 per cent.

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



## 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.



## 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<sub>2</sub> 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

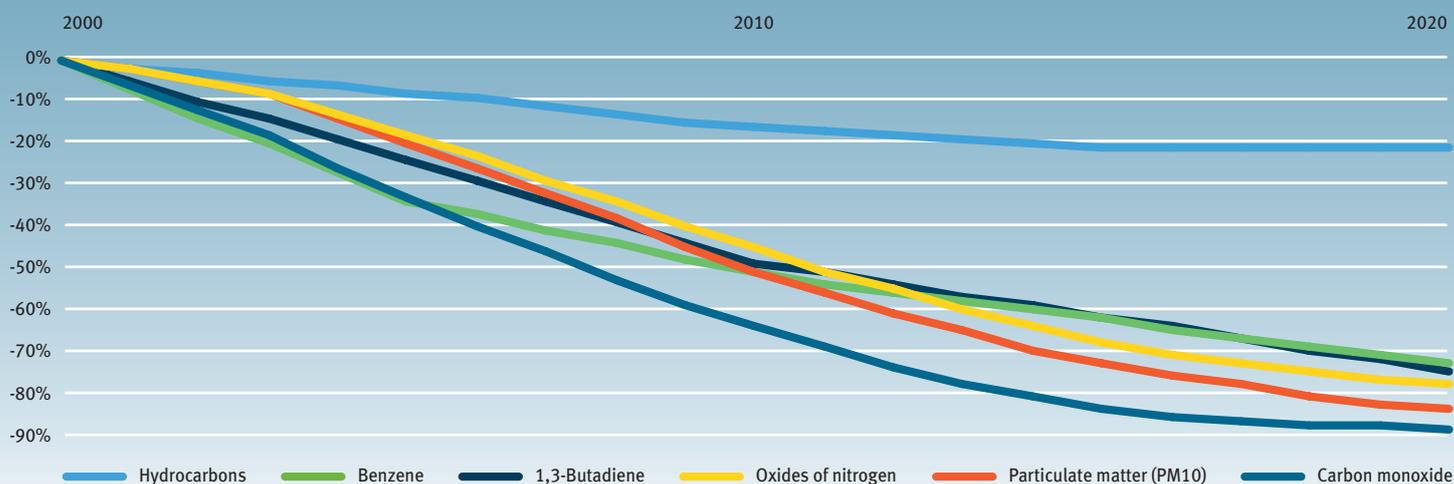
address virtually all national air quality issues that can be controlled by regulating fuel quality.

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.

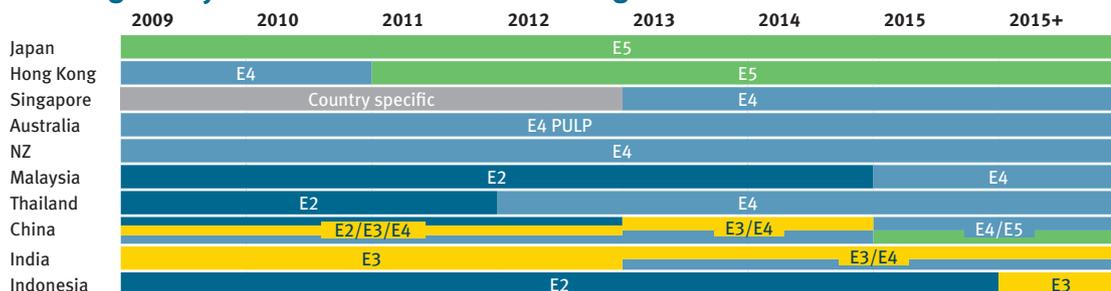
All prospective major gasoline vehicle technologies, except for lean burn gasoline direct injection (GDI) can operate on fuels already available in the Australian market. Some lean burn GDI engines require 10 ppm sulfur (Euro 5) PULP to operate. However, this technology is only used in the very small, 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

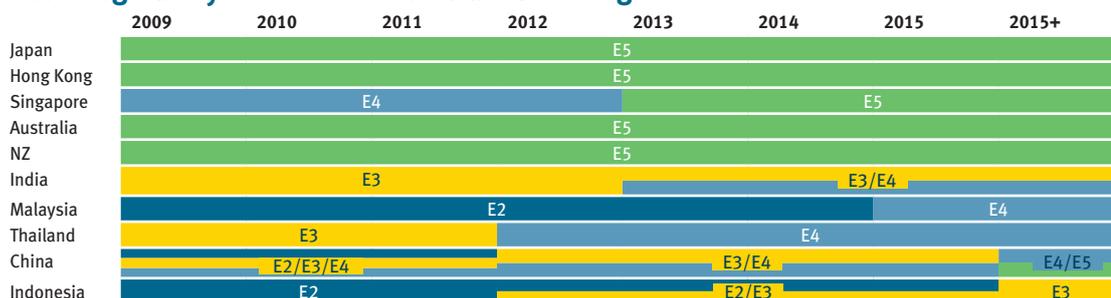


## Petrol regulatory outlook for the Asia-Pacific region



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.

## Diesel regulatory outlook for the Asia-Pacific region



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.

## 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.

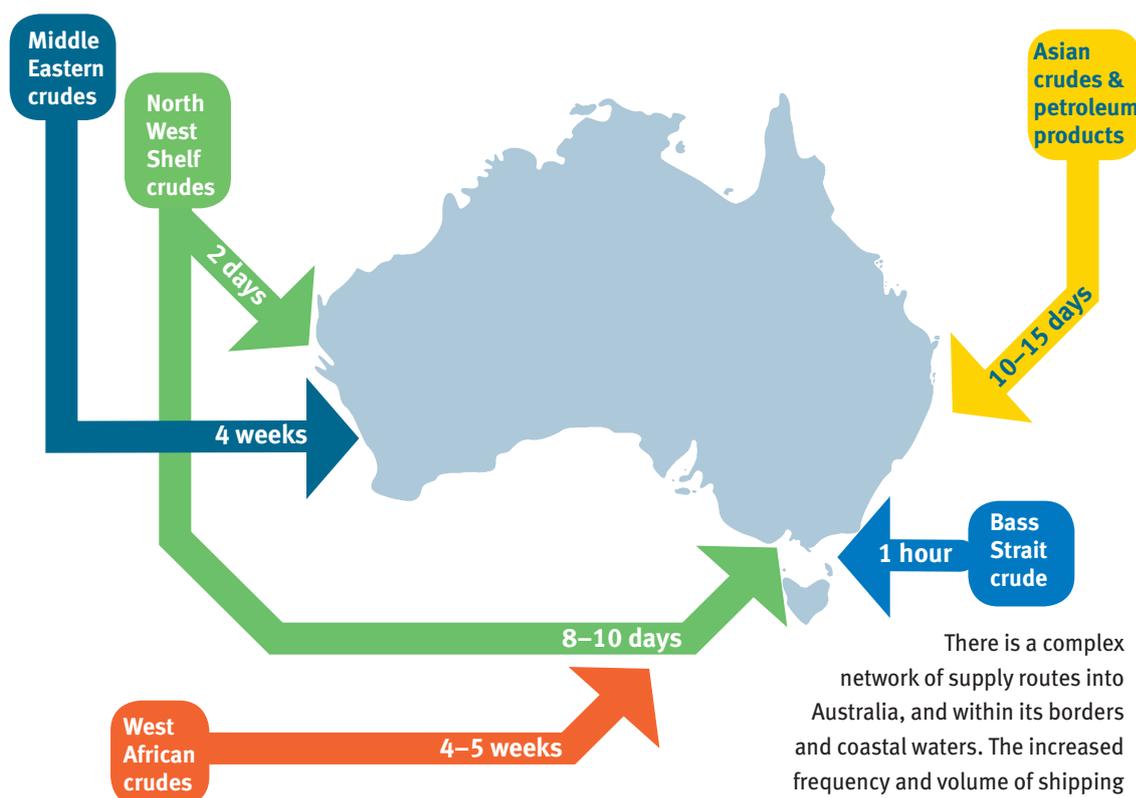
This assessment is confirmed in government and independent reviews of liquid fuel supply security released in 2011 including the National Energy Security Assessment (NESA) and the ACIL Tasman Liquid Fuel Vulnerability Assessment.

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.

## 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.

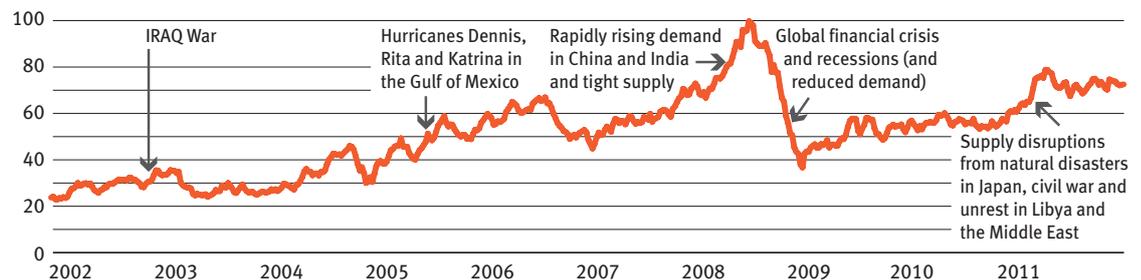
Supplies of crude oil and petroleum product are sold internationally and domestically through

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.

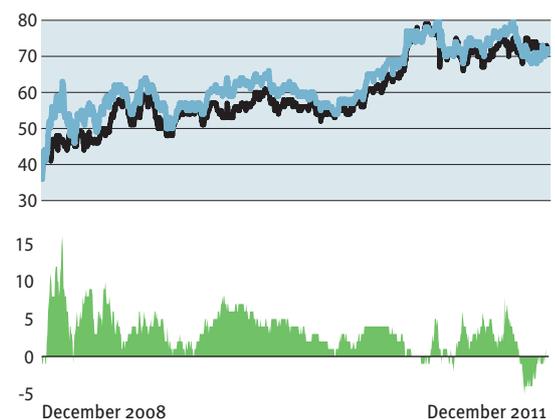
## Price trends 2009–2011

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.



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.

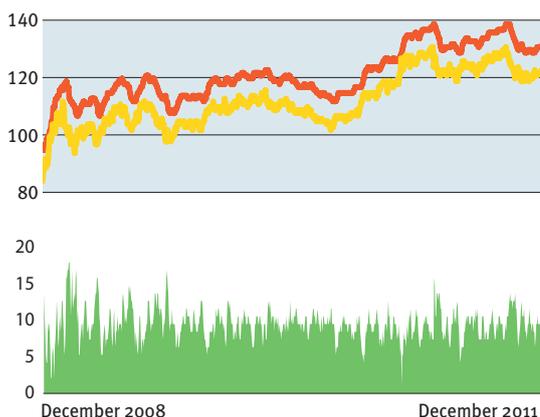
Importantly, this time lag occurs whether prices are going up (when the lag slows price rises to consumers) or prices are going down (when the lag delays price falls).

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'.

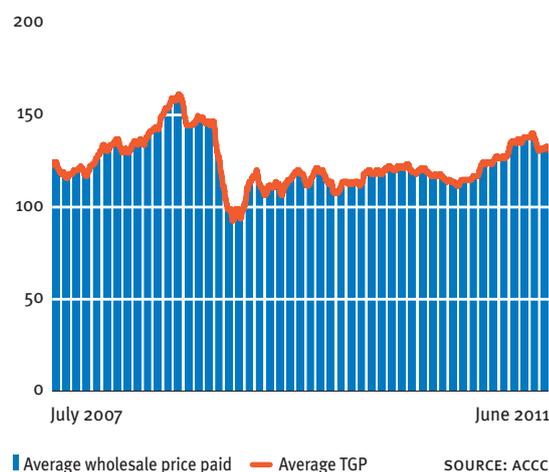
## IPP

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.

## 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 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
<b>Total</b>		<b>59</b>
<i>Hosting available</i>		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
<b>Australia</b>	<b>692</b>	<b>5019</b>	<b>7</b>

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.

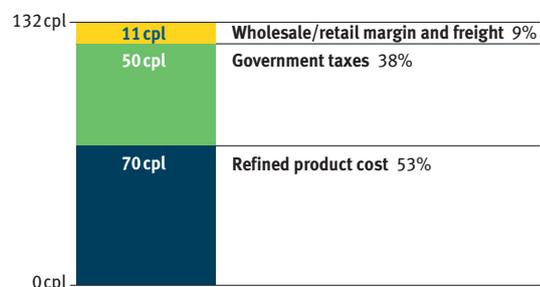
## Prices and taxes

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

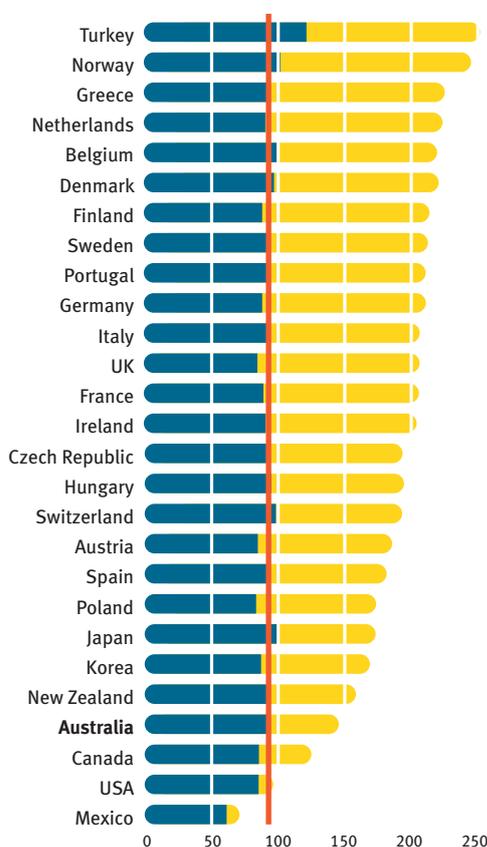


SOURCE: ACCC

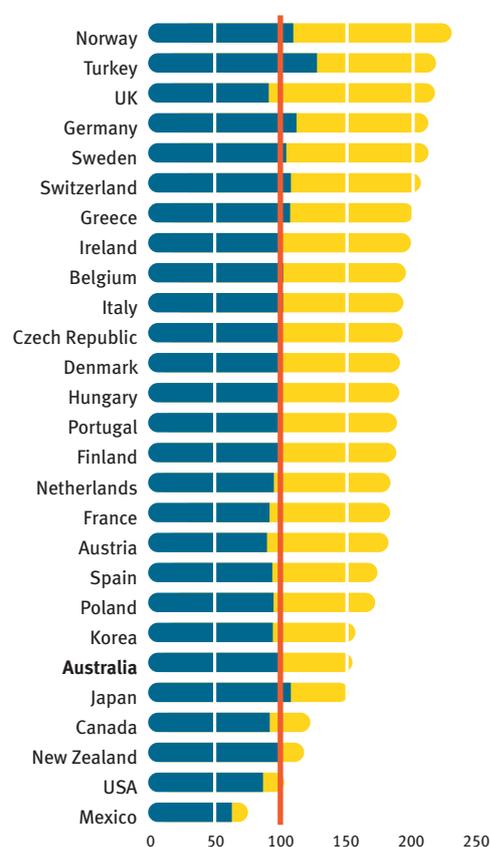
Payments to the Australian Government in 2010 (from fuel excise, GST on fuels and income tax) by AIP member companies were over \$19 billion. Fuel excise (over \$14 billion) provided around 5 per cent of taxation revenue to the Australian Government in 2010.

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

PETROL: CENTS PER LITRE



DIESEL: CENTS PER LITRE



PRE-TAX PRICE TAXES AUSTRALIAN PRE-TAX PRICE

SOURCE: DRET & IEA

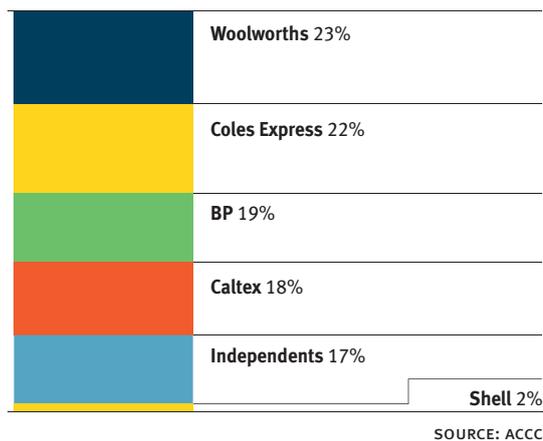


## The retail market

### Retail market share

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

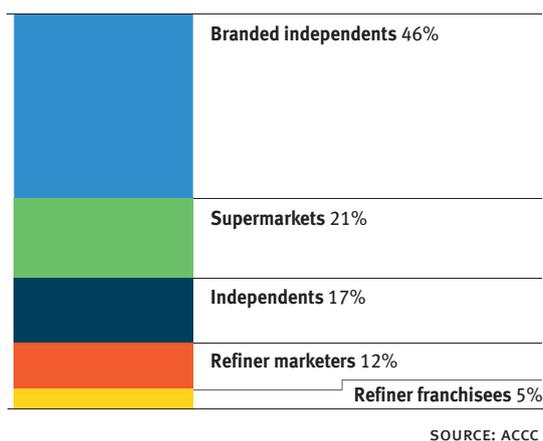
### Petrol volume sold by brand: 2010–11



### The retail business and operators

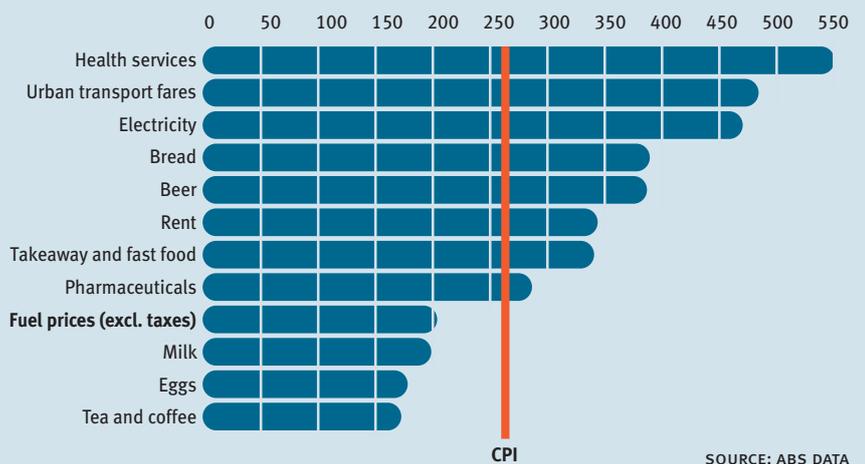
The structure of the retail market continues to evolve. The number of retail sites has decreased from 20,000 sites in 1970 to around 6300 in 2011. The ACCC has concluded that consolidation of retail sites has slowed significantly over the past few years. Most sites now sell larger volumes of fuel and 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



## Relative changes in retail prices

### Percentage change in retail prices: 1981–2011



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



## 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.

## 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.

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](http://www.aip.com.au/health/ohs.htm)

## 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.



## 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 (AMOSOC), a wholly owned subsidiary of AIP set up in 1991. AMOSOC is based at Geelong, Victoria.

AMOSOC'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.

AMOSOC 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.

AMOSOC 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).

AMOSOC 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.

AMOSOC 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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