

# Downstream Petroleum 2003

LANE  
**ONE  
FORM**



**Shell**



**CALTEX**

**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 world-wide 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 produces industry codes of conduct for the safe use of fuel at all stages of its storage, handling and use. AIP also runs the Australian Marine Oil Spill Centre (AMOSC) in Geelong that develops preventative strategies for oil spills 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

ALCAN GOVE PTY LTD

APACHE ENERGY LIMITED

ASP SHIPPING MANAGEMENT PTY LTD

AUSTRALASIAN RESOURCE CONSULTANTS PTY LTD

AUSTRALIAN MARITIME SYSTEMS LTD

BHP BILLITON PETROLEUM

CHEVRON TEXACO AUSTRALIA PTY LTD

CLAYTON UTZ

CONOCOPHILLIPS

COOGEE RESOURCES PTY LTD

CSIRO PETROLEUM RESOURCES

ELGAS LIMITED

ENI AUSTRALIA

ETHYL ASIA PACIFIC COMPANY

FUEL DOCTORS AUSTRALIA PTY LTD

FUELQUIP PTY LTD

GETRONICS AUSTRALIA PTY LTD

ICD (ASIA PACIFIC) PTY LTD

INFORMED SOURCES (AUSTRALIA) PTY LTD

JOINT FUELS & LUBRICANTS AGENCY (DEPARTMENT OF DEFENCE)

MANILDRA GROUP

MECRUS PTY LTD

NEXEN PETROLEUM AUSTRALIA PTY LTD

NYNAS (AUSTRALIA) PTY LTD

OMV AUSTRALIA PTY LTD

ORIGIN ENERGY RESOURCES LIMITED

PACIFIC ISLANDS FORUM SECRETARIAT

PAPUAN OIL SEARCH LIMITED

QENOS PTY LTD

QUEENSLAND FIRE & RESCUE AUTHORITY

ROC OIL COMPANY LIMITED

SANTOS LIMITED

SASOL CHEVRON

TAP (SHELFAL) PTY LTD

TEEKAY SHIPPING (AUSTRALIA) PTY LTD

TERMINALS WEST PTY LTD

VALVOLINE (AUSTRALIA) PTY LTD

WOODSIDE ENERGY LTD

WOOLWORTHS LTD



The Australian downstream petroleum industry is undergoing significant change. Local refineries continue to experience strong competition from low-cost producers in the Asia-Pacific region, and the recent mothballing of the Port Stanvac refinery in Adelaide shows the impact of this competition. With these changes, the Australian petroleum market, which for over a decade had quite significant over-capacity, has now cemented its position as a structural importer.

The retail sector is undergoing a rapid transformation as the major supermarket chains enter petrol retailing or develop petrol discount schemes. As new entrants roll out their discount voucher offers, a period of intensifying competition is expected in a market recognised by the Australian Competition and Consumer Commission as highly competitive.

The downstream petroleum industry is important to the Australian economy through a direct contribution to economic growth and supporting the development of fuel intensive industries such as farming, mining, construction and transport. It also provides other benefits through the reliable supply of high quality petroleum products for Australian consumers, significant employment across the nation, and technical expertise to the Australian community generally.

In 2002–03, Australia consumed 45 000 ML (Megalitres) of petroleum products and produced 42 500 ML; 3100 ML was exported (excluding LPG) and 5200 ML was imported. Domestic refineries supply Australia with almost 90 per cent of its demand for petroleum products which is retailed through a network of over 8000 service stations. The Australian oil industry safely and efficiently delivers vital fuel supplies at the lowest pre-tax price in the OECD while responding to community requirements on environmental performance.

Australian refineries are price takers with prices for products determined by prices in the Asia–Pacific region. If Asian prices drop, Australian refiners must also drop prices regardless of the cost of importing and refining crude oil, or lose market share to imports. Profitability

of the Australian industry is therefore largely determined by refining margins in Asia.

The Australian Government is pursuing a holistic view of the energy sector through its Energy Policy Review process. Recent government announcements for alternative fuels (including LPG), and the cleaner fuels incentives, provide greater business certainty in the long term. However, the policy framework must also establish a level competitive playing field that is conducive to continuing investment in the downstream petroleum industry.

The domestic refining industry will be affected by a number of near-term government policy decisions. The Australian Government's cleaner fuels agenda and improvements in refinery reliability will require an estimated investment of at least \$2 billion through the current decade. Downstream petroleum market reform, including the repeal of the redundant Sites and Franchise Acts, is important to establishing a competitive framework in which the industry as a whole can continue to invest.

The industry faces an important challenge in producing cleaner fuels which, in conjunction with advanced engine technologies, is aimed at improving urban air quality.

Against this backdrop the financial results for the Australian downstream petroleum industry in 2002 and 2003 were much improved from the disastrous situation in 2001. These improved results were achieved by a focus on cost reduction in the domestic industry combined with some improvement in international refining margins. Given its history of poor profitability, the industry will need to see sustained improvement in financial results to support future investments in the clean fuel standards and other improvements, and to provide an adequate return to shareholders.

**Gerry Hueston**  
Chairman, AIP

## Key messages

- Australian refining is a price taker in the Asia–Pacific region; profits are related to Singapore refinery margins (product prices less crude oil costs).
- Australian refineries are generally smaller and older than regional competitors and must be extremely efficient to compete.
- The Asia–Pacific region will move to a negative regional supply balance owing primarily to a catch-up in demand over supply over the next few years.
- The move to cleaner fuels in the Asia–Pacific region is likely to put upward pressure on prices.
- The Australian downstream petroleum industry has an excellent record over recent decades of ensuring adequate supplies and any regulatory measures to address perceived security of supply issues could prove counter-productive.



## Petroleum refining in Australia

**Domestic refineries supply almost 90 per cent of the petroleum products required by major industries and the fuel distribution network of over 8000 service stations. The reliability of the fuel supply system is outstanding given the logistic and geographic challenges in Australia.**

The Australian oil refining industry produces the full range of petroleum products including LPG, petrol, diesel, jet fuel, lube oils and bitumen. It also produces a substantial volume of product for chemical feedstock.

In 2002–03, Australia consumed 45 000 ML (Megalitres) of petroleum products and produced 42 500 ML. 3100 ML was exported (excluding LPG) and 5200 ML was imported, accounting for 11.6 per cent of total consumption. A proportion of this imported volume is supplied to northern and north western areas of Australia where domestic refineries generally are unable to competitively supply market needs. Import terminals are located throughout Australia.

While Australia has substantial crude oil production, almost 60 per cent of this oil is exported. The crude oils required to meet the






product demand mix in Australia are imported by domestic refineries mainly from Asia and the Middle East.

Australia has eight principal refineries (only seven now operating following the mothballing of Port Stanvac) that were generally constructed in the 1950s and 1960s, although they have been extensively modified since then.

These refineries are relatively small with the largest having a capacity of 8000 MLpa (Megalitres per year). In comparison, four of the five largest refineries in the world are located in Korea, Singapore and India with capacities ranging from 31330 to 47400 MLpa that were constructed in the 1980s and 1990s. Production from the largest refinery at Ulsan, South Korea, exceeds the total Australian demand for petroleum products.

Australian refiners are price takers in the market place, with prices for products determined by prices in the Asia–Pacific region — Australian refineries must price their output to be competitive with imports (that is import parity). There is no tariff protection and all major capitals have fuel import

## Key

-  Port
-  BP refinery
-  Mobil refinery
-  Shell refinery
-  Caltex refinery



facilities. If Asian prices drop, Australian refiners must also drop prices regardless of the cost of importing and refining crude oil, or lose market share to imports. Profitability of the Australian refining industry is therefore largely determined by refining margins in Asia, and by our competitiveness with Asian refiners.

In future, structural imports will meet the growing demand in Australia, further strengthening the price relationship with Asian product prices.

The usual demand for petroleum products in Australia is around 777 000 barrels per day.

At the industry average capacity utilisation for 2002, the nominal domestic production is 689 000 barrels per day.

## Australian refineries

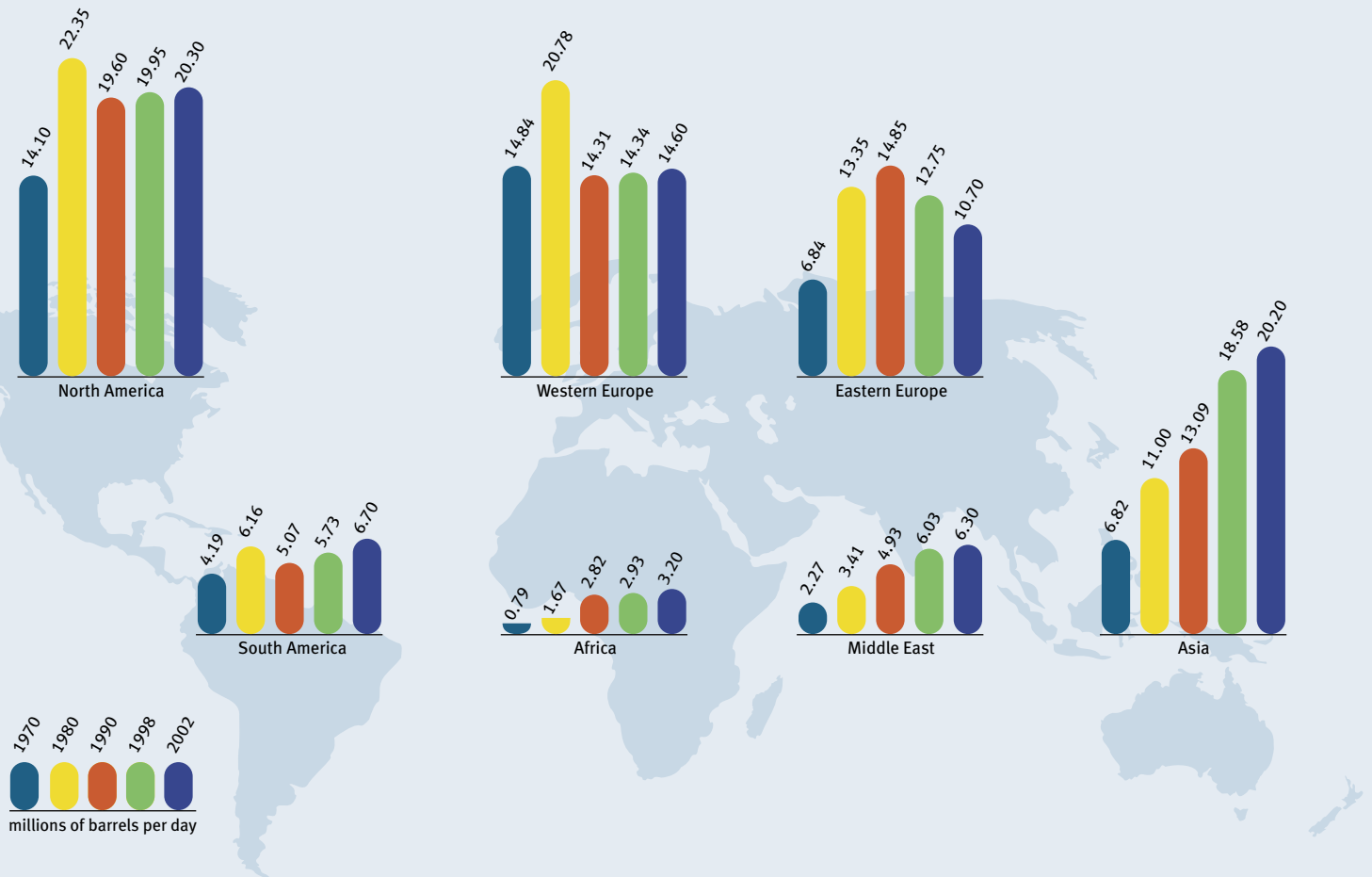
Refinery	Capacity: barrels per day (bpd)
Bulwer Island (BP—Brisbane)	88,000
Lytton (Caltex—Brisbane)	105,500
Clyde (Shell—Sydney)	86,000
Kurnell (Caltex—Sydney)	124,500
Altona (Mobil—Melbourne)	135,000
Geelong (Shell—Geelong)	119,000
Port Stanvac (Mobil—Adelaide)	78,000
Kwinana (BP—Kwinana, WA)	138,500
<b>Total</b>	<b>874,500</b>

**After many years of significant losses, Mobil announced the mothballing of the Port Stanvac refinery from July 2003.**

As one of the smallest refineries in the Asia–Pacific region, the refinery could not compete against larger regional refineries. Mobil is maintaining the refinery in a condition that would allow a re-start if international conditions suggested a sustainable future.

This refinery closure has firmly moved the Australian petroleum market to being a structural importer.

## World refining capacity



### Petroleum refining in Asia

Asia was traditionally a large importer of petroleum products, but significant additional refining capacity was installed from 1995–2002. As a result, Asia became a net exporter of some petroleum products, notably petrol. Asian product demand patterns caused most refineries in the region to be oriented towards diesel production, creating large volumes of lower quality petrol which were then sold at a discount. Recent rapid growth largely in China has absorbed most of the excess capacity in the region.

A significant portion of Asian refining is directly or indirectly assisted by host governments through measures such as differential taxation regimes for crude and imported products, and mechanisms such as restrictions on import storage capacity.

New and upgraded facilities have also received comparatively favourable taxation treatment from their host countries.

**During 2002 and 2003 there has been a strong improvement in Asian refining margins but it is too early to determine whether this is indicative of a sustained improvement in margins.**

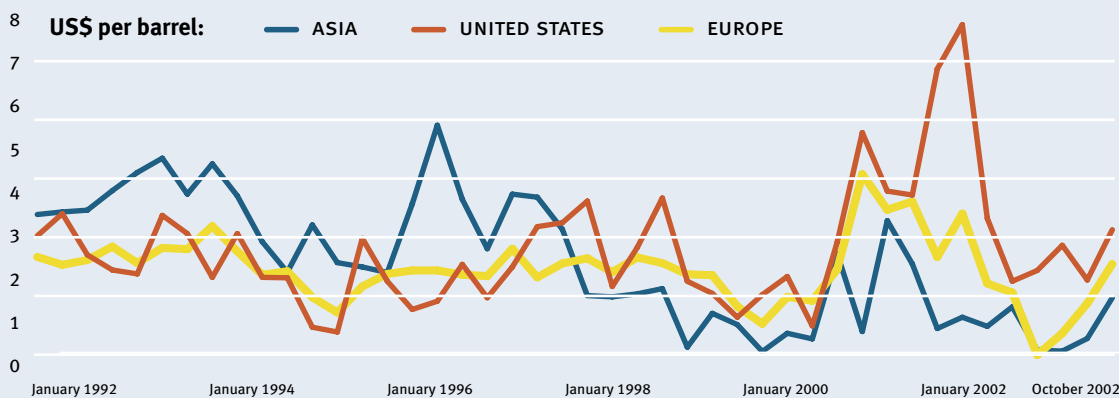
Future margins will depend largely on the course of economic growth in Asia and the requirements for cleaner fuels.

The supply situation in Asia over the 1990s is largely reflected in the depressed margins, in comparison to refining margins in Europe and the United States.

The combination of the Australian market moving towards greater levels of structural imports, the absorption of excess capacity in Asia and the moves

towards cleaner fuels in the region suggest that petroleum products supply in Australia could become increasingly tight. It is expected that import prices for quality fuels will increase and government reports have also identified that greater capital and production costs for cleaner fuels means a structural increase in the price of these fuels is justified.

Refining margins continued to improve through 2003.



SOURCE: BP STATISTICAL REVIEW OF WORLD ENERGY, JUNE 2003

## Cleaner fuels in the Asia-Pacific region

**A recent study by Asia Pacific Economic Cooperation (APEC) suggests that current spare capacity in Asia will be largely absorbed by 2006, leading to another round of investment in the region.**

The study found that the Asia-Pacific region is facing a further significant investment task in upgrading regional refineries to produce cleaner fuels — up to \$US 32 billion in some 20 countries over the next ten years. While the scale of investment is significant it is for the entire region and spread over a decade.

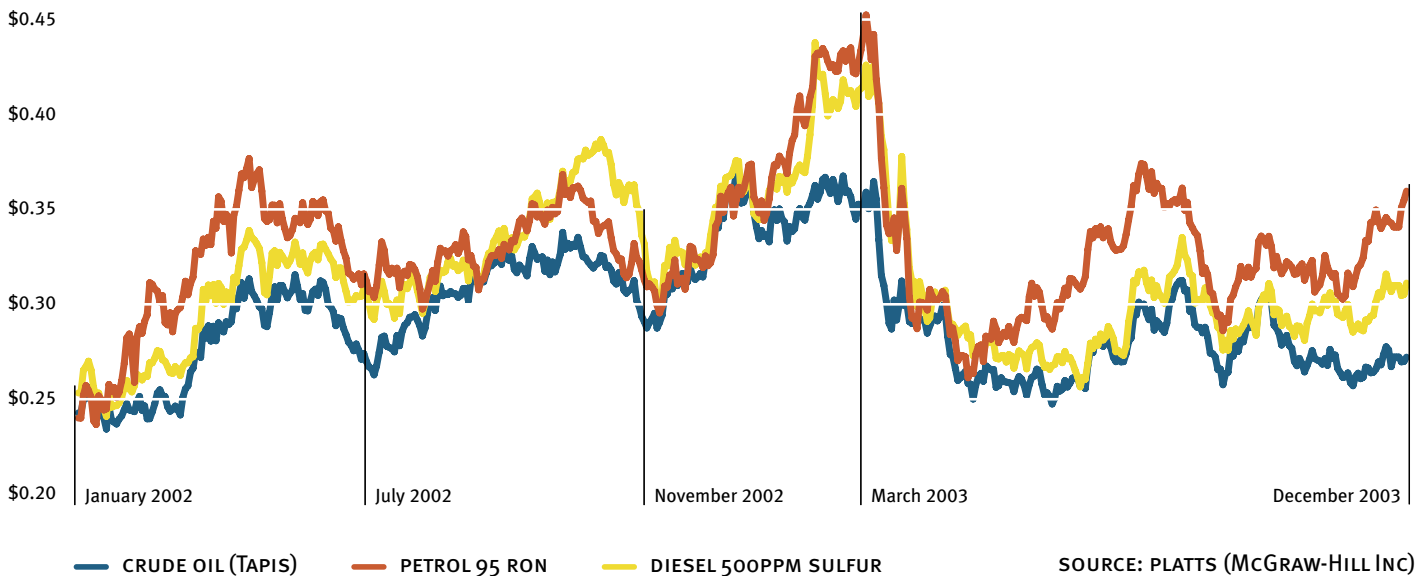
The main focus of the study was to assess the capacity and investment requirements across the region. For the Australian market, the APEC study

found there would be an increasing reliance on imports which would contribute to an increase in prices. However, producers' responses to such an outcome were not modelled. Economic responses, such as refiners anticipating increased margins, may lead to greater levels of production than estimated in the APEC study, thereby reducing the pressure on prices.

The APEC study confirms the increased cost of cleaner fuels and emphasises the importance of a positive investment climate if Australian refineries are going to compete for investment funds with other locations in the Asia-Pacific region.

## 8 Asian product costs

A\$ per litre:



During 2002, the price of crude oil rose fairly steadily. The first half of 2003 was marked by strong crude oil prices, partly due to the war in Iraq, followed by a sharp correction in April.

The strong Australian dollar and weakening international prices led to a fall in the price of crude oil in Australian dollar terms. Since that time, OPEC restrictions on output and firm demand have seen the international price

of crude oil strengthen, but the strong Australian dollar has kept these increases muted in domestic terms. Product prices largely track the movements in crude oil prices over time, but are also strongly influenced by the supply and demand characteristics for that individual product and the exchange rate in the short term (weeks to months).





Given Australia's level of crude oil imports and distance from other product suppliers, from time to time concerns are expressed about Australia's security of supply for liquid fuels. These concerns range from the possibility of supply shortfalls to greater levels of price variability in the market. In responding to each supply disruption (which will have its own characteristics), governments need to be clear about the outcomes of any potential intervention in the market place.

A stable and supportive investment environment is important for the continued operation of the domestic refining sector in a manner which can assist in reducing supply risks. However, the Australian refining sector is not able to counter price variability that is caused by external supply conditions in the Asia-Pacific region.

If price regulation were contemplated to avoid price spikes, it is likely to exacerbate any supply problems as suppliers would be uncertain as to whether they could recoup the costs of the fuel purchased. On the other hand, stockpiling or requirements for supply guarantees, place

additional costs on the supply system which would ultimately be passed on to the consumer unless government underwrote the significant costs.

The consideration of supply security for liquid fuels in Australia comes down to an assessment of the balance of risks faced by the economy due to any supply disruption as opposed to the costs of insuring against any disruption.

AIP does not believe government intervention is warranted. The downstream petroleum industry continues to make all efforts to ensure security of supply but cannot afford to guard against a highly unusual series of events. Nonetheless, the Australian downstream petroleum industry has an excellent record of ensuring continuing supplies with no major disruptions.

As Australia moves to cleaner fuels ahead of many countries in the region, the availability of spot market cargoes will decrease. However, supplies meeting Australian fuel standards will still be readily available on term contracts. In this context, AIP sees an ongoing role for independent fuel importers in Australia.



## National Oil Supplies Emergency Committee (NOSEC)

NOSEC has responsibility for coordinating responses to a national supply shortfall including providing advice to the Australian Government Minister for Industry, Tourism and Resources on the administration of the *Liquid Fuels Emergency (LFE) Act (1984)*. NOSEC includes representatives from industry, Australian and state governments and other relevant stakeholders.

It conducted a simulation exercise in June 2003 to test the emergency procedures under the LFE Act. The simulation was successful in

demonstrating the ability of industry and government in responding to a national supply crisis. NOSEC is now seeking to formalise its activities in a nationally agreed plan for co-ordinated action in the event of a serious supply disruption.

NOSEC is an important mechanism for dealing with a national supply disruption if it should occur. The tests in 2003 indicate that the industry and its regulators are well prepared for any such emergency.



## Key messages

- AIP strongly advocates appropriate national fuel quality standards based on sound science and rigorous cost–benefit analysis.
- Cleaner fuels cost more to produce and will require a major investment by the industry.
- The cleaner fuels incentives announced in the 2003–04 Budget will go some way to defraying the costs of this investment — and encourage production ahead of mandated standards.
- In announcing the cleaner fuel incentives, Australian Government Ministers highlighted the economic and environmental benefits of cleaner fuels that include improvements in urban air quality, greenhouse emissions, fuel efficiency, and the facilitation of advanced engine technologies.
- For alternative fuels to compete in the market they must be competitively priced, be reliably supplied and have consumer acceptance.
- As the quality of conventional fuels continues to improve, the relative environmental benefits of alternative fuels will reduce.

AIP advocates appropriate national fuel standards to facilitate the introduction of advanced engine technologies and so help address scientifically established environmental concerns. The cleaner fuels will help reduce pollution from existing vehicles and bring air quality benefits to Australian cities.

AIP works closely with the motor vehicle industry and the Land Transport Environment Committee (LTEC) to assist in optimising the timing of the introduction of fuel standards. This coordination aims for the best economic outcome for Australia, with important flow-on efficiency effects for various industries, such as transport and other large fuel consumers.

Consumers demand confidence in the quality of liquid fuels.

AIP advocates quality standards that are consistent across Australia and predictable so that participants in the market have sufficient time to implement and adjust to the new standards in an orderly manner.

Certainty of policy in relation to fuel standards is also critical for refining companies because of the long lead times required to make the necessary engineering changes and investments at refineries. Speculation about changing these standards represents an unacceptable uncertainty in the market.

Cleaner fuels cost more to produce because of additional capital requirements (e.g. new/expanded de-sulfurisation units), increased operating costs and generally lower yields (e.g. due to benzene and octane requirements). Production of cleaner fuels is also more energy intensive (and therefore carbon intensive).

To harmonise with European standards the Australian refining industry may need to invest at least \$2 billion from 2000–10. The exact figure is uncertain as there may be further structural reform of the industry and the requirements for each refinery will be highly variable.

The first tranche of fuel standards to 2006 is expected to require an investment by the industry of up to \$1 billion. Australian Government reports on the fuel standards identified that implementation would lead to a 1–2 cent per litre (cpl) structural rise in the price of fuel. However, prices are determined by the market and if sufficient quantities of cleaner fuels are not available, then the price will rise above this level.

There is greater uncertainty as to how much the second tranche (2006–10) of fuel standards will cost as there are a variety of pathways to achieve the standards, including trade-offs between capital and operating costs which will change over time. The cost will vary considerably between refineries due to the quite different processing configurations and the future business prospects for each refinery. Given the strict requirements for quality, the handling (interface management) costs for the fuel distribution system could be significant and are largely unknown.

The investment for 10ppm sulfur petrol is complex and expensive. AIP does not rule out the need for such a standard, but considers that the availability of vehicle technology requiring this fuel should be clearly demonstrated.

There may also be investments required to meet the Australian Government's 350 ML target for biofuels, which would require additional storage, blending and distribution assets, particularly for ethanol blend fuels.

## Fuel quality standards

The *Fuel Quality Standards Act 2000* provides the framework for the regulation of fuel quality standards in Australia. In the *Measures for a Better Environment 1999* package, the Australian Government announced a policy of harmonising Australian fuel standards with the European standards. The first round of changes to Australian fuel standards to 2006 was set in 2001 after a prolonged period of consultation with the relevant stakeholders. These Australian standards are similar to Euro 4 standards for diesel and Euro 3 standards for petrol.

The introduction of the next round of mandatory fuel standards for cleaner fuels is currently under consideration by the Land Transport Environment Committee (LTEC) which is expected to make recommendations to Government in mid-2004. The standards are similar to Euro 5 standards for diesel and Euro 4 standards for petrol and will further reduce the allowable sulfur content in fuel.

AIP advocates the following mandatory standards for cleaner fuels:

- a limit of 10 ppm of sulfur in diesel from 2009
- a limit of 50 ppm of sulfur in petrol with octane of 95 or more from 2008
- the limit of 10 ppm sulfur in petrol should not be set until such time as it is clear that vehicle technology is available to use the fuel.





The Diesel Sulphur Excise Differential (DSED) was introduced at 1 cpl from 1 July 2003 for the production of diesel containing less than 50 ppm sulfur (ultra low sulfur diesel—ULSD). The incentive increased to 2 cpl from 1 January 2004 and will continue until 2006 when the ULSD standard becomes mandatory. The delay in the introduction of the incentive and uncertainty about the form of its implementation means that less diesel production is expected to qualify for the incentive than otherwise would have been the case.

In the 2003–04 Budget, the Treasurer and the Minister for the Environment and Heritage announced additional measures to encourage the early production and import of low sulfur fuels with environmental and health benefits that include:

- reduced emissions of hydrocarbons and oxides of nitrogen
- reduced particulate emissions

- facilitation of cutting edge engine technology which reduces air pollution and greenhouse gas emissions.

The Ministers also expect important economic benefits as the introduction of advanced engine technologies improves overall fuel efficiency and will allow Australia to remain near the forefront of the adoption and utilisation of advanced automotive technology.

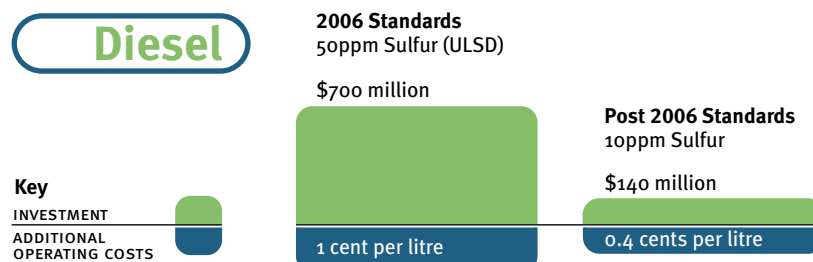
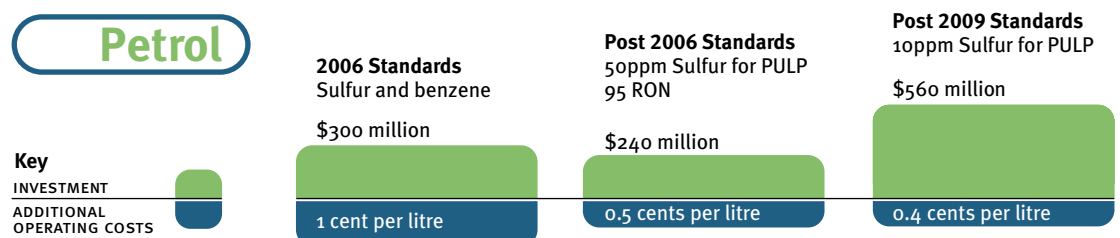
The exact incentive rates will be set once the appropriate fuel standards are decided by government but it is anticipated that the incentives will be:

- 1.0 cpl for diesel with less than 10 ppm sulfur for two years from 1 January 2007
- 1.1 cpl for premium unleaded petrol (PULP) with less than 50 ppm sulfur for two years from 1 January 2006.

## Costs of meeting petrol and diesel standards

Fuel standards investments to 2010 are expected to cost almost \$2 billion (not including 10 ppm sulfur petrol).

Overall, the downstream petroleum industry is expected to invest at least \$200 million per year for cleaner fuels through to 2010. There will also be significant increases in operating costs associated with meeting the cleaner fuels standards.



The post-2006 cost estimates are based on a study by Coffey Geosciences. Given the uncertainty about post-2006 standards and the investment required, the estimates are highly uncertain. AIP considers these estimates are at the lower end of the scale.

## Alternative fuels

There are a range of alternative fuels that are in use or have been proposed for use in Australian motor vehicles. These include:

- Ethanol blends in petrol to ten per cent
- Biodiesel
- Liquefied Petroleum Gas (LPG)
- Compressed Natural Gas (CNG)
- Liquefied Natural Gas (LNG).

For any alternative fuel to enter the fuel mix in a sustainable manner it must:

- be competitively priced with other fuels (alternative fuels generally have a lower energy content than conventional fuels)
- have a reliable supply (fuel marketers must be assured of supply if they are going to successfully use and promote an alternative fuel)
- be accepted by the consumer (consumers must be fully informed that these fuels are safe to use in their vehicles with no operability problems, and accept that advice as being credible).

Alternative fuels have a role to play in the fuel mix as long as production and marketing of the fuel is sustainable. Governments may wish to support alternative fuels for other policy reasons, such as regional development, as was recognised in the revised excise rates announced on 16 December 2003.

AIP believes that this assistance should be transparent as it may encourage investment in an area that may require long term government assistance for its survival. In addition, the perceived environmental advantages of alternative fuels need to be assessed against the dramatic improvement in quality of conventional fuels and the facilitation of new vehicle technology.

## Ethanol in petrol

13

In Australia, ethanol is made from starch waste and sugar crops but can also be produced from a variety of other organic feedstocks. Ethanol can also be produced from natural gas. When ethanol is produced by best practice methods it can have some environmental benefits over conventional fuels. However, these benefits tend to decrease when ethanol is compared with fuel produced to future fuel standards.

Federal Government policy towards the use of ethanol in petrol includes:

- a 10 per cent cap on the level of ethanol in petrol
- mandatory labeling of ethanol blends at the pump
- an excise rate on ethanol which reflects its energy content (discounted by 50%) and environmental performance
- a 350 ML target for the use of biofuels in the fuel mix by 2010.

AIP is taking positive steps towards achieving the Government's 350 ML target for biofuels through:

- participation in the Commonwealth Energy Task Force Ethanol Working Group which is seeking ways to rebuild consumer confidence in ethanol
- ongoing discussions by members with existing and prospective biofuels producers
- development of an AIP Guideline on Safe Storage and Handling of Ethanol
- continued marketing of ethanol blends in Northern New South Wales and the conduct of ethanol trials in Queensland by Caltex and BP.

**AIP believes that under current Government policy, ethanol should be able to find its place in the fuel mix once consumer confidence is restored. The move to higher octane fuels may mean greater demand for ethanol.**



## Key messages

- Australia has the lowest pre-tax petrol price in the OECD which has declined in real terms over the last twenty years.
- In general, more than half the price of petrol is made up of taxation from GST and excise.
- The entry of the supermarkets into fuel retailing is increasing the competition in an already highly competitive industry.
- The repeal of the Sites and Franchise Acts is essential to ensure that all participants in the market can compete fairly.



CALTEX

Star  
MART

94.9

98.9

39.9

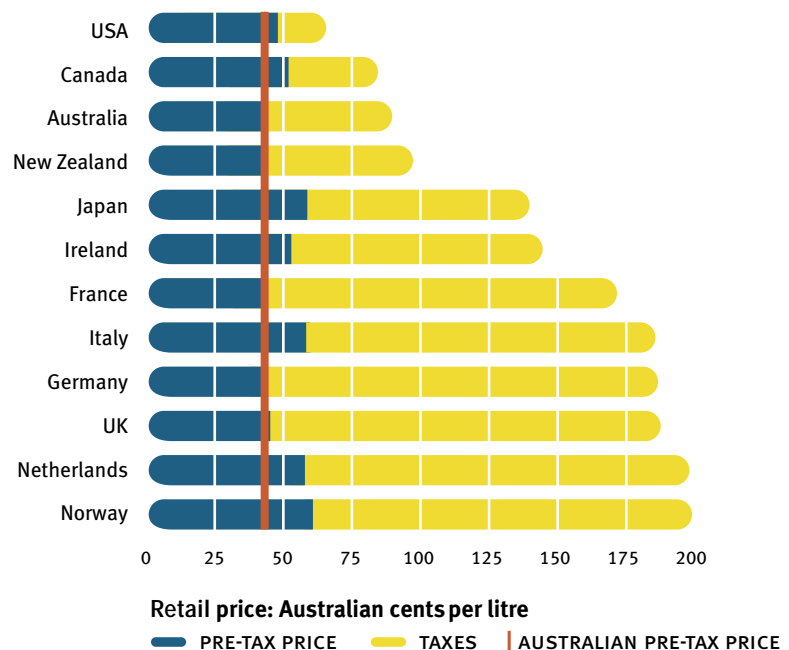
## Prices and taxes

Australia continues to have the lowest pre-tax price for petrol in the OECD and the third lowest price including tax. Over the last 20 years the pre-tax price of petrol has declined slightly in real terms. However, the post-tax price increased from 30 cpl in 1980 to 90 cpl in 2003, largely due to increases in taxes.

In the case of diesel, Australia also has the fourth lowest price in the OECD; with the impact on particular consumers varying by the application of government measures such as the Energy Grants Credits Scheme. For the majority of off-road users, the excise is rebated to the user and for some on road users a partial rebate is paid by government. The combination of high levels of efficiency in domestic refining and relatively favorable taxation treatment for diesel users gives the Australian economy a significant competitive advantage in the use of liquid fuels.

## Petrol prices and taxes in OECD countries:

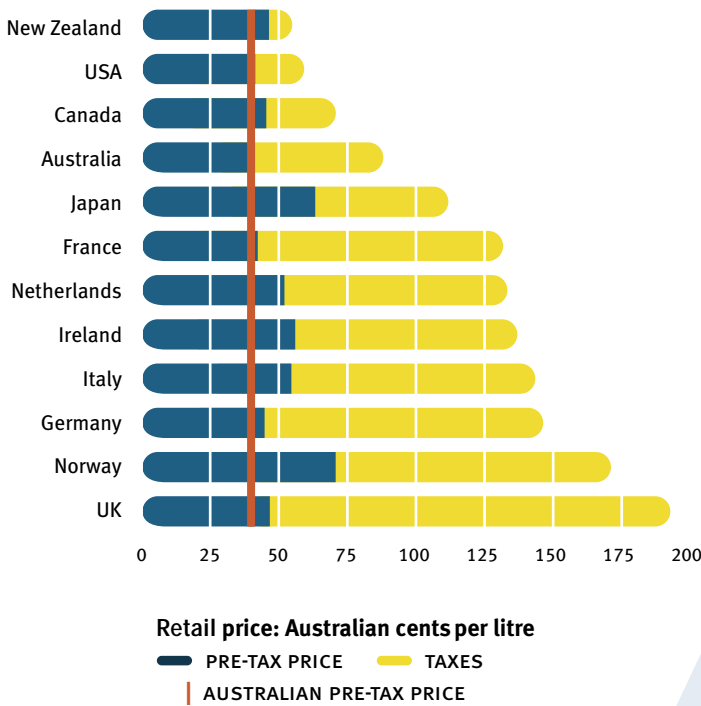
SEPTEMBER QUARTER 2003 Retail



## Terminal Gate Pricing

Wholesale price transparency in the petroleum market is assisted by the publication of Terminal Gate Prices (TGPs) by all AIP members. TGP is the price at which any person with the necessary safety clearances can purchase fuel from terminals by the tanker load. While TGPs are a requirement of Western Australian and Victorian legislation, TGPs are also published for most products in Australia, improving the openness and transparency of the fuel market.

**Diesel prices and taxes in OECD countries:  
SEPTEMBER QUARTER 2003R**



The proportion of the pump price paid in taxation has substantially increased since 1980 when excise was 6 cpl. A litre of petrol will typically have as much as 46 cpl in taxation (excise and GST) which is over half the price at the pump.



**Retail price variability**

Price variability in the retail petrol market is caused by factors which vary between different areas and over time. Some of the key factors include the price of crude oil, Singapore refiner margins, the capacity utilisation of Australian refineries, the level of local competition and the discounting cycle. Fundamentally, price variability signals the operation of a highly competitive market where each participant is jostling for market share.

The 2001 ACCC report, *Reducing Fuel Price Variability*, found that there was considerable variability in the Australian retail petrol market but options to limit price cycles, such as limiting price changes and other restrictions on pricing, were unlikely to have any impact on dampening the price cycle and could raise the average level of prices. The ACCC also found that 60 per cent of petrol sales were below the average price, suggesting that many consumers benefit from price cycles.

The ACCC recommended that there should be a consumer awareness initiative to enable consumers to time their purchases when the prices are relatively low. The ACCC also recommended that the Western Australia fuel pricing arrangements and TGP arrangements in Western Australia and Victoria should be closely monitored before any final conclusions can be made about the efficacy of the TGP.

While the retail price variability causes consumer concern, it does indicate a highly competitive market which ultimately benefits the consumer.



There are approximately 8000 service stations in Australia that are operated under a variety of commercial arrangements. The overwhelming trend over the last twenty years has been the consolidation of sites. The number of service stations has fallen from 20 000 in 1975 with a corresponding increase in sales volume at the remaining sites. This trend is continuing with fewer, but much larger, sites having increased market exposure and reduced unit operating costs and overheads.

By volume, the independent service station operators are estimated to have about 35 per cent of the retail market with Woolworths accounting for approximately 11 per cent of the market.

Under market regulations, the industry is covered by the Sites and Franchise Acts, state regulation covering wholesale pricing, as well as the general provisions of the Trade Practices Act.

The refiner/marketers are subject to restrictions under the *Petroleum Retail Marketing Sites Act 1980* which limits the number of retail sites that can be owned and operated directly. This Act, and the underlying trend towards devolution of control in the industry, has meant that only a relatively small number of sites are directly controlled by the refiner/marketers. The Sites Act restricts the operations of the oil companies by limiting their choice of business model hence adding to the costs of their businesses.

A variety of marketing business models are in operation, including refiner/marketer owned and operated sites, franchisees and commission agents for the refiner/marketers, and independent marketers. These arrangements are an important part of the distribution network, and AIP members are committed to fair dealing with all business partners.

The *Petroleum Retail Marketing Franchise Act 1980* specifies the conditions that apply to the franchisees (such as tenure and review conditions and pricing) hence impeding the flexibility of AIP members in responding to emerging market models.

The Acts do not cover the arrangements with the supermarkets and therefore provide an unfair advantage to some participants in the market.

Consequently, AIP considers the Sites and Franchise Acts should be repealed immediately.

## Downstream petroleum market reform

The Sites and Franchise Acts restrict the ability of oil companies to choose the most appropriate market model and increase the cost of business.

AIP recognises the community sensitivities regarding perceived market power in the downstream petroleum industry and supported the Australian Government's approach to industry market reform. The proposals to replace the Sites and Franchise Acts with an Oilcode would have removed prescriptive and costly regulations that inhibit the ability of various players to compete in the evolving retail market. However, a failure to reach agreement between stakeholders led to a decision not to proceed with the reform package at this time.

State governments also regulate the downstream petroleum industry. The Australian Government should encourage state governments to repeal their respective legislation and encourage a national approach to regulation of the downstream petroleum industry within the context of the Trade Practices Act.



The Australian Government has announced major reform of the excise system to move all automotive fuels onto a similar taxation treatment:

- alternative fuels, such as Liquefied Petroleum Gas (LPG), ethanol, biodiesel and compressed natural gas (CNG) will retain their excise free status until 2011
- from 2011 to 2015 excise will be levied on these fuels increasing by five equal instalments until it reaches its final excise rate
- the excise rates for each fuel will be based on the energy content of the fuel with a 50 per cent discount and an allowance for the environmental performance of the fuel and other developmental considerations.

The Government also proposed to examine the way in which the current excise rebates on fuels are provided to eligible recipients.

AIP supports the general thrust of the Government's approach to excise reform as it represents a move towards a consistent approach to taxing fuels. However, AIP recognises there will be significant adjustment costs associated with taxing previously tax-free fuels. The decision in December 2003 to provide 50 per cent rebate of this excise liability should ensure that industry is better placed to cope with the changes.

## Supermarket involvement in petrol retailing

**The entry of supermarkets into fuel retailing is seeing rapid and massive change to fuel retailing in Australia, with a dramatic increase in the level of sales subject to discount vouchers.**

Current discount offers are sparking fierce competition in the already highly competitive retail petrol market as the rollout of new marketing arrangements reaches full implementation. The current developments can also be seen as a larger trend towards the convergence of fuel retailing and convenience shopping.

In May 2003, Shell and Coles Myer Ltd (CML) announced a commercial alliance that would see a subsidiary of CML become the operator of Shell's core retail property network of 584 service stations. CML will have control of pricing decisions and the convenience store offer. Commercial customers and the remainder of Shell-branded sites will continue to be supplied directly by Shell refineries.

In September 2003, Independent Grocers of Australia (IGA) launched a fuel offer which provides a 4 cpl refund on fuel purchased from any supplier with the purchase of \$30 of groceries from an IGA store. The offer does not tie the fuel purchase to any particular supplier and allows the consumer an 8 cpl discount if another discount offer is also used.

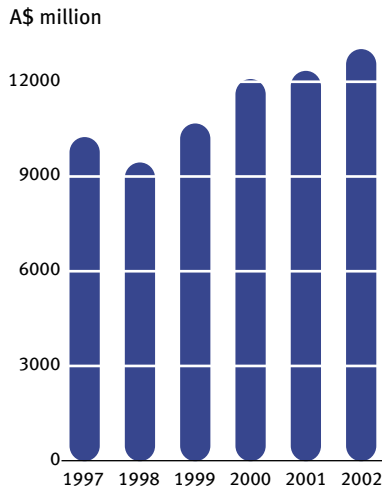
In November 2003, Woolworths and Caltex announced co-branded service stations offering a fuel discount of 4 cpl. The companies plan to extend their petrol offer to 450 service stations nation-wide.

In February 2004, the ACCC released its report into discount offers and competition in the retail petroleum market. It approved the discount vouchers stating they would bring benefits to consumers. The ACCC also found the retail market for petroleum was competitive with no evidence of systematic abuse of market power.



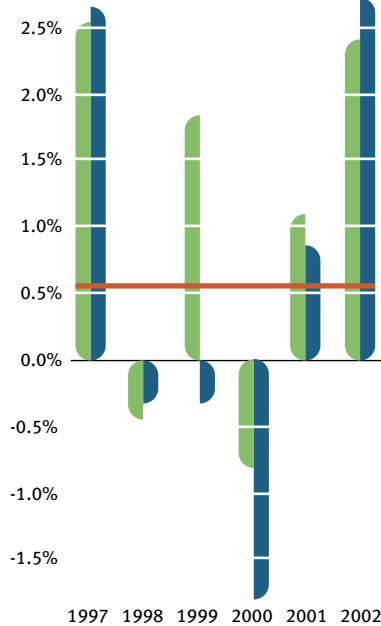
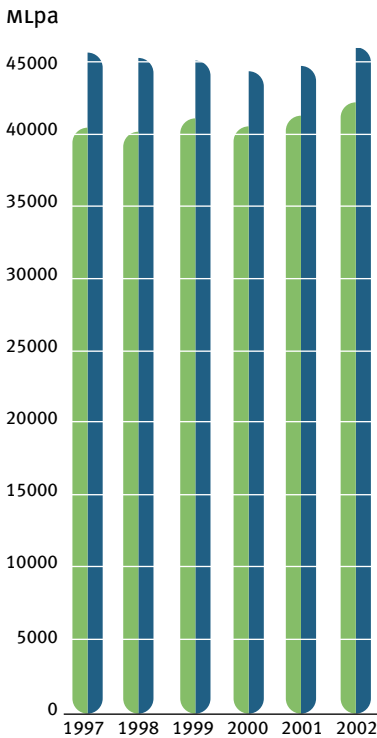
# Financial and performance highlights

## Asset value



At the end of 2002 the assets of the downstream petroleum industry were almost \$13 billion with refining assets of \$6 billion and marketing assets of \$7 billion. Asset values have increased by almost \$3 billion since 1997 driven by an investment program that has averaged almost \$500 million per year.

## Production and sales



The five year annual average growth rate was 0.2 per cent for sales volume and 0.8 per cent for production volume. The growth rates for 2002 are considerably above the longer term average, with annual growth rates from 2001 of 2.7 per cent and 2.2 per cent. Higher volumes were the result of a number of factors including strong domestic economic growth, greater refinery reliability, and an improvement in export volumes.

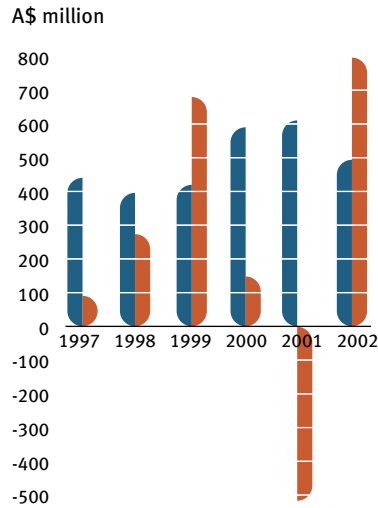
The growth rates of production and sales have been a relatively modest average of 0.5 per cent per year.

■ PRODUCTION (MLpa)  
■ SALES (MLpa)

■ DOMESTIC PRODUCTION GROWTH  
■ DOMESTIC SALES GROWTH  
— AVERAGE

## Investment and profits

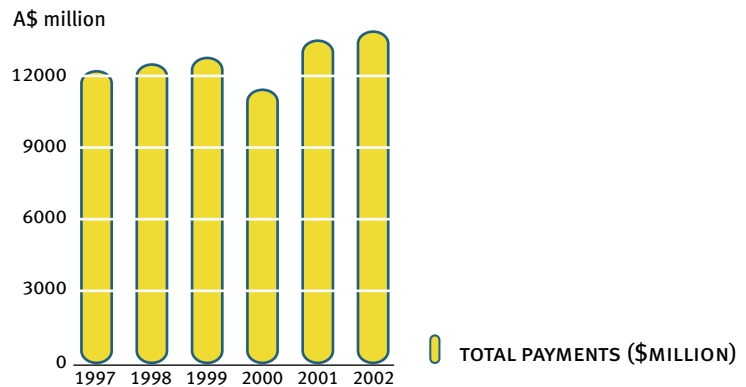
As a capital intensive industry, downstream petroleum requires large and ongoing investment in plant and equipment to continue safe and reliable operations. This is reflected by the large capital expenditure compared to net statutory profits. From 1997 to 2002 new investment averaged almost \$500 million while profits averaged only \$130 million.



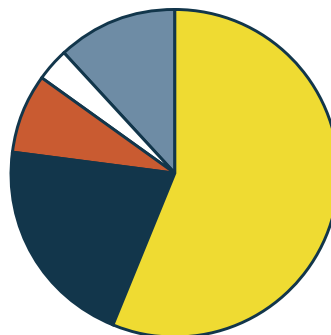
- NEW INVESTMENT (\$MILLION)
- NET PROFIT (STATUTORY) (\$MILLION)

## Payments to governments

The industry and consumers continue to make substantial contributions to government revenue, largely through payment of excise duties of over \$12 billion. Government taxes (excise and GST) account for almost half the cost of petrol at the pump.



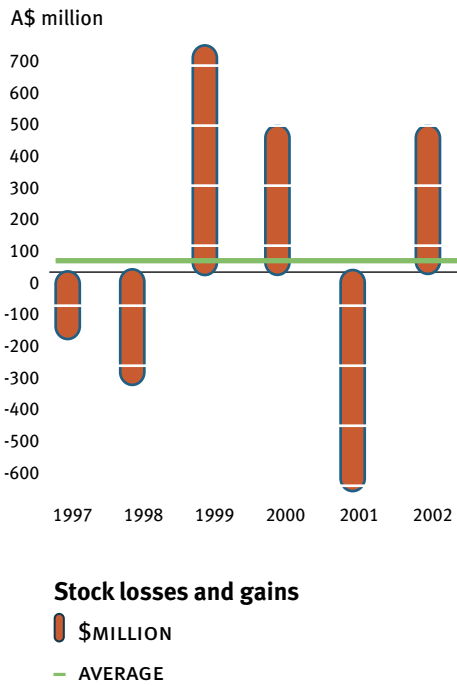
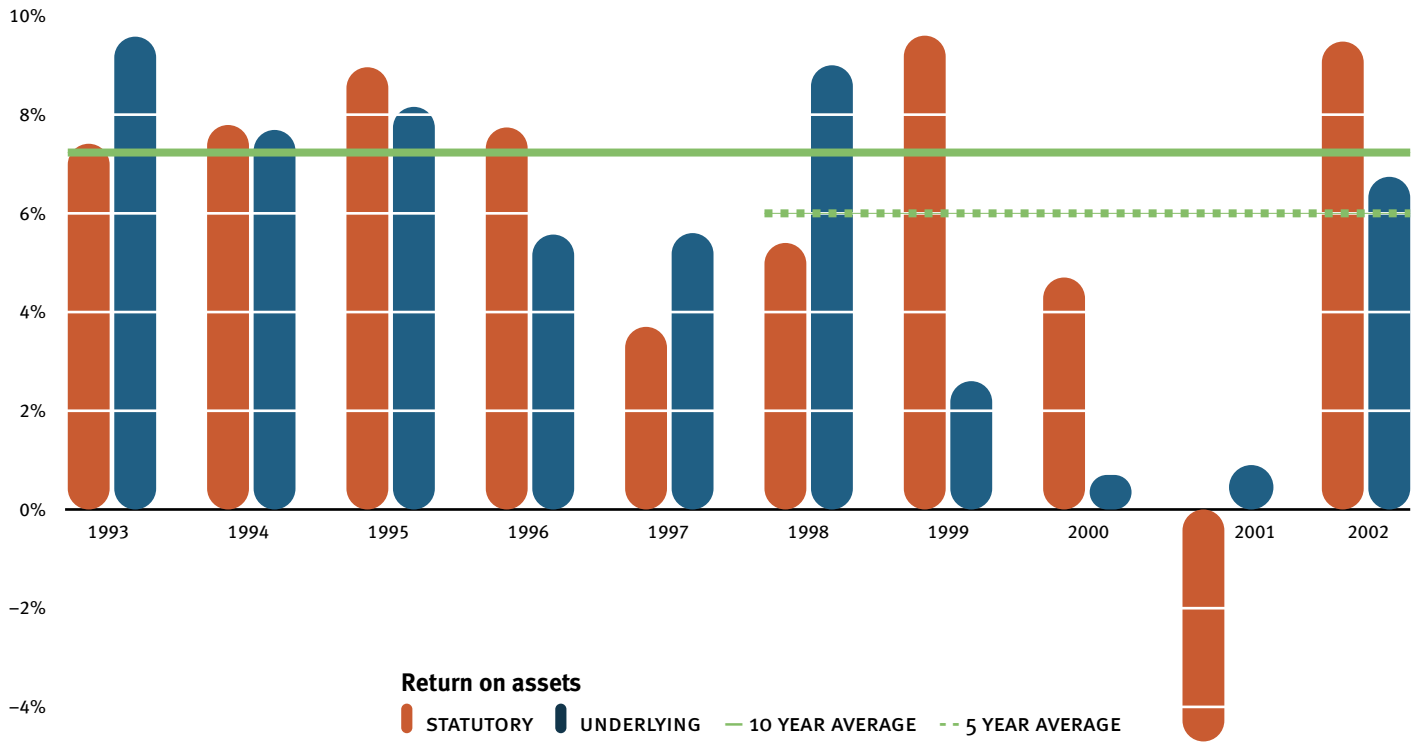
This revenue provides a substantial share of Commonwealth government revenue, accounting for almost eight per cent of total taxation revenue in 2003–04.



### Proportion of government revenue paid by the downstream petroleum industry

- INDIVIDUALS (56.16%)
- COMPANIES (20.89%)
- FUEL EXCISE (7.84%)
- SUPERANNUATION (3.26%)
- OTHER (11.84%)

## Profitability measures



Relatively low prices for fuels in Australia have led to pressure on refiners' profitability with returns on investment over the course of the last ten years that are largely below the long term bond rate. Profits are presented as Earnings Before Interest and Tax (EBIT) on total assets for both a statutory and underlying return.

The underlying return removes the impact of stock losses and gains from the statutory profit, to give a result that is not influenced by the movements in international crude oil prices. Removing these effects provides a clearer picture of the fundamental economic performance of the industry.

The fluctuations in crude oil prices since 1999 have meant similar fluctuations in the statutory profit for the industry. This volatility was particularly evident in 2001 when a stock loss of \$690 million led to the worst statutory result for the industry on record. An improvement in crude oil prices during the course of 2002 led to a stock gain of \$492 million. These changes in stock values

substantially contributed to the change in returns from a statutory loss in 2001 of 4.7 per cent to a statutory profit in 2002 of 9.5 per cent.

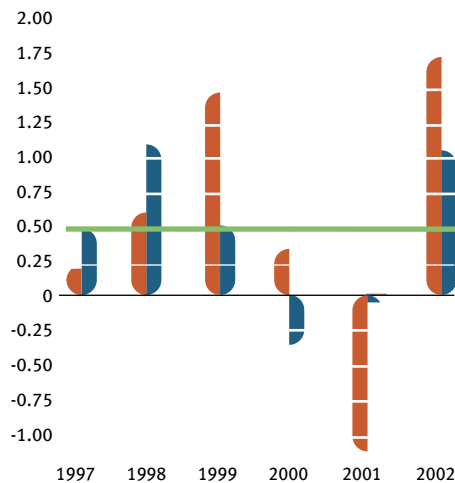
The underlying results have been consistently poor since 1999 dropping to below one per cent in 2000 and 2001. The underlying return did improve in 2002 to 6.3 per cent as a result of a combination of factors that included a slight improvement in margins, significant efficiency improvements in Australian operations, and an improvement in overall production and sales volumes.

While the 2002 returns are encouraging they are still substandard and must cover the massive losses that were incurred in 2001.

These results are also reflected in the underlying profit per litre of product which increased in 2002 to 1 cpl up from the five year average of 0.44 cpl .

NOTE: To retain comparability with previous AIP financial surveys, profits reported are higher than those reported to regulatory authorities because of changes to corporate structures at one AIP member company.

Australian cents per litre



Net profit per litre

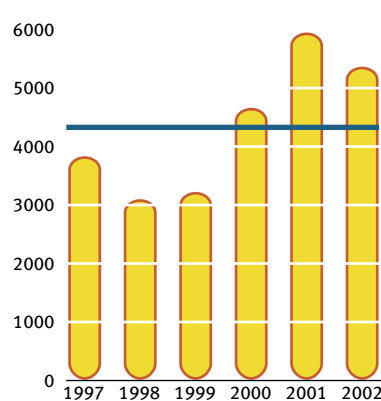
- STATUTORY
- UNDERLYING
- AVERAGE

## Debt position

As a result of the improved profitability for the industry, the debt position for the industry that was emerging in 2001 has eased but still remains well above the five year average.

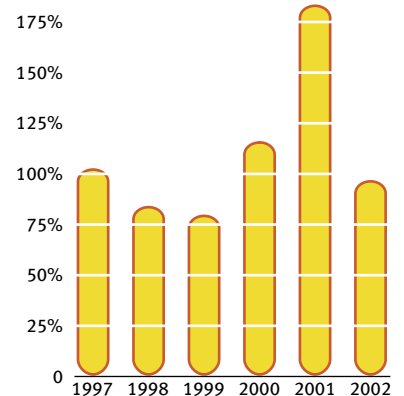
In 2002, total borrowings for the industry were \$5.3 billion compared to \$5.9 billion in 2001 and the five year average of \$4 billion. The debt to equity ratio reduced from 181 per cent in 2001 to 93 per cent in 2002, largely due to a substantial improvement in shareholder funds and the relatively small reduction in debt.

A\$ million



Total borrowings \$ MILLION

200%



Debt to equity

## Publications

AIP Publications in 2003 include:

- **GL14:** The Storage, Transport, and Handling of Fuel Ethanol and Ethanol Blend Fuels
- **GL12:** Safe Above-ground Fuel Storage on Farms and Industrial Sites
- **CP5 (update):** Pipeline, Road Tanker Compartment and Under-ground Tank Identification
- **CP23 (update):** Selective Couplings for Road Tankers Dedicated to Aviation Fuel.

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.

Key strategies to support the achievement of these objectives include:

- the maintenance of a suite of codes of practices and guidelines, covering operating practices and standards for equipment design, installation and operation
- training and accreditation programs
- individual programs targeted at specific issues.

## Oil spill response

The Australian Marine Oil Spill Centre was formed in 1991 as a wholly owned subsidiary of AIP. Its roles are: the provision of equipment and personnel on a 24-hour basis to respond to a major oil spill; provision of oil spill training services; and provision of advice on oil spill equipment.

## Used oil and used oil containers

The Australian market for lubricants is about 520 ML per year. Commercial customers, including automotive servicing, account for about 90 per cent of the market, which is generally supplied in bulk/drums/large packs. The remainder is supplied generally in five litre plastic packs or smaller.

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. AIP is a signatory to the National Packaging Covenant.

AIP believes market forces should play the dominant role in delivering the desired outcome.

The Federal Government has introduced a Product Stewardship System for Waste Oil, based on an excise on sales of lubricants to support recycling. There is a stand-alone industry that undertakes the collection and recycling of used oil.

The oil is recycled into a range of products, including fuel oils and lubricants. These used oil products face strong competitive pressures. Without an ongoing level of support there is a real risk that the collection and recycling processes will not be sustainable.

## AIP codes of practice and guidelines

The suite of AIP codes of practice and guidelines comprises about 30 publications, all available to the public. Some are incorporated in state and territory regulations. The main areas covered include fuels and fuels manage-

ment, underground tanks, remediation of contamination, road tanker standards and operation, service station security, pipelines and tanks, and management of waste including effluents and used oil. These documents are regularly reviewed and updated.



## Packaging

In the case of lubricant packaging, a commercial operation is in place for the recovery of steel drums. After the successful trial of a collection and recycling program for used plastic oil containers in Victoria, AIP is now moving to roll out the program progressively through all states over a five year period. The program has been initially outsourced to Visy Recycling, with support expected from the Australian Government under the transitional assistance element of the Product Stewardship Arrangements for Waste Oil.

## Health Watch

Health Watch was commissioned by AIP in 1980 as an independent epidemiological study to track the health of oil industry employees.

Health Watch follows about 18 000 past and present employees in the petroleum industry during their time in the industry and after they leave or retire. Health Watch records any occurrence of cancer and, eventually, the cause of death. By comparing this information for different jobs within the petroleum industry and with the general Australian population, Health Watch provides useful information about risks in jobs in the petroleum industry and risks in lifestyle. The information from the Health Watch study is also important in identifying factors that may be a risk to health and ways in which these risks may be controlled.

Participation in the study is voluntary, with 95 per cent of employees having joined the program. The study has historically enjoyed very strong support from employees, unions and companies and is also very well regarded internationally.

The study has found that there is no general increase in cancer among oil industry employees. However, an increased risk of leukemia was identified in employees who had a prolonged and heavy exposure to benzene. The industry has taken steps to address these exposure levels.

## AIP training and accreditation programs

AIP provides a number of training and accreditation programs, designed to enhance the safety of personnel engaged in the industry, contractors working on oil facilities, and the broader community. These programs cover the following areas:

- **Security at service stations:** AIP Service Station Security Training Program
- **Tanker drivers:** AIP Driver Accreditation Training (the AIP driver passport scheme, with over 4000 passports on issue), and the Safety Environment and Dangerous Goods Training Program
- **Road tankers:** AIP Safe Load Pass Accreditation Scheme (an inspection program required for all tankers entering terminals)
- **Contractors working on service stations:** AIP Workplace Clearance Training and Accreditation Scheme
- **Fire safety and fire fighting on oil facilities:** AIP Fire Safety Training
- **Sea tanker loading and unloading:** AIP Ship-Shore Officer Training and Accreditation.





**Australian  
Institute of  
Petroleum**

Level 2, 24 Marcus Clarke Street  
Canberra, ACT 2600  
GPO Box 279, Canberra ACT 2601

Telephone: + 61 2 6247 3044  
Facsimile: +61 2 6247 3844

[www.aip.com.au](http://www.aip.com.au)