

4

ENERGY MARKETS

DELIVERING AUSTRALIA'S TRANSPORT FUEL NEEDS

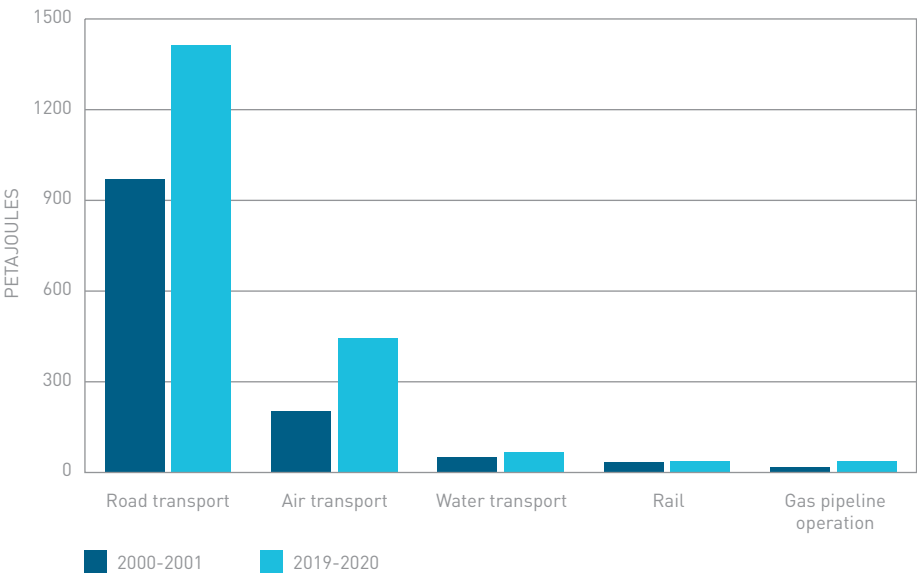
Key Points

- Australia's transport system makes a significant contribution to our economic and social welfare, and Australians enjoy access to low-priced fuel by world standards.
- Demand for transport fuels is projected to rise significantly in the period to 2020. How this demand is met will determine the ongoing competitiveness of our transport sector.
- Australia, like the rest of the world, relies heavily on petroleum-based fuels to meet its transport energy needs. This reliance will continue well into the future, even allowing for the greater penetration of alternative fuels.
- The Australian Government is committed to providing a market framework that delivers reliable supplies of competitively priced transport fuels, in a way that meets broader environmental and social objectives.
- Meeting this objective requires markets that facilitate strong and fair competition in the domestic market and reliable access to import and export markets.
- The transport fuels sector, like many others, has undergone a long period of consolidation over the last 20 years, which has improved its overall competitiveness. The pressure for structural changes will continue.
- Reform of the transport fuels market is desirable and the government has set out a comprehensive reform package. The government looks forward to broad industry support for these reforms.
- Fuel standards are an important element of the transport fuel market. The government will continue to consult with stakeholders in the setting of future standards to balance environmental objectives with competition and industry objectives.
- A generous policy framework is in place for alternative fuels. This framework allows time for this sector to develop and compete with traditional petroleum-based fuels.

INTRODUCTION

The transport sector accounts for 41 per cent of total Australian final energy consumption. Transport energy comprises road transport (accounting for 76 per cent of transport fuel consumption), air transport (16 per cent), water transport (4 per cent), rail transport (2 per cent) and gas pipeline operation (2 per cent) (ABARE 2003)¹.

Figure 1: Projected growth in transport energy consumption by sector



Source: Data from ABARE, Australian energy: National and state projections to 2019-20

Demand for transport energy is projected to grow at about 2.4 per cent per annum. At this rate of growth, the demand for transport energy will increase by about 50 per cent by 2019-20. The transport system is heavily reliant on petroleum-based fuels, which meet more than 97 per cent of Australia’s total transport needs. This is in line with world trends. Electricity powers some rail transport, coal powers some water transport, natural gas powers gas pipelines, and biofuels and natural gas play a very minor role in meeting our road transport needs (ABARE 2003).

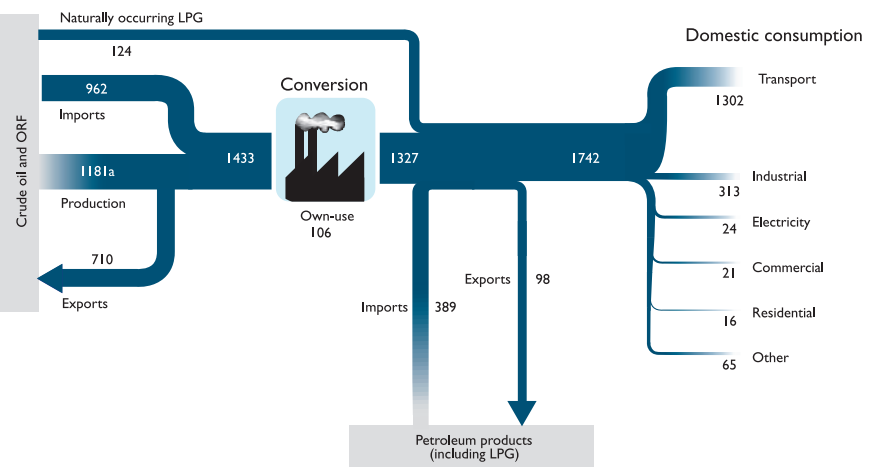
Australia’s heavy reliance on petroleum fuels for transport is expected to continue because of the lack of competitively priced alternatives, the long life expectancy of existing fuel production and distribution infrastructure, and the stock of vehicles. The next generation of vehicles, which will include some hybrids, will not significantly change this. Alternative transport fuels such as hydrogen, while potentially offering significant environmental benefits, are some time away from being price-competitive or being ready for mass application. This is despite regular fluctuations in oil prices, which have resulted in quite high petrol and diesel prices for periods of time.

The Australian Government is committed to providing a market framework that delivers reliable supplies of competitively priced transport fuels in a way that meets environment and fuel security objectives.

MEETING THE DEMAND FOR FUEL

Australia meets its demand for petroleum fuels from both domestically produced and imported refined petroleum products. Australian refineries also export product into mainly Pacific nation markets. While the vast majority of Australia’s demand is met from domestically refined fuel, imports play an important role. For example, it is often cheaper to supply northern regions of Australia from Asian refineries than from refineries in southern Australia. Also, in recent years, independent importers have taken advantage of excess refinery capacity in Asia to source competitively priced imports of petrol. Recent reductions in refining capacity in Australia, such as the mothballing of the Port Stanvac refinery in 2003, and growth in demand, mean that imports are likely to play an increasingly greater role in meeting domestic demand. The energy security aspects of this are discussed in Chapter 7, Energy security.

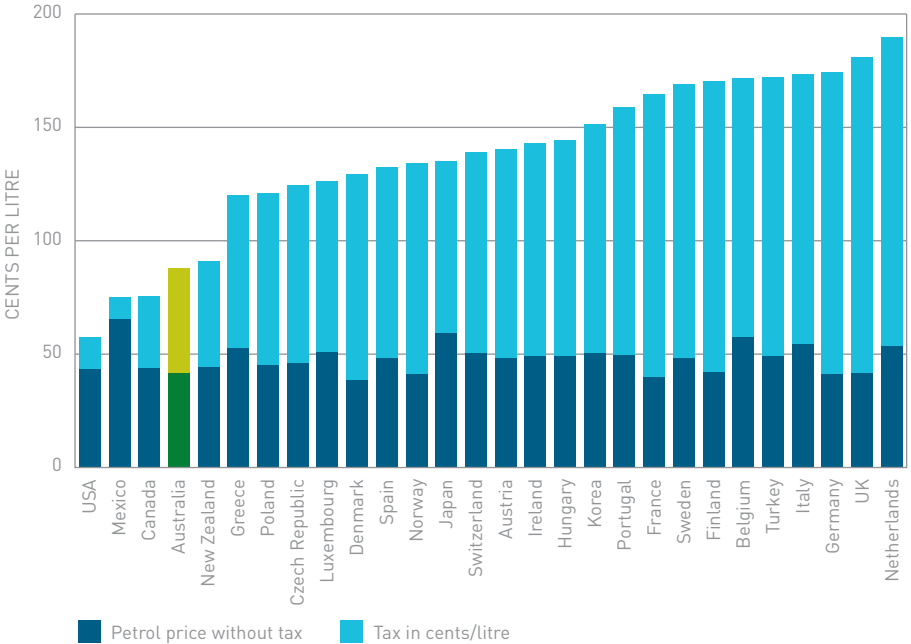
Figure 2: Flow diagram of petroleum supplies, 2004-05, in petajoules



Source: ABARE 2004

The market for petroleum fuels in Australia has been highly competitive and consumers have benefited by receiving relatively low prices. Australian petrol prices have been amongst the lowest in OECD nations, reflecting the efficiency and level of competition in the local and regional markets and the relatively low rate of fuel excise in Australia (IEA 2004)¹. Fluctuations in world oil prices, of course, will also impact on Australian petrol prices.

Figure 3: Petrol Prices in OECD Countries including tax, December Quarter 2003



Source: International Energy Agency, 2004

The downstream petroleum sector in Australia comprises domestic refineries, wholesalers (including importers), distributors and retailers, and encompasses the conversion of crude oil into final products, and the distribution and sale of those products to consumers. Like most industries, Australia’s downstream petroleum sector has undergone a period of substantial change over the last 20 years. Refinery closures have reduced the number of operating refineries from 10 to 7, and the number of retail sites has fallen from around 20 000 in 1970 to less than 8000 today. Until recently, returns in both the refining and retail sectors have been low for a long period, and pressure for restructuring remains a feature in the market.

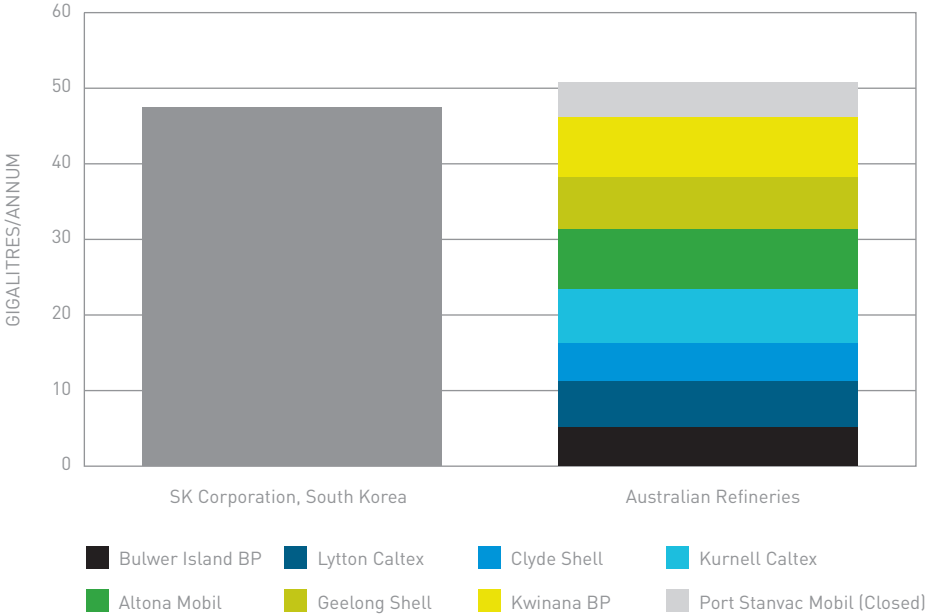
The future structure of the Australian downstream petroleum sector will depend on a range of factors including: Australia’s relative attractiveness as a location for refining and retail sector investment; international and domestic market demand and capacity; the extent of competition from importers, wholesalers and independent retailers; the commercial viability of alternative transport fuels; and the impact of new mandated fuel standards.

REFINERIES

Investment in oil refineries worldwide is cyclical. Investment tends to occur at the same time in the same region as refiners compete for projected sales growth, or seek to limit potential losses if operations are not upgraded to meet demands for improved product quality. This cyclical investment pattern has led to periods of over-capacity and low margins worldwide.

The Australian refining industry operates in an internationally competitive market, with large refinery capacity existing in South-East Asia capable of exporting substantial volumes of fuel into Australia. Australian refineries are small in capacity compared with new refineries in Asia. For example, the largest Asian refinery at Ulsan in South Korea could supply Australia’s entire yearly fuel demand. The threat of imports has been an important factor in providing Australia with competitively priced fuels, although Asian refiners face additional transport costs to supply Australian markets.

Figure 4: Indicative refinery capacity



Source: Australian Institute of Petroleum

Until recently, rates of return in the Australian refinery sector had been very low, with an average rate of return for the industry of 3.7 per cent in the five years to 2001 (Ernst and Young 2001). These low rates of return coincided with significant over-capacity in the Asia-Pacific region and created pressure for restructuring, such as the mothballing of Mobil’s Port Stanvac refinery near Adelaide in July 2003.

From late 2003 the Australian refining industry has improved its financial performance as refinery margins in Asia increased due to higher demand in China and the United States. However, the improved refinery margins in Asia mean that the relative attractiveness of investing in the Australian refining sector may not have improved. This remains an issue for refineries needing to make significant investments to meet new mandatory clean fuel standards. It has been estimated that the first tranche of clean fuel standards to 2006 will require an investment by the refining industry in Australia of up to \$1 billion (AIP 2003). While a significant portion of this investment has been made or committed by some refiners, others have yet to indicate their intentions.

WHOLESALESAERS/DISTRIBUTORS & RETAILERS

The wholesale and retail marketers of fuels in Australia are continually having to evolve in order to meet the challenges presented by new entrants, new and more efficient business structures, competition from non-traditional players and changing fuel needs. Petroleum marketing is a high-volume, low-margin business with discounting cycles involving substantial competition.

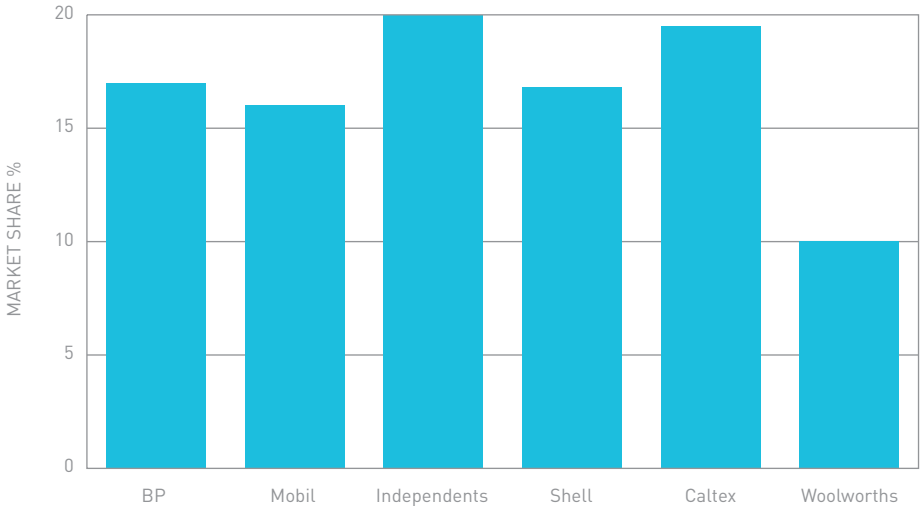
While the international oil market plays a primary role in determining average petrol prices in Australia, local retailers also set prices in response to local levels of competition. Service station operators sometimes discount petrol prices to attract more customers, accepting lower profits on fuel sales but seeking increasing sales of non-fuel items, such as retail goods. Their competitors usually react by similarly reducing their petrol prices. As petrol prices fall, some service station operators receive price support from their wholesaler. In periods of heavy discounting, petrol may be sold at a loss; however, this is not sustainable and eventually the discounting stops. Service station operators then put their prices up again, usually returning to earlier levels (about 3 to 4 cents per litre above the wholesale price) and the pricing cycle recommences. Petrol prices can fluctuate by 10 cents per litre in one day in particularly competitive markets. The Australian Competition and Consumer Commission (ACCC) examined reducing fuel price variability in 2001 and stated that it is likely that consumers in aggregate benefit from price cycles (ACCC 2001). The ACCC has initiated a consumer awareness campaign to enable consumers to buy their petrol at times when petrol prices are relatively low.

A range of distributors in Australia have been consolidated by refiner/marketers where they held majority equity, resulting in single distribution networks serving an entire state. Having well established wholesale and distribution networks has improved efficiency and the consistency of output from refineries to retail sites. Consequently, the number of independent wholesalers and distributors operating in the market has reduced dramatically. Furthermore, most independent retailers, comprising about 20 per cent of the retail market, source at least 50 per cent of their fuel from the refiner/marketers.

The advent of supermarkets into fuel retailing arrangements will play a major role in the Australian market for transport fuels. Recent significant changes have included the establishment and expansion of the Woolworths network, now being progressed through a co-branding arrangement with Caltex, and an alliance between Coles Myer and Shell. Both these alliances offer grocery customers access to petrol discounts. The ACCC conducted an extensive review of the tying of petrol discounts to grocery sales by both Coles Myer and Woolworths and announced on 6 February 2004 that the introduction of the shopper docket schemes has encouraged competition and lower prices in the fuel market (ACCC 2004).

Supermarkets have been part of the United Kingdom and French retail fuel markets for over 10 years. While supermarkets have been successful in capturing significant market shares, the markets in those countries have remained competitive in delivering petroleum products to consumers from a range of oil major, supermarket and independent sites.

Figure 5: Retail market share, 2003



Note: 2003 data which predates market changes over the last 12 months
Source: IBIS World Australia, Automotive fuel retailing in Australia, 2004

MARKET REGULATION

The dynamics of the downstream petroleum market emphasise the importance of ensuring arrangements exist which promote effective and fair competition.

At the Commonwealth level, the **Petroleum Retail Marketing Sites Act 1980** and the merger provisions of the **Trade Practices Act 1974** have a direct influence over ownership arrangements in the sector. The **Trade Practices Act 1974**, which now incorporates prices surveillance powers under Part VIIA and the **Petroleum Retail Marketing Franchise Act 1980** also regulate, or potentially regulate, conduct by market participants. At the state and territory level, there are wide variations in the degree of regulation over such matters as price variability and terminal gate pricing, as well as environmental, consumer protection, and occupational health and safety. Local governments play a role in approval of sites and remediation requirements.

Since 1983, there have been at least 43 inquiries into petrol pricing in Australia, and none of these has found evidence of profiteering by petroleum marketers. The ACCC currently informally monitors petrol, diesel and auto liquefied petroleum gas (LPG) prices at around 4000 sites across Australia. This arrangement provides confidence that Australia will continue to enjoy competitively priced fuel.

The extent and complexity of the **Petroleum Retail Marketing Sites Act 1980** and **Petroleum Retail Marketing Franchise Act 1980** have the potential to deter investment in the marketing of transport fuels. The Australian Government believes there would be benefit in greater cooperation between jurisdictions and the adoption of a whole-of-government approach to regulation that recognises the national nature of the downstream petroleum sector.

The Australian Government prefers a light-handed but appropriate approach to regulation that recognises market forces as the most effective mechanism for determining resource allocation and prices. However, the government believes that reform of the downstream petroleum market is needed and has developed a comprehensive reform package encompassing a national approach to terminal gate pricing, a mandatory code of conduct governing relations between fuel suppliers and retailers (the Oilcode) and the repeal of the Sites Act and the Franchise Act. The Australian Government looks forward to broad industry support for these reforms.

THE ROLE OF FUEL STANDARDS

National fuel standards are set under the **Fuel Quality Standards Act 2000** to regulate the level of pollutants and emissions arising from fuel use, facilitate the adoption of more efficient engine and emission control technology, and allow the effective operation of engines.

The Australian Government has implemented processes for setting fuel quality standards with the aim of broadly aligning Australian fuel quality parameters with international standards. The first tranche of Australian standards for petrol and diesel is being progressively introduced between 1 January 2002 and 2006. A second tranche of Australian standards was forecast in the 2003–04 Budget. They will bring national petrol and diesel standards into approximate alignment with the European (Euro 5) standards for both fuels, to be introduced in Europe on 1 January 2009.

Australian refiners and fuel importers have been provided by the government with a clear policy and regulatory framework to supply high-quality (low-sulphur) fuels. The government has provided incentives to refiners and importers to offset the higher costs of producing cleaner fuels and to bring forward supplies of 50 ppm sulphur diesel in advance of the mandated date of 1 January 2006 to capture early environmental benefits. Forty per cent of the diesel fuel market will be supplied with 50 ppm sulphur diesel by June 2004. A second phase of incentives will encourage the early supply of 50 ppm sulphur premium unleaded petrol and 10 ppm sulphur diesel two years before the mandated dates for these fuels (currently anticipated to be 1 January 2008 and 1 January 2009 respectively).

The second phase of incentives, including the additional excise rates required to fund the proposal, will be reviewed in the period prior to implementation to ensure that it aligns with the timing of new fuel standards and market conditions. The indicative excise (and customs) duty increase would be 0.7 cents per litre on all diesel and 0.06 cents per litre on all petrol, in order to fund subsidies for the increased production costs of 1.0 cents per litre for 10 ppm sulphur diesel and 1.1 cents per litre for 50 ppm sulphur premium unleaded petrol.

In determining fuel standards, the Australian Government also carefully considers the potential impact on competition in fuel markets. The movement of Australian fuel standards away from those applying more generally in the Asian region can have an impact on the availability of competitively priced imports. A recent example of this was the reduction in the permitted level of olefins in petrol and the effective prohibition of the additive, methyl tertiary butyl ether (MTBE), from petrol in Australia from 1 January 2004. Petrol meeting these standards can be supplied from Asia but it is not as widely available as petrol containing a higher volume of olefins and/or MTBE, and it commands a small price premium (consistent with cleaner fuels costing more to produce). These impacts were anticipated by the Australian Government when it set the standards in 2001.

While fuel standards in many Asian nations are currently less stringent than in Europe and North America, these markets are also expected to move towards common standards over time, albeit at a somewhat slower rate than anticipated to occur in Australia (Hart, 2003).

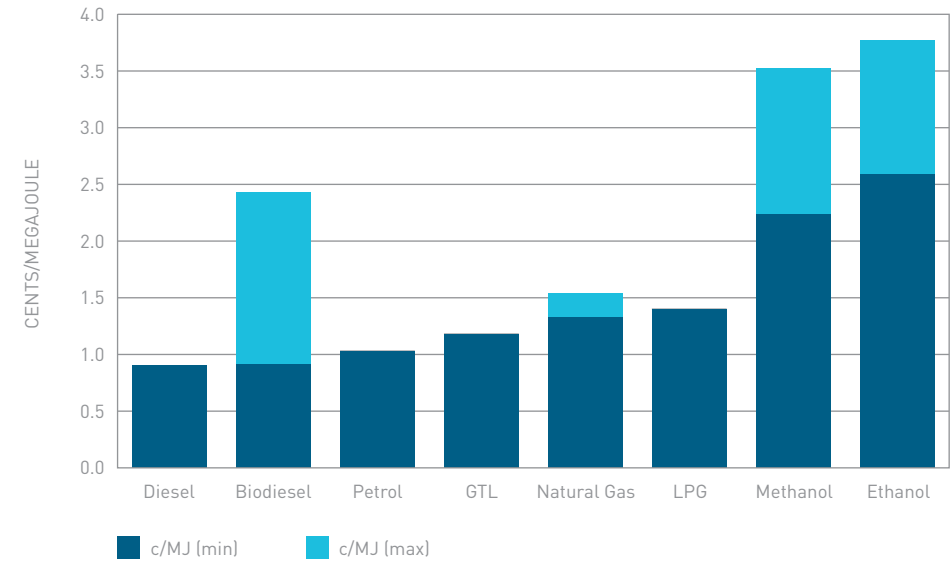
The Australian Government recognises that in the determination of future fuel standards there is a need to balance environmental objectives with competition and industry objectives. Accordingly, it will continue to consult closely with stakeholders on these matters. The government is also committed to integrating its policy approach on the refining and vehicle industries with regard to air quality objectives, in recognition of the relationship between the capacity of auto manufacturers to meet emission standards and the capacity of refiners to meet fuel quality.

ALTERNATIVE FUELS

The main alternative fuels currently being used in Australia are LPG, natural gas and biofuels such as ethanol and biodiesel. Other potential alternative fuels include hydrogen, di-methyl ether and methanol. LPG is a petroleum fuel and currently supplies about 6 per cent of transport fuel requirements by volume (DITR 2004), or about 5 per cent by energy content (ABARE 2003). Other alternative fuels in total contribute less than 1 per cent by either volume or energy content.

The government has implemented a framework of measures to support the use and production of alternative fuels in Australia. These measures include excise concessions currently estimated to cost \$840 million a year in foregone excise revenue (mostly from LPG sales), a \$1000 grant for LPG vehicles delivered new from 1 July 2011 (available until 30 June 2014), a \$37.6 million capital fund to support new biofuels production capacity, and measures to bolster confidence in the use of ethanol petrol blends.

Figure 6: Indicative energy costs of transport fuels (net of tax)



Source: Australian Government estimates
Note: Prices of petroleum fuels vary with international oil prices and exchange rates. Minimum and maximum prices for biofuels and natural gas-sourced fuels reflect large variations in feedstock prices and/or throughput volumes. Based on an oil price of US\$35 per barrel and an exchange rate of A\$1 = US70cents.

No effective excise will apply to currently untaxed alternative fuels until 1 July 2011. Effective excise will then be introduced in five equal annual steps to a final rate on 1 July 2015. The phased introduction of excise recognises the need for effective transitional arrangements to give fuels that are currently effectively untaxed an opportunity to establish their place in the market. Alternative fuels entering the excise net will also receive a discount of 50 per cent on the full energy content excise rate.

The government’s approach to biofuels reflects the regional and other benefits that would arise from the development of a commercially viable industry in Australia while recognising that all fuels need to be able to compete on their commercial merits in the longer term. The Australian Bureau of Agricultural and Resource Economics has examined the assistance currently provided by the Australian Government for the biofuels industry and has reported that it would support the further development of the industry (ABARE 2004).

The Australian Government has provided a generous policy framework for the alternative fuels sector to develop and promote their products in the commercial marketplace. Ultimately these fuels must compete on their commercial merits and the government will not mandate the use of alternative transport fuels.

LOOKING FORWARD

The Australian Government is committed to providing a policy framework that will allow the downstream petroleum sector to reliably supply competitively priced, clean fuels to meet Australia's growing transport fuel needs. Within that framework, the government also seeks a strong, environmentally responsible domestic refining industry capable of playing a primary role in supplying Australia's refined petroleum product needs at competitive prices.