

**Parliament of Australia**

**The Senate**

**Economics Committee**

**Inquiry into the Price of Petrol in Australia**

**Submission by the Manildra Group**

9 September 2006

# Inquiry into the Price of Petrol in Australia

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### Introductory Remarks:

This submission responds to the terms of reference of the Senate Committee Inquiry established to report on the price of petrol in Australia.

Petrol pricing is determined by many factors but the final price paid by the consumer can and should be reduced by around 3 cents per litre where ethanol is blended with the fuel at 10%.

Any failure to do so is the responsibility of the operator and it should be kept in mind that the overwhelming majority of service stations are controlled by the major oil companies.

In the context of looking at pricing therefore it is valuable to look at the role ethanol can play as a transport fuel.

Biofuels such as ethanol have the potential if properly exploited as a transport fuel:

- to improve urban health outcomes through reduced pollution,
- hold down petrol prices where ethanol is part of the blend,
- cut our national dependence on imported oil products,
- reduce our national trade deficit and,
- increase regional and rural employment

Australia is becoming increasingly reliant on foreign oil (Attachment 1). This is reflected in our increasing trade deficit due to petroleum product imports which has increased from \$448 million in 2001, to over \$12 billion in financial year 2005-06 (Attachment 2). The deficit due to petroleum product imports now accounts for approximately 72% of Australia's total trade deficit.

Australian produced renewable biofuels can make a significant contribution to the conservation of fossil fuels.

The increasing trade deficit will have a real negative impact on domestic employment.

In the alternative, the local production of renewable biofuels, such as ethanol, has the reverse effect of stimulating significant job growth in the rural and regional sectors of Australia.

Given the economic and social dependence of our national economy on oil for energy, this situation must be taken into account especially in the context of our declining domestic oil reserves and rising crude oil prices.

Australia has the capacity to produce all the agricultural products which are required as feedstock for the production of renewable fuels such as ethanol. Major industry participants such as The Grains Council and Australian Wheat Board Ltd have indicated their strong support for the development of a renewable fuels industry (Attachments 3a, 3b).

The ability of bio-ethanol to reduce toxic air pollution and greenhouse gas emissions from vehicle exhaust is well proven, and ethanol is the only liquid biofuel component which will blend seamlessly with existing petrol, storage, transport and delivery infrastructure.

As has been well demonstrated by the oil industry in the USA, there are no infrastructure barriers to ethanol use. Indeed, in the US, the major oil companies champion the use of ethanol (E10) blends (Attachments 10 & 11a).

Various studies in Australia and elsewhere in the world have identified that motor vehicle pollution poses significant risks of death and injury to the public.

Just as Governments came to understand the dangers of lead in petrol and the risks of tobacco smoke as a cause of lung cancer, we are learning to identify the risks to public health in the more traffic intensive cities like Sydney, Melbourne and Brisbane. These risks are associated with fine particulate matter and toxic emissions generated by vehicle exhausts.

The number of deaths from respiratory disease directly attributable to transport induced pollution, the number of asthma attacks and the related health consequences are substantial.

The impact on Australian families is also significant and the cost to the public health system is in the many billions of dollars a year.

The United States, with its serious air quality issues associated with exhaust emissions, has long identified the need for the addition of an oxygenate to their fuel to begin to address these concerns.

As a result the Clean Air Act was amended in 1990 to mandate an oxygenate in US cities where there was high carbon monoxide pollution. Ethanol, for reasons of price, effectiveness and its environmental benefits has been the oxygenator of choice.

On 16 June 2005, the US Senate voted to double ethanol production by 2012 (Attachment 4).

The USA has also recognised the employment benefits of domestic production of biofuels and the way in which this industry can begin to payback some of the damage which years of importation of oil has done to the economy.

Today, the US uses over 188 billion litres of ethanol based fuel transport fuel which is used interchangeably with unleaded petrol. Some 30% of all fuel sold in the US contains ethanol.

Europe has also taken a decision to implement a biofuels directive, which will see 2 percent of renewable fuels in its total fuel mix by 2005, and an equivalent of 5.75 percent of renewable fuels by 2010.

One of the driving forces for this in Europe is the need to reduce GHG emissions for motor vehicles.

The use of ethanol as a component of our fuel mix will achieve many positive public policy outcomes. The substitution of imported fuel, the reduction of traffic induced pollution and consequent substantial public health benefits are some of these.

There is substantial evidence from overseas experience to suggest there will be positive economic, health and environmental benefits from the use of oxygenated biofuels such as ethanol.

We have now reached the stage where failing to act is a significant decision in itself.

It is now worth considering a number of important matters in more detail:

### **(1) Greenhouse Gas Reduction**

Transport sources are one of the primary generators of Greenhouse gases with road transport contributing some 12% of GHG emissions to the Australian inventory in 2004 and ethanol offers a means to reduce the contribution of passenger motor vehicles to the total Australian Greenhouse Gas output.

Evidence in support of the substantial GHG emission reduction offered by ethanol is provided by the Argonne National Laboratory Center for Transportation Research, Illinois USA in a study prepared for the Governor of Illinois in December 1997. Their model of emission reductions for E10 blends is in the range 12% to 19%.

As ethanol is a renewable resource, grown in Australia, it offers an obvious way to reduce GHG emissions in a modest but realistic way within the existing transport fuel distribution system..

### **(2) Contribution to GDP and Jobs**

- The US ethanol industry contributed \$8.9 billion to the United States GDP in 2004 at an ethanol output of 13 billion litres.
- In the period 2000/2001 to 2004/2005 Australia's, total trade deficit due to petroleum products increased from \$488 million to over \$12 billion (Attachment 2). This represents approximately 72 percent of Australia's total trade deficit. Fuel demand is increasing, crude oil prices are high and with no new domestic refining capacity being constructed, this trend is expected to accelerate.
- The US Department of Commerce estimates that each USA\$1 billion added to their trade deficit, costs the US economy 19,000 domestic jobs. There is every reason to expect that a similar effect would occur in the Australian economy.
- A recent independent analysis (Attachment 6) of the benefits of a Queensland ethanol industry found that the industry is expected to provide positive benefits for the Queensland economy.

- The increase in gross output resulting from ongoing production and construction of new capacity in Queensland is expected to support the creation of up to 6,886 new jobs in all sectors of the State's economy by 2010.
- The combination of spending from annual operations and capital spending for new plants in Queensland is expected to add up to \$1,490 million to the State's economy by 2010.

Impact of E10 fuels on motor vehicles:

- The APACE report (Executive Summary at Attachment 7) which was the largest and most comprehensive vehicle study in Australia, was well received by both government and industry. The study showed that 10% blends of ethanol in petrol offered no significant threat to the public and the environment and offered substantial benefits.
- Fifty-eight vehicles were used in the APACE test program and represented examples of most makes and models in use in Australia over the period 1979 to 1995. Carburetted and fuel injection vehicles were included. This study concentrated on areas of operability, driveability and emissions.
- The APACE findings parallel our 13 years commercial experience in selling in excess of 3 billion litres of ethanol blended fuel into the market.

**Other international and Australian scientific research on health and environmental impacts of supplementing fossil fuels with oxygenates such as ethanol and other biofuel blends.**

- Research undertaken by the Bureau of Transport & Regional Economics in 2003 indicates that approximately 1,200 people die each year in Australia and that victims suffer 21,000 extra days of asthma attacks as a direct result of fine particulate air pollution from vehicle emissions.
- Motor vehicles are a major source of fine particulate emissions and therefore can be assumed to be a major cause of these health effects. The economic cost of this death and morbidity to Australia is also very high with the BTRE research group calculating it at around \$3.3 billion per annum.

- An earlier study by the National Environmental Protection Council in 1998 (Attachment 8) pointed to a figure closer to 2,400 deaths per annum and an annual health cost to the community of over \$17 billion.
- This means deaths from this type of pollution already exceed the annual road toll yet it receives almost no publicity because it is a silent killer and the direct causal link with the source of this deadly pollution is not well established in the public mind.
- Another study by the Journal of the American Medical Association, March 2002 indicates that one fifth of lung cancer deaths are attributed to exposure to fine particulates from vehicle exhaust emissions.
- Petrol is the largest man made source of carcinogens. The components of tailpipe emissions which represent the greatest health risk (mainly cancer and heart disease) are fine particle emissions (less than 2.5 microns in size), benzene and other aromatics.
- E10 reduces tailpipe emissions of fine particles in the size range of less than 2.5 microns by up to 50 percent.
- According to the Apace Research Ltd, 1998 report (Attachment 7), E10 reduces tailpipe emissions of benzene and other aromatics by around 27 percent. In addition to a 27 percent reduction in benzene and other aromatics, the use of E10 is shown by the US EPA to reduce total toxic emissions by 28 percent.
- Another major toxic gas emission and significant contributor to ozone formation is carbon monoxide. E10 has been found by the US EPA to reduce carbon monoxide tailpipe emissions by up to 30%. This is acknowledged by Mobil in its US brochure (Attachment 11a).

**The economic and scientific bases upon which decisions have been made to support ethanol and other biofuel products in North America, Europe and other countries.**

- Studies in North America, Brazil and other countries have consistently demonstrated that a viable ethanol industry provides significant economic, environmental and health benefits.

- These countries achieved successful biofuel industries through government intervention in the form of mandates and regulated oxygenate requirements.

### North America

- The Clean Air Act amendment in 1990 mandated an oxygenate in US cities where there was high carbon monoxide pollution. This Act provided a sound economic basis for the development of the ethanol industry in the US.
- In 1996 President Clinton said,
  - ***“Ethanol production increases farm income, decreases deficiency payments, creates jobs in rural America and reduces America’s reliance on foreign oil”.***
- In 2005 President George W Bush said in his State of the Union Address,
  - ***“...my budget provides strong funding for leading-edge technology from hydrogen fuelled cars, to clean coal, to renewable sources such as ethanol. Four years of debate is enough. I urge Congress to pass legislation to make America more secure and less dependent on foreign energy.”***
- Currently 50 millions tonnes of corn are processed each year into ethanol in the US. This represents only around 13% of total corn production in the US.
- In August 2006, there are currently ethanol biorefineries in the United States that have the capacity to produce more than 4.8 billion gallons of ethanol annually. There are 42 ethanol refineries and 7 expansions under construction with a combined annual capacity of nearly 2.9 billion gallons according to the US Renewable Fuels Association.
- In June 2005 Congress resolved to increase fuel ethanol production to a targeted 30 billion litres by 2012 (Attachment 4).
- Global energy industry analysts, LECG (Attachment 5) found that in 2004, the US ethanol industry, which in that year:



- Produced nearly 13 billion litres of ethanol, resulted in an increase of \$US 8.9 billion in the nation's GDP.
  - Supported the creation of more than 143,350 jobs in all sectors of the economy.
  - Contributed \$US1.25 billion in federal tax revenues.
  - Generated \$US806 million in state and local government tax revenues.
- LECG also estimated that in 2005 the ethanol industry will result in a decrease in the US trade deficit of \$5.1 billion. With the rapidly increasing price of crude oil this estimate is undoubtedly low.
  - In the US Ethanol blended fuels reduced CO<sub>2</sub> equivalent greenhouse gas emissions by approximately 7.03 million tonnes in 2004. This is equal to removing the annual greenhouse gas emissions of 1.04 million cars from the road.

### **Brazil**

- Brazil produced 15.1 billion litres of fuel ethanol in 2004. Brazil has been using ethanol blends in petrol since 1931.
- In 1975, as a direct consequence of the oil crisis on the Brazilian economy, the government decided to establish a mandate to blend ethanol with petrol in the nation's motor vehicle fleet.
- Since 1975, ethanol production has been the driving force behind the expansion of the Brazilian sugar industry. This has achieved economies of scale and unparalleled competitiveness for both its sugar and ethanol industries.
- As at 2005, the total sugar crop production in Brazil is some 55 millions tonnes per annum of which around half is used in ethanol production.
- The Brazilian Government has mandated a minimum ethanol content of 25 percent in all petrol sold.
- Between 1976 and 2004 the ethanol industry has allowed Brazil to reduce the value of its fuel imports by over US\$60 billion (2004 dollars). If interest on the avoided foreign debt is taken into account, savings amount to US\$121 billion.

- The total volume of petrol substituted by ethanol in Brazil between 1976 and 2004 is nearly 230 billion litres.

### **Europe**

- Europe has recognised the adverse environmental and health effects of particle emissions from vehicles as noted in the Lancet Medical Journal. These adverse effects are as follows:
  - 6% of all deaths result from PM10 exposure.
  - In Austria, France, Switzerland PM10 is responsible for 40,000 deaths per year; twice the traffic fatalities in these countries.
  - Motor vehicles are responsible for 50% of particle emissions.
  - People in cities die about 18 months earlier than they would have otherwise.
  - Over 300,000 cases of chronic bronchitis and 500,000 asthma attacks leading to 16 million lost person days of activity.
  - Health costs from pollution due to traffic represents around 1.7% of total GDP.
- As a result of these health concerns and pollution issues, the EU Parliament in 2003 legislated compulsory renewable fuel targets of 2% renewable energy in 2005 rising to 5.75% by 2010.
- Much of the targets in liquid transport fuels will be met and exceeded with biodiesel and ethanol.

### **Impediments to Wider Use in the Community.**

Given the obvious benefits and public good outcomes from the use of products like E10, the obvious question is why isn't it in greater use in the community?

Ethanol blends do not harm motor vehicle engines or components although there have been some views to the contrary within the community over recent years and there is a need to dispel some myths to this effect.

In recent times, this concern has largely dissipated especially given that no actual damage to a vehicle has ever been reported.

It is also the case the number of pre 1986 cars now on the road continues to decline with extraordinary rapidity. It is estimated that by 2009, the number will be statistically insignificant.

By far the greatest threat to the wider use of this product in the market is the domination of the distribution systems by the major oil companies.

While E10 can be purchased at some Independent outlets, these are an insignificant minority numerically.

To quote from a recent speech by Senator Ron Boswell, Leader of the National Party in the Senate:

***“ Ethanol blended fuel can provide immediate price relief to motorists, yet E10 is only available at around 260 outlets of the nation’s approximately 6,300 service stations, which is less than two per cent. BP affiliated outlets account for 1,300 service stations but only 50 are selling E10. Caltex and its affiliates account for 1,790 outlets but only 41 currently sell E10. Shell offer E5 at 25 of their 1,110 associated outlets, and Mobil have virtually told the government that they are not even interested in talking to them. They say they have no pumps.***

***Only two per cent of the service stations affiliated with the four major oil companies sell ethanol blended fuel.”***

While the oil majors indicate their general support for the concept, that support is not translated into purchases and subsequent sales at the pump. If the product is not made available, the public can not purchase it.

Governments acted to force the removal of lead from petrol for reasons of public health and safety, ethanol offers similar health benefits along with economic and environmental outcomes that also in the public interest.

Ethanol is also likely to hold down the price of fuel. Its use is also in the public interest as well as in the interests of motorists.

It may not be in the interests of oil companies. An indication of this can be seen from Attachment 13 which is a comparison of the Upper and Lower projections of the Federal Governments Targets for Biofuels as announced by the Prime Minister as recently as 22 December 2005.

As will be noted from the lower YTD actual achievement curve, results speak louder than targets.

### **Implementation Proposal:**

- Today, the total annual ethanol production capacity in Australia is around 155 million litres and total sales of fuel ethanol for the 6 months ending 30 June 2006 are estimated at just over 25ml by DITR giving an estimated annual rate of some 50ml.

However, Manildra Group estimate that in the same 6 month period less than 9ml would have been purchased by the major oil companies for sale in their service stations as 90ml of E10. Given that the oil companies control access to the overwhelming majority of the petrol pumps available to Australian motorists, they determine the availability of this important new fuel.

The Manildra Group represents around 105 million litres of this capacity with the balance available from the CSR and Rocky Point refineries in Queensland.

- The Federal Government has a stated policy to achieve a minimum of 350 million litres of renewable fuel production by 2010. This represents less than 1% of the total fuel market by 2010.
- As the major supplier of fuel ethanol we would like to make the following comments on the commercial reality of this industry.
  - The oil companies have for many years viewed ethanol as a competing product as it reduces their sales of fossil fuels. They have refused to purchase ethanol for addition to petrol in Australia other than for very limited regional "trials".

Regardless of their lack of ethanol sales in Australia, Shell Oil have strongly endorsed biofuels (Attachments 11b & 12). Shell Oil has a major share of the ethanol distribution market in the US. Note also that ethanol fuels have been strongly endorsed by General Motors (Feb. 2005).

- As a result, Manildra has been unable to sell any significant volumes of ethanol to any of the major foreign oil companies since commencing production in 1992.
  - Instead Manildra purchases its fuel indirectly through a third party arrangement. To sell the fuel in the marketplace we have to purchase 9 litres of petrol to sell one litre of ethanol.
  - The 10 litre blend then has to be sold in the marketplace against the suppliers of this fuel, which leaves 90% of the price of our end product in the hands of our competitors, the major oil companies.
  - This method of achieving access to the market is unsustainable.
  - The aggressive anti-ethanol campaign, which initially included the posting of "no ethanol" signs at service stations, has reduced sales to an unsustainable level.
- Given the commercial realities as outlined above, the existing industry is not sustainable. We believe that under the existing market conditions there will be no new viable entrants into the industry, including recipients under the Commonwealth Government biofuels grants program. They will simply not be able to attain sustainable market access.
  - For this industry to survive and grow government intervention in the form of a mandatory progressive uptake requirement is essential.
  - Based on the current production capacity within the existing industry, Manildra Group consider that some form of mandatory implementation of the Federal Governments Renewable Fuel Policy will be necessary to ensure that the fuel is available at the pump. Compared with the annual national consumption of 19 billion litres of petrol, any level of mandating can be relatively small in the first instance and still ensure the initial success of the program.
  - However, action must be taken in the medium term to ensure the existing players survive and enable new projects currently on hold to proceed.
  - We would suggest that priority be given to making available renewable fuels in highly populated urban areas where the benefits of these fuels will be maximised.

## **Concluding Remarks:**

Our commercial experience supports the technical research studies that there are no drivability or operability issues with E10. This is also supported by the widespread use of E10 blends in countries such as the US and Brazil.

The health and environmental impacts of fossil fuels and resulting toxic emissions are recognised by Governments worldwide.

Countries such as the United States and Brazil, have acknowledged that biofuels play a crucial role in reducing these emissions and have taken the necessary legislative steps to ensure biofuels are part of the fuel mix.

These countries have also recognised the importance of decreasing their reliance on uncertain foreign oil resources and increasing their national energy security.

**The survival of the ethanol industry has reached a critical point.**

Without certain access to the national fuel distribution network it is clear that the ethanol industry will not survive.

Although government support to increase production of biofuels by way of production grants is a welcome step, the industry can never grow to a sustainable size while there is no certain buyer for the product.

The future of the biofuels industry lies in the government taking immediate action in the form of mandatory uptake requirements as outlined in the submission.

It is time for Australia to follow worldwide acceptance of biofuels and to take action to realise the many economic, environmental and health benefits that renewable fuels, such as ethanol, have to offer.

**Manildra Group.**

## LIST OF ATTACHMENTS

- 1 Oil and Gas Reserves of Australia 2003 – Page 3
- 2 Australian Petroleum Industry Trade Deficit 1996/2005
- 3a Grains Council of Australia Letter dated 14/2/2005
- 3b AWB Ltd Letter to Prime Minister dated 30/5/2005
- 4 Senate (USA) Gives Ethanol an Added Boost, 2005
- 5 Contribution of the Ethanol Industry to the US Economy in 2004, John Urbanchuk, Director LECG LLC
- 6 Economics of a Queensland Ethanol Industry, Queensland Department of State Development and Innovation, 2005
- 7 Executive Summary – Intensive Field Trial of Ethanol/Petrol Blend in Vehicles – APACE Research, December 1998
- 8 Extract From NEPC Report 1998 Air Pollution Health Risk Lung Cancer, Cardiopulmonary Mortality, and Lung Term Exposure to Fine Particulate Air Pollution, Journal of the American Medical Association, 6 March 2002, Vol 287. No.9
- 9
- 10 Air Quality and Ethanol in Gasoline  
Gary Z Whitten PhD, SMOG REYES
- 11a Mobil Corp. Brochure: Why Ethanol is Good For Your Car
- 11b Shell Corp US biofuels advt.
- 12 Seizing opportunities in the future fuels market, Royal Dutch/Shell Group, 2005
- 13 Aggregated Industry Projections up to 2010 Based on Oil Company action plans for ethanol uptake