

PROPOSED ETHANOL MANDATE FOR QUEENSLAND

RACQ Position Paper May 2008

Background

Increasing community and government concern about environmental issues and the growing acceptance of the finite nature of the world's oil resources have driven the uptake of ethanol blended petrol around the world. The Queensland Government proposes by 2010 to require that ethanol makes up at least 5% of the total volume of petrol sold in Queensland. The RACQ has a long-standing position that there should not be a government mandate on the amount of ethanol sold in Queensland.

The RACQ position on the proposed mandate is founded in the policies set out in its Advocacy Charter. The policy on provision of fuels and other automotive products is:

The automotive and petroleum industries, actively encouraged and supported by government, should undertake research and development and other initiatives to bring to the market new or improved fuels and other related products which will enhance the automotive, environmental and economic performance of road transport.

The Advocacy Charter also identifies areas of environmental concern pertinent to motoring: technology and standards relating to pollution and greenhouse gas emissions; and scarcity of resources including fossil fuels.

Recent research by the RACQ examined developments in biofuel technology, production and policies in Australia and overseas. This paper summarises the results of that research and confirms the RACQ position on the proposed ethanol mandate in light of that research.

Automotive Performance

In 2005 an Australian Government Taskforce reviewed the available information on the health, environmental and automotive impacts of biofuel use. The report of the Taskforce concluded that, while use of petrol containing 10% ethanol (E10) results in 2-3% increased fuel consumption compared to standard unleaded petrol, almost all vehicles manufactured after 1986 could use E10 without damage. However, a detailed study for the Government by Orbital Australia Pty Ltd in 2007 found that as much as 40% of post-1986 vehicles were in fact unable to use E10.

The CSIRO published a report in 2007 that considered the risk and opportunities for large-scale biofuel production in Australia. The report noted that, while manufacturers generally do not warrant damage to motors caused by the use of more than 10% ethanol petrol, some manufacturers also refuse to warrant damage from petrol containing less than 10% ethanol.

In a letter to the Queensland Premier in March 2008, the RACQ raised concerns about technical issues associated with storing, supplying and using E10 petrol. Ethanol has a scouring effect on old storage tanks that results in contaminants in fuel and leakage from tanks that were adequate for unleaded petrol. Consequently, some petrol retailers would have to replace old storage tanks to cope with E10. It is likely the cost of these new tanks and other upgrades would be passed on to consumers. Alternatively, some retailers may be forced to close, leading to reduced choice for consumers and, ultimately, higher prices.

The RACQ also raised the concern that requiring the sale of E10 would lead to retailers who have a limited availability of storage tanks replacing standard 91 RON and/or 95 RON unleaded petrol with E10. There is evidence of this occurring in South-East Queensland already. This replacement would force drivers of vehicles that cannot use E10 (up to 40% of all vehicles) to purchase premium unleaded petrol, at usually 8 cents per litre higher price, and possibly reduce the choice of other alternative fuels available.

Recently, the German Government abandoned plans to require all petrol to contain 10% ethanol, to avoid forcing millions of drivers to pay for premium unleaded petrol. The German Automobile Association (ADAC) previously warned of possible damage to vehicles and increased motoring costs resulting from the proposed requirement for E10.

Environmental Performance

Any assessment on the environmental performance of fuels should take into account the entire life cycle of production, transport, storage and use of the fuel. The 2005 Australian Government Biofuels Taskforce reported the main environmental advantage of E10 could be significantly reduced particulate matter (PM) tail-pipe emissions over unleaded petrol, but more work was needed to quantify the effect. The Taskforce noted any benefits in PM emissions would need to be weighed against the increased evaporative emissions of smog-forming organic compounds from ethanol blend petrol.

In suggesting there may be a reduction in PM for ethanol, the Australian Government Taskforce did not consider the fuel life cycle. A 2008 Victorian Government inquiry into ethanol mandates reported significantly increased PM emissions for ethanol when measured over the entire life cycle. Both the Victorian inquiry and the Australian Taskforce noted increased emissions of smog-causing compounds and reduced carbon monoxide emission levels for E10. The Taskforce also noted the need for additional care in the storage and handling of E10 due to the increased risk of groundwater contamination.

Assessments of the reductions in greenhouse gases (GHG) emissions available through the use of ethanol blend fuel vary substantially depending on the feedstock and methods used to produce the ethanol. The Australian Taskforce reported a range of GHG reductions for E10 compared with unleaded petrol of 1% to 4%. The CSIRO and Victorian reports quote similar figures.

Life cycle reductions in GHG emissions are limited by the use of food crops such as grains and sugar as feedstock for ethanol production. According to some studies, the replacement of forests with crops for ethanol production actually results in an overall increase in atmospheric carbon. There are also concerns about the use of fertilizers and pesticides, and land and water degradation associated with the growing of crops for ethanol.

In its comments on a European Union proposal to increase the use of biofuels, the Federation Internationale de l'Automobile (FIA) stated that biofuels are not necessarily environmentally friendly. The FIA considers that standards for cultivation and production methods for biofuels are necessary to ensure a net benefit from their use. This is particularly necessary where crops are grown on land that has not previously been used for agriculture.

So-called 'second generation' cellulosic ethanol production technologies, using materials such as wood, grasses or waste as feedstock, have the potential to dramatically improve the environmental performance of ethanol. The Massachusetts Advanced Biofuels Taskforce Report of April 2008 states that cellulosic ethanol could provide at least a 50% reduction in GHG compared to unleaded petrol over the fuel life cycle. Development of processes for second generation ethanol production is accelerating, but commercial production could be still 10 years in the future.

The RACQ advised the Queensland Premier in March 2008 that there is no environmental or climate change rationale for an ethanol mandate at this time. The development of second generation cellulosic technology is required before the use of ethanol could be sustainable. Reports from the United Kingdom and European Union also raise concerns with sustainability, and the United Nations is concerned famines are being exacerbated by the use of land for growing ethanol feedstock.

Economic Performance

Mandating the use of ethanol is regarded by the Queensland Government as an effective strategy for assisting the biofuels industry and encouraging investment in regional areas. The Australian Government Taskforce noted in 2005 that such assistance might lead to unforeseen impacts including increased grain prices for livestock, especially during droughts. The Taskforce questioned whether assisting the biofuels industry was the most cost-effective and targeted way to encourage regional development.

In its 2007 assessment of the proposed Queensland ethanol mandate, the RACQ supported the comments of the Australian Taskforce. The RACQ considered the regional benefits of the mandate would be offset by job losses, increased prices and increased costs to other agricultural industries.

The 2007 CSIRO report commented on the international impacts of biofuels production. These included: a doubling in USA corn prices during 2006-07; rising prices of eggs, milk, chicken and tortillas in China, India, Mexico and

USA; European canola oil prices doubled; and increases in cereals, starches and glucose prices of around 20% over the previous year.

The CSIRO considered it likely that a large-scale biofuel industry in Australia would bring competing markets for the feedstocks, land, water and labour for production. There would be impacts on many industry sectors especially in regional areas. The CSIRO warned that a growing biofuel industry would put pressure on the price of grain, especially in drought years, and exports may not meet demand during droughts. The promotion of ethanol fuels through targets and mandates in the United States and Europe resulted in unexpected consequences for grain prices and food supplies, according to the CSIRO.

The economic effects of an ethanol mandate were also assessed in a research paper published in January 2008 by the Australian Parliamentary Library. The paper advised that while a mandate would reduce oil imports, any diversion of feedstock from exports or increased imports of feedstock needed to meet the mandate would increase the trade deficit. In addition, the costs of creating jobs under an ethanol mandate would be high, and a mandate could also adversely affect other rural industries. The paper concluded that although a comprehensive cost-benefit analysis of an ethanol mandate has not been undertaken, no prima facie economic case for a mandate has been established.

RACQ Position

After researching the automotive, environmental and economic impacts of the proposed ethanol mandate, the RACQ considers the risks associated with the mandate outweigh its potential benefits.

There is a need for improved understanding of the benefits of ethanol blend petrol to ensure policies provide for positive outcomes. The impacts on food production and other industries must be considered in any assessment of the development of the Australian ethanol industry. It is important that the effect of droughts be taken into account in such assessments.

Nevertheless, the RACQ considers that ethanol has a place in any strategic alternative energy framework. Such a framework should include streamlined regulation to reduce costs of production and retail of alternative fuels, and targeted incentives based on outcomes (eg reduced GHG emissions, improved energy efficiency, health or regional outcomes).

There is a potential for cellulosic ethanol technology to significantly affect the economics and benefits of the ethanol industry. However, the viability of these second generation technologies is yet to be established. The RACQ considers that instead of imposing mandates, governments should support research into commercialising second generation processes for producing ethanol that will provide clear environmental advantages and significantly reduce GHG emissions.