



Biofuels Association
of Australia

C5, Level 1, 2 Main Street

Point Cook VIC 3030

M: +61 419475261

E: ghughes@biofuelsassociation.com.au

www.biofuelsassociation.com.au

ABN 99 849 691 140

24 July 2015

Fuel Quality Review

c/- Marsden Jacob Associates

Sent via email: fuelqualityreview@marsdenjacob.com.au

Dear Sir/Madam,

Re: Independent Review of the Fuel Quality Standards Act 2000

On behalf of its members, the Biofuels Association of Australia (BAA) appreciates the opportunity to provide input into the Independent Review of the Fuel Quality Standards Act 2000.

As background, the Biofuels Association of Australia ('BAA') is the peak industry body representing biofuel producers, marketers, retailers and others and has the purpose of providing leadership and facilitating the building of a sustainable and economically viable Australian biofuels industry, consistent with national and community interests and environmental standards. Formed in 2006, the BAA is proud to have major Australian industry participants as members, providing valuable input and insight across the supply chain.

The BAA works closely with its members and broader stakeholders to identify opportunities to advance the uptake of biofuels in Australia's liquid fuel market, and to lead the way in helping to educate consumers about biofuels, their use and benefits. An Australian biofuels industry has broad societal benefits in the areas of economic development, health, environment, innovation and energy security; we have provided a brief summary of these benefits attached in Appendix 1 for your reference.

Fuel Quality Standards Act 2000 Issues Paper Responses

The BAA offers the following selected comments on the issues raised in the discussion paper.

Are the Objects of the Act still relevant and appropriate?

The objects of the Fuel Quality Standards Act are to:

- (a) Regulate the quality of fuel supplied in Australia in order to:
 - (i) Reduce the level of pollutants and emissions arising from the use of fuel that may cause environmental and health problems; and
 - (ii) Facilitate the adoption of better engine technology and emission control technology; and
 - (iii) Allow the more effective operation of engines; and
- (b) Ensure that, where appropriate, information about fuel is provided when the fuel is supplied.

As was recognized by the government when this act was passed through parliament, *the transport sector is the single largest contributor to urban ambient air pollution. It is also one of the largest contributors to national greenhouse gas emissions. The nature of the problem is such that an integrated strategy, coordinating action across a number of different areas, is required to address the issue.* From the BAA's viewpoint, little has changed and the need to regulate fuels, their standards, their use and the technology and information supporting them still remains as strong today, as when this bill was passed in 2000.

As the fuel market does not bear the burden of the health and environmental consequences of its use, it is imperative that Fuel Standards are independently reviewed and enforced by parties other than those directly involved in their production and distribution.

What are the emerging Opportunities and Challenges for the Act?

As outlined in the issues paper, the International Agency for Research on Cancer (IARC) announced that it has now classified outdoor air pollution as carcinogenic to humans¹. Particulate matter was evaluated separately and was also classified as carcinogenic. The IARC listed the predominant sources of air pollution as transportation, stationary generation, industrial and agricultural emissions and residential heating and cooking. In 2012 the IARC also classified diesel exhaust as carcinogenic².

Only with coordinated action across health, environment, automotive design regulations and fuel standards can an effective strategy be put in place to deliver the best outcomes for the community and economy. This, the BAA believes, is well evidenced by actions in other jurisdictions that have used fuel quality standards as an effective tool in improving air quality outcomes.

The nature of the pollution threat from automotive emissions was well telegraphed and pre-emptive action has been taken in a number of jurisdictions globally to tighten standards both for fuel quality components as well as vehicle emissions. In 1998 the Worldwide Fuel Charter (WWFC) was first established to try and bring about an understanding of the fuel quality needs of motor vehicles and engine technologies and the promotion of a fuel quality harmonization to align with those needs. Australia still only meets the WWFC Category 2 standard for unleaded gasoline where the EU, US and many Asian nations are now either compliant with Category 4 or 5 standards³.

As the US, EU, Latin America and much of Asia are now mandating the use of biofuels (ethanol and biodiesel), typically engine manufacturers and OEMs are now producing cars which are designed for optimal performance on these fuels with respect to emissions. Many of the vehicles now produced require low sulphur fuels so as to protect the catalytic converters and other emission control devices that ensure emission standards are maintained.

The benefits of these decisions are flowing through to the statistics on mortality rates for these high population centres, which in the main saw improvements in mortality rates in the period from 2005 -2010. Australia on the other hand, which has not been lifting its fuel quality standards at the same rate, is slipping behind and is one of nine OECD countries (out of 34) to actually see an increase in Years of Lives Lost (YLL) over the same period⁴. Whilst some argue that Australia enjoys good air quality conditions compared to those in other parts of the world, the BAA believes that we should not be waiting for our air quality to deteriorate further before firm action is taken.

Biofuels contain no sulphur and also provide oxygen to fuels to assist in more complete combustion. Using ethanol blends for example provides the combined effect of utilising more efficient engines running higher compression ratios that leverage the laminar burn rate of ethanol, which in turn delivers lower particulate and GHG emissions from these oxygenated fuels.

In Europe where sulfur levels are at 10ppm, E10 blends are warranted for cars which in Australia are specified as 95 Premium Fuel only vehicles. If the base fuels supplied into Australia met the Category 4 WWFC standard (10ppm sulfur) economic benefits would also flow as the E10 fuels could meet the premium fuel specification allowing motorists to pay up to 15cpl less at the bowser. This discount would more than compensate the consumer for any loss in economy and deliver less GHG emissions at the same time.

Are Fuel Quality Standards still needed?

The BAA believes that Fuel Quality Standards are a foundation stone for ensuring that the Australian consumer receives a quality product when they fill up at the bowser.

Common fuel quality standards are a vital element in reducing the impact of transport emissions on human health, ensuring that air pollutant emissions from vehicles are optimally reduced and a single fuel market is

¹ Outdoor air pollution a leading environmental cause of cancer deaths, press release no. 221, IARC, 17 October 2013, www.iarc.fr/en/media-centre/iarcnews/pdf/pr221_E.pdf

² Diesel engine exhaust carcinogenic, press release no. 213, IARC, 12 June 2012, www.iarc.fr/en/media-centre/pr/2012/pdfs/pr213_E.pdf

³ Worldwide Fuel Charter Fifth Edition September 2013

⁴ OECD (2014), *The Cost of Air Pollution: Health Impacts of Road Transport*, OECD Publishing, <http://dx.doi.org/10.1787/9789264210448-en>

established for vehicles to operate correctly Australia wide.

As highlighted in the issues paper, the CSIRO predicts that emissions from transport are set to grow from 226 billion kilometres in 2010 to approximately 388 billion kilometres in 2050. Without strict controls this potential 50% increase in air pollutants in our city air sheds could have a devastating impact on human health.

What Options (including a preferred option) are there to meet the objects of the Act?

The discussion paper puts forward four potential options (with variants) for consideration in achieving the objects of the Act into the future. It is the belief of the BAA that if the potential health and environmental outcomes aspired to by the Act are to be achieved, a mandatory framework will have to be imposed on the fuel suppliers.

Nearly all improvements that are sought in fuel quality elements (sulphur for example), engine design or vehicle design will all come at a cost. Price is still the main driving factor in our commercial world and all players seek to provide their product (particularly commodities) at the lowest price point. Consumers still are often reluctant to pay premiums for cleaner fuels and lower emission vehicles and without a clear market signal or regulation to force the negative externalities created through the use of the fuel, improved health and environmental outcomes will remain aspirational.

The growing burden of increased health costs as a result of deteriorating air sheds and an increased network of tunnels being built to ease traffic congestion concentrating emissions, can only be effectively controlled through regulation. Other countries to which Australia would like to think it compares, now have 10ppm Sulphur as a limit in fuels whilst we still operate at a standard which is 15 times higher. Sulphur has a significant impact on vehicle emissions by reducing the efficiency of catalysts and adversely affects heated exhaust gas oxygen sensors. It is well known that reductions in sulphur will provide immediate reductions of emissions from all catalyst-equipped vehicles on the road. Yet we continue to have one of the highest allowable sulphur levels in fuel in the OECD. Why? Because it is argued the cost for our local refineries to remove it is too high and they will close, if forced to do so.

The BAA believes this argument is untenable and suggests firstly that by including biofuels as a blend using either ethanol or biodiesel would immediately lower sulphur levels by 5-20% depending on the blend and base fuel. Secondly, fuels that are being imported are being made for other jurisdictions that require lower sulphur. These fuels could be imported and blended with the low quality fuels being produced in Australia in order to meet a lower sulphur specification. This would also open the door to lower cost premium fuels in the country.

These debates however only serve to illustrate that left to its own devices, step changes in fuel quality will not occur whilst pricing signals for the negative externalities consequential to their use are not borne by the industry. Therefore the BAA supports retaining a government regulated framework for the setting of quality standards and parameters of fuels.

The BAA also supports continued regulation of the ADRs for all locally produced and imported vehicles. Vehicles today are increasingly being made to take advantage of the new fuels that are now becoming mainstream globally, namely E10, E15, E85, B5, B7 & B20. Engineering developments made by automotive companies are delivering vehicles including hybrids that can take advantage of biofuel blends and deliver improved fuel economies and lower toxic emissions. With Australia looking to import up to 90% of its petroleum needs, specifying fuels in the future that match the technologies being used elsewhere could allow Australia in the long term access to lower cost and lower emission vehicles.

Given the vast geographical and climatic conditions in Australia, it may even make sense to have varying state based standards. An obvious example of this would be the regulation of summer and winter blends or making it easier for states to pursue higher standards for health and environmental protection given the specific challenges their unique air sheds present.

Whilst the BAA does not support moving away from a government regulated framework, like all businesses the BAA believes there is much room for improving or streamlining the existing framework. Options to shift the onus of proof of compliance and move to an audit model or integrate enforcement activities with other agencies are all worthy of examination.

Other Considerations

Fuel Blends

The BAA believes that the process for establishing a new fuel blend requires streamlining. Where a blend is made up of products that in their own right already comply with a standard, then the blended product should be deemed compliant once blended. The blend specification should then simply be the reported average of each of the constituents. This should then be supported by an independent testing certificate to verify the blend standard.

Fuel Labelling

Much confusion still exists for the consumer as to what fuel their vehicle can use. As part of a comprehensive review, the BAA believes that all locally produced and imported vehicles should be labelled at the fuel cap as to their compatibility for various fuels including ethanol and biodiesel. In 2006, all local car manufacturers were requested to carry information labels on the inside of their filler caps specifying whether ethanol fuels could be used. This practice should be extended to all new vehicles sold in Australia and the fuel label should explicitly state whether ethanol or biodiesel can be used by the vehicle.

Summary

The BAA believes that the Fuel Quality Standards Act and its stated objects are of great importance in delivering improved health and environment outcomes for Australia as well as underpinning consumer confidence in fuels.

The BAA supports continued regulation by government in this area as the fuel market itself does not reflect the negative externalities caused by the use of its products and without external regulation would not necessarily deliver the best outcome for the Australian economy as a whole.

We thank you for the opportunity to contribute to this important debate and look forward to working with you on the opportunities and challenges presented by this legislation.

Yours sincerely,



Gavin Hughes
CEO
Biofuels Association of Australia



Garry Mulvay
Chairman
Biofuels Association of Australia

Appendix 1: Benefits of an Australian Biofuel Industry

Economic Development

Today more than 98 percent of the energy used in Australia's transportation industry still derives from fossil fuels. With Australia facing significant change in terms of the make-up of industries that once drove our economy, the burgeoning biofuels industry is a relatively new player, which if fostered can contribute future investment and jobs.

The BAA recently commissioned Deloitte Access Economics to undertake a study on the economic contribution of the Australian Biofuels Industry. The interim results of this report show that, net of the Cleaner Fuel Grants and Ethanol Producer Grants paid, the industry generated an economic contribution of approximately \$427 Million and provided for about 3,180 FTE jobs as a result of the industry's activities and that this could grow to \$554 Million and 4,002 FTE jobs should the industry utilise its installed capacity. Given that the biofuels industry represents just 1% of fuel sales, we believe this demonstrates the significant economic potential that this industry has to contribute to Australia's future.

The Australian biofuel production supports investment and jobs in regional Australia in communities including: Barnawartha, Largs Bay, Picton, Nowra, Maitland, Dalby, Sarina, Cressy and Tom Price. A number of projects are under consideration for the future and Australia's biofuels demand and policy settings will be key factors influencing their commercialisation. Additionally, the BAA believes that there is an opportunity for a domestic biofuels industry to provide an alternative revenue stream for the agri-sector, allowing it to strengthen its resilience to ever changing environmental and economic conditions.

Energy Security

An established biofuels industry can contribute to energy security as blending extends Australia's fuel reserves. Indeed, energy security concerns have driven many countries to introduce policies to actively encourage the development of their biofuels industry. Biofuels capability in Australia is also an area being closely watched by Defence personnel, particularly as our US allies are moving to significantly increase the use of renewable fuels in Navy vessels. Interoperability is a key factor to consider for the Australian Navy, as often shared supply chains are used for fuel.

Health benefits

Ethanol and biodiesel blends can have a beneficial impact on air quality, and therefore human health, due to the reduced pollutant gas emissions relative to fossil fuels. Air quality, particularly in and around our major cities, ports, tunnels and airports could be improved and there is opportunity for increasing uptake of biofuels to have a positive impact on health outcomes and reduce national and state health budget costs. The Australian Medical Association noted in its submission to the 2013 Senate Inquiry into the "Impacts on Health of Air Quality in Australia" that the costs associated with motor vehicle emissions alone are estimated to be between \$600 million and \$1.5 billion per annum.

Given the recent determination that there is no safe level of exposure to diesel particulate emissions, the case for change is becoming even more compelling. The OECD recently published a report at the International Transport Forum that showed with the adoption of tighter fuel standards and the greater adoption of biofuels the mortality rate had fallen by 4% globally. Unfortunately however in Australia our rate had increased by 60%, which underlines the need for the adoption of cleaner fuels in Australia.

In particular, a significant risk to human health is posed by vehicle particulate emissions, especially fine particles known as PM2.5. Many economies have taken direct action in setting their fuel standards to limit particulates through requiring biofuels to be part of the standard fuel blends.

A CSIRO and Orbital study in 2008, "Evaluating the Health Impacts of Ethanol blend Petrol", concluded that there would be a "health benefit to Sydney and Urban Australian population (Sydney, Melbourne, Brisbane and Perth) arising from a move from ULP to ethanol blends in spark-ignition vehicles", noting that the "overall quantified health benefit of using ethanol blends is overwhelmingly dominated by reductions in particulate matter".

Overall, the BAA believes that the net public health benefit of using blended fuels is positive and should be a significant consideration when analysing future policy settings to advance the uptake of biofuels in Australia.

Environment

The environmental benefits of biofuel use have been widely documented. The reduction in greenhouse gas emissions resulting from the use of biofuels and biofuel blends is closely aligned with the Government's "Direct Action" approach to climate change.

While there have been concerns due to the use of food crops as feedstocks in some countries, in Australia producers are using environmentally sustainable feedstocks from waste streams such as used cooking oils, tallow, wheat starch, molasses and sorghum. These feedstocks do not impact the affordability or availability of food within Australia.

Whilst the notion of first and second generation fuels once was central to the debate, 'Advanced Biofuels' have finally become the centre of attention, requiring fuels to be defined by their potential for lifecycle GHG abatement and their conformance to a set of sustainability criteria. Indeed, the issue of sustainability is of paramount concern to the Australian industry, and the BAA is the lead participant in Australia's involvement in the development of an ISO Sustainability Criteria for Bioenergy.

Technology and Innovation

The biofuels industry is an incubator for innovation and is the basis on which to foster new technology and R&D. Our local producers are constantly looking for ways to improve the efficiencies within their processes, via research into new enzymes or treatments to improve the yields and quality of the biofuel they produce.

Looking to the future of advanced biofuels, several Australian Universities and CSIRO have active research programs and many are at the forefront of research into new feedstocks, such as algae, cyanobacteria, sorghum, lignocellulose, pongamia and mallee. Importantly, the issue of how to manage biomass aggregation to allow cost effective processing of these feedstocks into fuel is also a critical area of required study. Leveraging Australian industries that already aggregate biomass is of course a short pathway to piloting these new technologies.

The development of a sufficient supply of renewable feedstocks is of particular interest to the aviation industry, both in Australia and globally. The key challenges remain the cost and availability of feedstocks and refining capability. The global industry is keen to find ways of producing sustainable quantities of renewable jet fuel, at an acceptable cost. This is an area where there is strong customer demand for the product, and globally, many countries are urgently looking at ways that they can take advantage of what could become a significant industry in future. Australia is well positioned to take a lead in the development of pathways to renewable jet fuel and this is evidenced by investment in local initiatives such as the Australian Initiative for Sustainable Aviation Fuel (AISAF) and Queensland Sustainable Aviation Fuel Initiative (QSAFI), along with partnerships between companies such as Qantas and Shell, and Virgin Australia, Brisbane Airport Corporation and SkyNRG (Brisbane Bio port).

For Australian biofuel production, increased investment in the development of advanced, renewable, economically viable feedstocks is critical to the growth of the industry.