

**SUBMISSION BY THE
BIODIESEL ASSOCIATION OF AUSTRALIA
AND
RENEWABLE FUELS AUSTRALIA**

Comments in response to the

**DEPARTMENT OF THE ENVIRONMENT AND HERITAGE
DISCUSSION PAPER**

STANDARDISING DIESEL/BIODIESEL BLENDS (November 2006)

JANUARY 2007

**DEPARTMENT OF THE ENVIRONMENT AND HERITAGE
DISCUSSION PAPER, “STANDARDISING DIESEL/BIODIESEL BLENDS
(November 2006)**

INTRODUCTION

BAA and RFA are currently negotiating the formation of a single biofuels industry association to be known as the Biofuels Association of Australia. The new organisation will unify industry representation, facilitate the adoption of quality management programmes and participate in the expansion of the use of biofuels in the Australian transport fuel market.

In his foreword to the discussion paper, the Minister states that the paper represents an assessment of diesel/biodiesel blends as part of a package of measures to help address market barriers and restore consumer confidence in the biofuels industry.

The Minister further states that “Wide ranging stakeholder input will help achieve fuel quality standards for diesel/biodiesel blends that meet the needs of Australian motorists and allows for optimum vehicle *and* environmental performance.

The report in its “Background” section states that the objectives of the 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;
 - (ii) facilitate the adoption of better engine technology and emission control technology;
 - (iii) allow the more effective operation of engines and
- (b) ensure that, where appropriate, information about fuel is provided when the fuel is supplied

BAA and RFA contend that the introduction of diesel/biodiesel blend standards as proposed in the discussion paper will be counterproductive to the achievement of the abovementioned objectives. They would also have a negative effect on the development of the Australian biodiesel industry at this crucial and formative stage and inhibit the industry’s innovative potential to increase the environmental performance of blended fuels.

We assert that the adoption of a blend standard will:

- Restrict the access to and limit the capacity of biodiesel to compete in the national fuel market
- Inhibit the development and delivery of increased environmental and public health benefits of diesel/biodiesel blended fuels
- Create added confusion in the marketplace regarding consumer and OEM perception of the appropriateness of diesel/biodiesel blended fuels.

BAA and RFA believe that maintaining adherence to the Australian Diesel Fuel Standard and the Australian Biodiesel Standard (B100) will motivate producers and blenders to maximise the environmental impact and health benefits of biodiesel and simultaneously address the interests of government, industry and consumers.

The environmental benefits of biodiesel and biodiesel/automotive diesel blends have been well documented. To confirm much of the overseas data Natural Fuels Australia Limited NFAL commissioned the Charles Darwin University to conduct an independent Demonstration Program of biodiesel over a six-month period in 2005/06, using B100 made from 90% palm oil and 10% soy oil meeting the *European Standard for Biodiesel EN 14214*. A summary of the results is included in Attachment B. See also additional attachments

- Newcastle City Council Biodiesel Trial Emissions Testing Program Final Report December 2004
- Camden Council Biodiesel Trial Emissions Testing Program June 2004
- Newcastle City Council B20 Biodiesel Maintenance Analysis Program, November 2006

Further, BAA and RFA contend that the comments and alternative solutions proposed by the industry in response to the DEH discussion paper will will accelerate, rather than impede, the achievement of the Minister's stated objectives.

FUEL STANDARDS

There is an Australian Quality Standard for automotive diesel fuel and also for neat fatty acid methyl esters (Biodiesel - B100).

Fuel that meets the Fuel Standard (Automotive Diesel) Determination 2001- as amended is considered suitable for use in diesel engines available in the Australian market.

Fuel that meets this automotive diesel standard is considered appropriate for use by:

- a) Department of the Environment and Heritage
- b) Australian and international diesel engine manufacturers and distributors
- c) Fuel Producers/Distributors
- d) End Users

Fuel that meets this automotive diesel standard also qualifies for fuel tax credits under the Fuel Tax Act 2006.

The Biodiesel Industry has concerns that creating fixed blend ratio standards would cause market confusion, jeopardise the current tax treatment for blends over 5% - and further destabilise the alternative fuel industry by reducing market competitiveness and closing off markets.

This situation is made worse by the phasing out of EGCS and the additional administration the EGCS entails – industry experience suggests that few if any customers have shown any interest in using the scheme.

Several Australian biodiesel producers have successfully demonstrated their ability to provide automotive diesel/biodiesel blends above 5% biodiesel that verifiably meet the automotive diesel standard. Producers also advise that they do not discount the

future potential of higher blends being developed that meet the automotive diesel standard, provide the required fuel quality for motorists and simultaneously achieve markedly higher reductions of greenhouse gas emissions.

The automotive diesel standard is a performance standard which when met deems a fuel fit for use in diesel engines. It allows for differences in the nature of crude oils used by refineries to produce automotive diesel and most petroleum diesel producers regularly seek density waivers for their products.

The industry contends that biodiesel should be considered as no different to any other feedstock used in the manufacture of a fuel that meets all the requirements of the automotive diesel standard. It is however imperative that the biodiesel used in any blend comply with the Australian biodiesel standard for B100 - *Fuel Standard (Biodiesel) Determination 2003*.

This should be guaranteed as Australian biodiesel producers do not qualify for the producer grant of 38.143 cents per litre unless the fuel they manufacture complies with the B100 standard. In addition, an excise manufacturer's licence must be held to produce biodiesel or biodiesel blends

DEH has been concerned with enforceability of the quality of biodiesel blends, and in particular those blends offered for retail sale.

The industry offers to DEH the proposal of an industry managed Quality Management System to facilitate the traceability of fuel from refinery to retail outlets and to ensure on going quality. In particular, it would ensure that only fuel complying with the B100 Australian Standard be used in blended fuels. Biodiesel industry members acknowledge quality management as one of the most important issues and the majority agree that an industry managed scheme should be enacted as soon as possible.

It is further suggested that a joint government/industry working group be established to monitor the operation of this programme, and after two years, initiate a comprehensive review of quality and management practices and standards developed in Australia and in major international markets.

TEST METHODOLOGY

In addition, the industry considers that there are certain quality parameters and test methods that could be strengthened and more appropriate test methods of evaluating the resulting blend. .

B100 tests:

- Oxidation Stability – increase to 8 hours
- Filterability – add
- Acid Number – reduce to 0.5

Blend tests:

- Oxidative Stability – change to Rancimat method as per B100
- Filterability – make consistent with automotive diesel standard test
- SimDist via GC to show up contamination

In the resulting blend, 3 characteristics for diesel become less relevant – supporting the practical adoption of waivers on these properties.

- Colour – allow greater range due to variation in feedstock colouring
- Density – allow up to the density of Biodiesel B100
- Viscosity – allow up to the viscosity of Biodiesel B100

Variations to Test Methods

Polyaromatic Hydrocarbons (PAHs) – Biodiesel interferes with this method and provides an erroneous result. We request that this parameter be reported as a calculated result derived from the PAH value of the diesel component. As there are no PAHs present in biodiesel, the result can be determined as a linear calculation.

Distillation T95 – It is our opinion that the tests method for this parameter, ASTM D86, can provide erroneous results for blends in excess of 10% biodiesel. As a consequence we request that method ASTM D1160, Distillation at Reduced Pressure, be employed to evaluate this property.

Cetane Index – This test method does not provide valid results for blends of diesel and biodiesel. There are two approaches that can be taken to overcome this.

- Should the results of the components both be greater than the requirement of 46 then the result can be reported as >46.
- Alternatively, the cetane number can be measured physically via any of the methods currently set down in the biodiesel standard.

RESPONSE TO SPECIFIC OPTIONS RAISED IN THE DISCUSSION PAPER:

(1) The industry does not support the capping of biodiesel blends at B5.

The priority is the production, and supply of a diesel/biodiesel blended fuel that is compliant with both the *Fuel Standard (Automotive Diesel) Determination 2001*, and the biodiesel component with *Fuel Standard (Biodiesel) Determination 2003 with appropriate waivers or standard modifications applied where the benefits of biodiesel are evident*.

(2) The industry does not support the introduction of B5, B20 or any other blend standard at this time as

- (a) the principal concern of the motorist is that the fuel they are buying is suitable for use (fit for purpose) in their diesel engine; and this is assured by the diesel fuel standard.
- (b) their engine manufacturer supports the use of the fuel, and OEMs have already accepted diesel fuel that complies with the Australian

Logically it follows that there is no need for development of test methods for B5 or B20 blends.

The industry is open to change, but in a manner that is consistent with evolving international developments.

Vital work is underway on blend levels in the EU and USA, formatting domestic standards without consideration of these activities is premature.

(3) **The Industry supports the granting of a density waiver for blends exceeding B5 and from compliant blendstocks.**

This is in recognition of the contribution of biodiesel in mitigating the Particulate pollution concerns that led to the determination present density parameter in the automotive diesel fuel standard,

(4) **There is no need for mandatory labelling of any biodiesel – petroleum diesel blend containing up to 5% biodiesel** as it can be considered merely as an additive.

(5) **For blends containing in excess of 5% biodiesel, conforming to the automotive diesel standard**, the following labelling should be MANDATORY for retail distribution.

THIS FUEL CONTAINS A BLEND OF PETROLEUM DIESEL AND RENEWABLE BIODIESEL AND COMPLIES WITH THE AUSTRALIAN DIESEL FUEL STANDARD - Fuel Quality Standards Act 2000 (as amended).

This labelling should be prominently displayed at the point of sale.

(6) **Non compliant blends**

There may be incidences where, for various safety or environmental reasons, users may wish to use higher blends which do not meet the automotive diesel standard. Blends that do not meet the diesel standard cannot be marketed as Diesel and if retailed, signboards, pumps and price boards must clearly indicate that it is a Diesel/Biodiesel Blend or B100. The label suggested in (2) above cannot be applied to fuels in this category.

(7) **Industry supports the establishment of a Government, industry, and stakeholder committee to monitor standards and performance issues.**

The Committee will conduct a review within two years and assess the future of the domestic market in light of the progress on the establishment of international standards in Europe and the United States.

ATTACHMENT A

This submission is made on behalf of the Biodiesel Association of Australia and Renewable Fuels Australia and is supported by the follow members of the Australian biodiesel industry.

Australian Renewable Fuels
Axiom Energy
Biodiesel Industries Australia
Biodiesel Network
Biodiesel Producers
Biosel
Cargill
Eco-Tech Biodiesel
Energetix (Smorgon Group)
Enffue Biodiesel
Elders
Freedom Fuels
Gardner Smith
Gull Petroleum
Intertek Caleb Brett Laboratories
Midfield Petroleum
National Biofuels Group
Natural Fuels Australia Limited
Pacific Biodiesel
Riverina Biofuels
Rockdale Beef
The Biodiesel Station

We would further advise that a number of the above companies may have made individual submissions to the Department of the Environment and Heritage.

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ATTACHMENT B

NFAL commissioned the Charles Darwin University to conduct an independent Demonstration Program of biodiesel over a six-month period in 2005/06, using B100 made from 90% palm oil and 10% soy oil meeting the *European Standard for Biodiesel EN 14214*, imported from Spain. The cold filter plugging point (cfpp) was + 3 degrees C. The participants included buses from Darwin Bus Services, Darwin City Council vehicles, road trains, trucks, loading machinery, and light vehicles.

The Program showed for **B100** reduced tailpipe emissions of –

- up to 58% for carbon monoxide
- up to 41% for total hydrocarbons
- up to 53% for particulate matter (black soot)
- up to 77% for exhaust smoke opacity,

and for **Blend B20**, reduced tailpipe emissions of

- up to 15% for carbon monoxide
- up to 17% for total hydrocarbons
- up to 23% for particulate matter (black soot)
- up to 29% for exhaust smoke opacity

In addition, a 1.2% increase in fuel consumption for Blend B20 was recorded in dynamometer testing, but in road use, changes in fuel consumption attributable to using biodiesel were considered negligible. Participants were unable to detect any changes in the performance of the vehicle, with some drivers perceiving improved performance. No reliability issue in any of the trialled equipment was attributed to biodiesel use, lubricating oil sampling and analysis did not reveal any adverse effect on oil condition, viscosity, or engine condition, and no case of filter plugging due to biodiesel was encountered. The cfpp of the blend, using a control diesel with a cfpp of – 3 degrees C, was – 2 degrees C. No cfpp depressant additives were used. This reflects overseas experience wherein cold flow properties of blends up to B20 are largely influenced by the cold flow properties of the underlying petroleum diesel.

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