

# EN 14103 Test Method - Submission by the Liquid Biofuels Interest Group of the Bioenergy Association of New Zealand (BANZ)

17<sup>th</sup> June 2009

## 1. Introduction

This paper sets out the views of the Liquid Biofuel Interest Group (a sub-group of the Bioenergy Association of New Zealand [BANZ]) on the proposals for the amendment to the current testing method for methyl esters (a proposed amendment to the EN 14103 Test Method).

This issue is of interest to BANZ because it is of concern to many of our members who while aiming to deliver a top quality product are frustrated in their efforts to do so because of a test method that is not fit for purpose. The producers are specifically producing biodiesel from tallow.

In order to enable those biodiesel producers in New Zealand who use tallow as their source material to benefit from the recently introduced Biodiesel Grant Scheme it is imperative that a modified test method is approved as a matter of urgency.

## 2. The BANZ Liquid Biofuel Interest Group

The Bioenergy Association of New Zealand (BANZ) has been established to promote and coordinate the development of a bioenergy industry in New Zealand. BANZ provides a central focus point for liaison with Government agencies, the dissemination of information amongst the industry and long-term positioning of bioenergy into New Zealand's energy strategy

Members include anyone with a commercial interest in bioenergy - sawmillers, wood processors, energy suppliers, energy researchers, consultants, manufacturers and investors.

More specifically, the **BANZ Liquid Biofuel Interest Group** is one of 4 Interest Groups established by BANZ. This Group focuses specifically on the interests and activities of those engaged in the production, sale or research in liquid biofuels.

Our Members represent a cross section of key players in the New Zealand liquid fuels market with a commercial interest in liquid biofuels. They include research and development organisations, academic institutions, biofuel producers and manufacturers, biofuel retailers, consultants, equipment manufacturers, biofuel investors & entrepreneurs and organisations with an interest in biofuel resources (for example, tallow producers in the Renderers Group of the Meat Industry Association).

The Liquid Biofuels Interest Group was strengthened in November 2008 by merging with the New Zealand Biofuel Manufacturers Association (NZBMA). The Interest Group has a Committee and a Convener. The Group Convener sits on the BANZ Board.

We promote liquid biofuels in New Zealand and provide information and resources on biofuels for our Members, for the general public in New Zealand and for potential overseas investors through our web-pages ([http://www.bioenergy.org.nz/liquid\\_biofuels\\_home.asp](http://www.bioenergy.org.nz/liquid_biofuels_home.asp)).

We expressed our full support for the Government's recently announced Biodiesel Grant Scheme (see Appendix 1).

### 3. EN 14103 Test Method – Key Problems

Problems have arisen with the EN 14103 test method largely because of its application to a sample composition outside its scope. EN14103 is the gas chromatograph method employed to determine the FAME content of biodiesel. The method was initially developed for the analysis of vegetable based biodiesel. The method employs an internal standard, methyl heptadecanoate (referred to generally as a 'C17' marker), to quantify the methyl ester and linolenic acid content of the biofuel. The method is unusual as it does not employ a calibration curve but rather relies on peak area normalization and linear detector response.

Vegetable oil based biofuels do not contain the C17 internal standard and are therefore not affected by this test method but animal based biodiesels have been found to contain naturally occurring C17 methyl ester. The result is that erroneously low results are determined because the size of the internal standard peak is inflated by the natural C17 methyl ester. This is often referred to as C17 marker masking.

### 4. EN 14103 Test Method – Proposed Revision

We understand the test method on which the one page consultation is based is that, word for word, provided to the Ministry of Consumer Affairs by IPL - Independent Petroleum Laboratories, Whangarei.

As the failures of the current test method are of international concern, BANZ would like to be sure that any amendment to the test method should be in line with international amendments.

We note that the paper sets out only laboratory methodology changes and is without commentary in terms of justification or explanation as to the need for the changes and how the amendment proposed addresses these concerns and indeed to what level of confidence C17 measurements will now be made. We note also that it is disappointing not to see supporting evidence in line with Request Criteria (v.) Guidance for Gaining Approval of Alternative Test Methods<sup>1</sup>

*evidence that the alternative test method is at least as good as the current test method. This should be supported by test data and expert opinion.*

Our assumption is that such evidence was indeed provided.

If indeed the changes proposed are in line with the Mittlebach method and those recently adopted in Australia then we support the amendment.

While there are merits in a concise consultation document, in this case we believe there would also have been merits in an accompanying commentary as to how the changes proposed will adequately address the failings of the current test method.

Finally our members have raised two further issues which we believe warrant further consultation at a future date. The issues are as follows:

- Reproducibility factor of 3.10% and Repeatability factor of 1.80% for Methyl Esters content should also be considered for incorporation into the Minimum Standard (96.5%) set Methyl Esters in Biodiesel.
- C8 to C12 fatty acid esters should also be consider for inclusion in the proposed modification to the method EN14103 as this may affect some specific cases.

<sup>1</sup> <http://www.consumeraffairs.govt.nz/measurement/fuel-quality/for-petroleum/acts-and-regulations/regulations/guidance4gaining.html>

## 5. Summary

The Liquid Biofuel Interest Group is an Industry Association representing key players in the New Zealand liquid biofuels sector. We have expressed our support for the Government's proposed new tax incentive to replace the now repealed Biofuels Sales Obligation. We believe that this is an equitable approach which supports all biofuels.

However, many of our members are engaged in the production of biodiesel from tallow based sources and they may be at a disadvantage under the Scheme because of the difficulties with the EN 14103 test method as it is currently.

We recommend therefore that in the light of recent proposals from IPL to amend the EN Test Method, we encourage the Government to approve and adopt these proposals. We note the merits of any amendments being proposed being in line with international amendments.

We commend the Ministry for the swift action it has taken in addressing these issues given the commencement of the Biodiesel Grant Scheme.

## Appendix 1 – BANZ Media Statement (20 May 2009)

Biofuels “boost” welcomed – it’s the strong signal that will give the sector the confidence it needs to grow

The Bioenergy Association of New Zealand (BANZ) welcomed the news yesterday from Energy Minister Gerry Brownlee on the biodiesel focused grant aimed at boosting the use of biofuels in New Zealand.

Speaking yesterday, Brian Cox, Executive Officer of the Bioenergy Association gave his full support to the news.

Mr Cox said, *“We have been waiting anxiously for an announcement for some time now from the Minister so we welcome this news. It’s the confidence that the sector needs to continue to grow and secure future investment. The Biofuels Sales Obligation was repealed back in December last year and we flagged back then of the need for something to fill the void. On the face of it this announcement looks like great news for biodiesel producers in New Zealand. In terms of support for the bioenergy sector by government it’s a good start to lifting the recognition that bioenergy can provide a significant part of NZ’s energy supply.”*

Mr Cox added, *“We indicated to the Minister’s Office earlier this year of our commitment to work with him and his Officials to ensure that the opportunity presented by a New Zealand grown, sustainably produced biofuel will create employment and value-add local resources. Sustainably grown biofuels is what New Zealand is providing and that is what this grant appears to be rewarding, so it good news. The players in the NZ biofuels industry are well positioned to utilize the quantities of sustainable resources readily available in our country and have already demonstrated a responsible leadership position to ensure that liquid biofuels is indeed the NZ advantage. Our members have had a nervous few months but they are already indicating this grant will help them secure jobs and invest in the medium to long term in plant and equipment.”*

*The major industry players have today indicated that the prompt action by the Minister has provided immediate security to 40 direct jobs and 200 indirect jobs (using a x5 multiplier effect which is common in the manufacturing sector) The implementation of investment plans will provide a further 100 jobs in the first year. It is expected that the industry will grow to provide at least 55 direct jobs in year 3.*

*The specific condition of the Grant Scheme supporting only quality biodiesel that complies with the government’s regulated fuel quality specifications is welcomed too as this will ensure the growth of a robust industry that consumers will have confidence in.*

Mr Cox added, *“Another key issue for our members was the need to find a mechanism to equalise ethanol’s advantage in the marketplace. The Minister has said this Scheme is designed to do that so that’s another strong positive”.*

*“New Zealand is fortunate that it has a wide range of sustainable sources of bioenergy and many of these are by-products of other processing. We need to focus our attention on utilising our energy riches to maximise our economic and social wellbeing. Indigenous production of biodiesel is a good start but we can get similar value from biogas, production of bioethanol, and wood fuels.”*

In its recent Position Statement on the Sustainability of NZ biofuel’s the BANZ Liquid Biofuel Interest Group set out its view’s on the advantage that biofuels offered to New Zealand. Key advantages identified were as follows:

- **Enhanced security of fuel supply** – indigenous supply of fuel - security of supply especially for New Zealand essential services in times of need.
- **Value added New Zealand raw materials that are currently exported** – the processing of these resources on New Zealand soil brings economic growth advantages by reducing our reliance on imports and providing a increased local taxation base

- **Employment "green collar" jobs** – the job creation potential is both direct and indirect via multiplier effect.
- **Value maximisation of land** - improved utilization of land and value creation within rural communities eg. rotational oilseeds, salix based cellulose to ethanol. Some biofuel crops may well also utilize otherwise poor quality and low value land thus providing increased value for land owners.
- **Reduction of 'wastes' to landfill** – many current bio-waste going to landfill are indeed bio-resources - dairy industry waste lipid streams, grease trap waste and some forestry waste is currently land-filled and yet could be converted into good quality biofuels
- **Mitigating Kyoto agreement liability due to reduced net GHG emissions from transport** - Reduced CO<sub>2</sub> emissions by direct displacement of fossil fuels
- **Positive health impact** - grass roots improvements in workplace health, biofuels produce far less emissions and don't contain carcinogens and harmful polyaromatic cyclic hydrocarbons (true for both biodiesel and bioethanol). One only needs to refer to the Brazilian experience from using bioethanol and how it has helped to clean up the air in their cities.

From an international perspective, the advantages that investment in liquid biofuels offers to New Zealand are also economic in nature – international investment opportunities), and they are reputational (evidence to support the '*clean green*' image New Zealand likes to portray abroad').

- **Investment in R&D and biofuel manufacturing** - developing an industry platform for the eventual deployment of 3rd generation technologies, i.e. establish a proven track record of capability that would provide for future investor confidence, growth of a strong knowledge base and enhanced skill set.
- **Tourism growth by reinforcing the NZ "Clean & Green" image** – In this respect several New Zealand tourism focused companies are already leading the way (Air New Zealand for example). The potential to actively promote New Zealand as an eco-tourism destination (eg. Great Barrier Island) is significant as interest in eco-tourism is seen around the globe. The fishing and marine tourism industries are very good examples of this. Using a fuel that, if spilled, is essentially fish food is a huge advantage in our environmentally sensitive places.

Further details on the BANZ Liquid Biofuels Position Statement submitted to the minister in mid March – "***The Sustainable Production and Use of Liquid Biofuels in New Zealand – Advantages to the New Zealand Economy and a Proposed Tax Incentive to Facilitate Market Growth, 13 March 2009***", can be found [here](#).

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