

AA Submission: Biofuels Sales Obligation (20 Oct 2006)

20 October 2006

Enabling Biofuels Project Manager
Environment Group
Ministry of Transport
PO Box 3175
WELLINGTON

Dear Sir/Madam

BIOFUELS SALES OBLIGATION

Introduction

The New Zealand Automobile Association (NZAA) welcomes the opportunity to provide comment on the Biofuels Sales Obligation (BSO) discussion document.

As an organisation representing over 1 million vehicle owners and drivers in New Zealand, we pay close attention to any proposals that may impact upon the use and cost of operation of motor vehicles. As such, our submission on the BSO focuses on issues which may affect motorists directly.

From the outset, we would like to reiterate the NZAA's previously-stated position on renewable fuels, which is that we support the progressive uptake of biofuels, led via a sales target mechanism. The NZAA recognises that biofuels are one way of gradually reducing New Zealand's dependence on imported non-renewable oil, thereby providing greater security of supply. We also acknowledge that biofuels can contribute to a reduction in particulate emissions and greenhouse gases, more so for biodiesel than bioethanol. Against that background, we accept that there is a level of public support to adopt biofuels, despite what we believe is the public's limited understanding of the technical and infrastructural issues, and lack of practical experience of biofuel use in the New Zealand environment.

In terms of mandating targets for biofuels, there are several fundamental consumer rights issues, regarding the quality of the potential fuels and compatibility with the current vehicle fleet. There is an onus on Government and the oil companies to ensure that fuels sold are of merchantable quality and fit for purpose, and that information and an education programme surrounding new fuels leaves consumers clearly informed with regards to vehicle suitability, effect on warranties, fuel consumption and, most importantly, costs.

Therefore, our support for introducing biofuels is conditional, subject to the following provisos:

- that an effective and efficient procedure is established to monitor, regulate and enforce the level of biofuel blended into existing fuels;
- that any new biofuel or biofuel blend must be clearly labelled as such at the point of sale, and that motorists are not confused by a range of differing biofuel blends;
- that an appropriate information campaign is provided (by either the regulator or the retailer) to inform consumers of the full benefits, costs and risks associated with biofuel or biofuel blends, and their possible impacts on a comprehensive list of motor vehicles in the NZ fleet;
- that there is agreement from vehicle manufacturers that the use of any biofuel blends will not void the warranty conditions of vehicles;

- given that Japanese used imports make up a large proportion of the NZ fleet, it would be inadvisable to introduce a blend higher than that recommended in the country of origin (the Japan Automobile Manufacturers Association only recommends a 3% ethanol blend);
- that there is no increase in the cost of motoring or a reduction in vehicle performance (EECA research and our own understanding of members confirms a willingness to embrace biofuels, but not if costs are increased at the pump);
- there is extensive pre-testing of any biofuel blend on a range of large fleets before public application; New Zealand motorists should not be used as the testing ground.

We circulated details of the BSO for comment to our 17 District Councils. The AA District Councils are representative of the membership and deal with policy issues. Feedback from our District Councils has been used to inform our submission which is detailed below. We hope that you find these helpful, and welcome the opportunity for further input.

Summary

After reviewing the BSO and supporting consultants reports prepared for the MoT, and considering feedback from our District Councils, the NZAA's conclusion is that we cannot support the Biofuels Sales Obligation as it is currently proposed. Amongst our reservations, which we address separately below, is the key plank of using a penalty structure to *enforce*, rather than *encourage*, the introduction of biofuels into the New Zealand marketplace, which we believe will ultimately be at the motorists' expense. We believe New Zealand should be an adopter of internationally-proven biofuels and sale structures, and not a developer, and that we should take a cautious approach to adoption so as to minimise the cost impact on motorists.

Our analysis concludes there are numerous barriers to the introduction of bioethanol, and maybe this should be deferred until experience with second-generation cellulose bioethanol's is well-proven internationally, and the profile of the New Zealand fleet can support their use.

Cost and vehicle compatibility issues notwithstanding, the NZAA would be prepared to endorse a less penalty-driven BSO with extended timetables and reduced sales targets that could be met as a first stage with the introduction of only one type of biofuel, namely **biodiesel**. Even then, there are still issues with tallow-based biodiesel regarding winter performance, compatibility with agricultural or marine engines, supply and storage, and we cannot help but question whether the moderate mitigation of emissions through limited biodiesel use could not be better achieved through other, less fraught, means.

Key issues for motorists

While the introduction of biofuels poses significant issues for fuel companies, especially in terms of infrastructure and associated costs, ultimately the NZAA's concerns revolve around how these costs will translate into increased expense for motorists in taking up biofuels, as well as issues regarding vehicle compatibility, which is crucial to motorists' acceptance of biofuels, and the likelihood of the BSO targets being met.

Cost

The NZAA is concerned that motorists will be forced to pay more for biofuel-blended fuels (both petrol and diesel – some oil company estimates are an extra 5 cents/litre). At the recent MoT workshop in Wellington on the BSO, most industry participants present believed that biofuels would cost more. This is contrary to the public's understanding, and statements in the media which have suggested that biofuels could be the answer to rising crude oil prices.

We note the results of the survey by UMR Research for EECA¹ which showed that 35% of drivers surveyed would be prepared to pay more for biofuels if it was **3 cents per litre** more than their current fuel, but that 68% would be likely to use it if it was priced the same.

Conversely, bioethanol blends in other countries are often priced lower than regular unleaded petrol (to reflect the lower energy content), such as in parts of Australia where E10 is 3 cents per litre less, thereby stimulating and supporting uptake.

The NZAA believes such price differentials are unlikely to be enjoyed in New Zealand, and it is expected that the true cost of bioethanol blends would be higher due to the sheer cost of developing a supply infrastructure, let alone refining bioethanol from local feedstocks (for which there is no evidence they cost less than crude to refine). As the BSO estimates there are only limited supplies of whey, the expectation is that bioethanol will need to be imported to meet the sales obligation, yet this will need to be blended to local specifications, further compounding the likelihood of higher pricing and reducing its commercial viability.

This poses the risk that, in the case of petrol blends, oil companies will cross-subsidise the cost of a bioethanol blend (which, if introduced, would likely be 91 octane) across unblended octanes (i.e. 95 and 98) so that blended fuel price will be attractive. This means the higher cost of introducing bioethanol will not only be borne by consumers of biofuels, but owners of vehicles which run on the higher octane, or who are forced to switch to the higher octane if their vehicle is not compatible with 91-octane bioethanol. Aside from imposing at least an additional 5 cent per litre cost, such vehicles tuned for 91 octane will need to be re-tuned for the higher octane, all additional expenses for owners despite not consuming bioethanol blends.

Such cost increases will also contribute to inflationary growth, which impacts on the entire economy, further compounding the effects we have recently seen with rising fuel prices. It seems incongruous that one of the goals of biofuels, to reduce our dependence on imported crude oil, could lead to more, not less, price increases. Consideration could be given to offsetting these increases with reductions in petrol excise of the same amount.

Additionally, biofuels have a lower energy content than mineral fuels, and thus are marginally less economical (about a 3% loss for E10, admittedly negligible for B5). This adds further costs to motorists in that they will be consuming slightly more fuel to travel the same distance.

We believe biofuels should be economically viable and that motorists should not have to pay more to support a Government initiative. Neither should motorists have to pay in the event oil companies fail to meet their obligations under the BSO, which we believe will occur if they try to recover the very high non-compliance penalties from consumers.

The NZAA also questions whether the BSO is the most cost-effective way of mitigating emissions, noting that some bioethanol feedstocks (which may be the raw source of imported biofuel) have a high energy input and are inefficient without subsidisation. Reducing emissions and our dependence on crude oil imports can be achieved through other, less imposing means, such as stricter standards for used-import vehicles, in-service emissions testing, encouraging the purchase of fuel-efficient vehicles, provision of information to consumers (economy labelling, www.fuelsaver.govt.nz website), driver training, and normal market pressures.

Compatibility

Another key issue for motorists is vehicle compatibility with biofuel blends.

In respect of biodiesel-blended diesel, the NZAA accepts that a 5% blend (B5) is most likely (indeed, no greater blend is currently permissible for retail consumption), and that it is

¹ *Biofuels Research, a Qualitative and Quantitative Study*, UMR Research, March 2005, p. 38

compatible with the New Zealand fleet (although we note in Australia that not all manufacturers or importers endorse its use, which could influence public opinion here). However, there are some concerns over the winter performance of tallow-based biodiesel (the cold flow plugging point) which need to be ironed out before retail sales commence. This issue will affect when and where biodiesel blends can be sold (and at what percentage), which will affect the volume of biodiesel that can be sold each year, and whether the BSO target can then be met.

With respect to bioethanol, there is some conflicting information with regard to vehicle compatibility, and indeed, we understand some manufacturers only endorse bioethanol subject to fuel line components being periodically replaced.

We cannot stress how important it will be that motorists are well-informed about the compatibility of their vehicle, and that this information is clear, consistent, reliable, and addresses liability issues in the event of vehicle failure through using biofuels. The NZAA expects to play a key role in the dissemination of information to the public, and wishes to work closely with the MoT on this issue.

It is generally acknowledged that vehicles older than 1986 (e.g. carburettor or mechanical fuel-injection) are not compatible with bioethanol, while many used-Japanese imports manufactured since then are only compatible with 3% bioethanol blends. However, there will be exceptions, and hence information on all models registered in New Zealand will need to be provided, in much the same way as during the campaign to introduce unleaded petrol.

In this context, compatibility has only been considered in terms of engines, but there is also the issue of compatibility with fuel lines and components (both for petrol and diesel). While the engine may be compatible up to a certain blend percentage, does this also apply to after-market equipment, or will vehicle manufacturers only endorse vehicles fitted with original equipment? How will motorist be able to check? Further, what consideration is being given to standards for replacement parts to ensure they are biofuel-compatible? Will the suppliers or installers of these parts accept liability if the parts or engines fail through the use of biofuels?

The potential for motorists to be denied warranty coverage related to the use of biofuels sold at the pump is of significant concern to the NZAA. Thus we are concerned that individual vehicle owners could end up carrying the cost of introducing mandated biofuels.

If the Government mandates a particular fuel, then the oil companies are no longer liable for the product, and neither are the vehicle manufacturers liable for the vehicle. The NZAA would look to the Government to protect the interests of individual consumers if it mandates the introduction of biofuels, especially if Government agencies condone the use of blends above that endorsed by manufacturers (e.g. E5 instead of E3 in Japanese-imports).

The NZAA is acutely aware of the considerable consumer issues and problems which followed the phasing out of leaded petrol in New Zealand in 1996. To not learn from those mistakes would be an avoidable catastrophe.

Finally, long-term provision will need to be made for the portion of the New Zealand fleet which will never be bioethanol-compatible, such as enthusiast and vintage vehicles. We recommend the Government mandates the availability of 100% mineral 95 octane.

Bioethanol

It is the NZAA's opinion that the majority of motorists, if accurately advised about bioethanol blends, would be reluctant to use them at present unless the price was competitive and there were guarantees about vehicle warranties. Based on our analysis of costs above, we doubt that bioethanol blends will be priced the same or less than regular unleaded, rendered further

unlikely by the penalty-driven sales target rather than subsidies, unless the oil companies artificially retain the price differential between octane blends (by cross-subsidisation).

Furthermore, we believe any bioethanol blend offered on the local market should permit the maximum number of petrol-engined vehicles to use it. Based on the New Zealand fleet profile, with a large number of Japanese-imports (at least 53% of the fleet, according to TERNZ²), many which are only E3-compatible, then this is the only blend the NZAA could potentially endorse introducing initially. However, we question whether the level of sales this equates to would be enough to meet the BSO sales targets (including biodiesel).

The fact that no oil company has launched a bioethanol blend since they were permitted under the PPSR's would seem to indicate that the oil companies have assessed bioethanol as neither economic nor attractive to consumers, without some form of incentive. A penalty to enforce their introduction when it is not economically viable to do so can only but add to costs for motorists, and is still no guarantee that they will use it (especially if motorists can choose between, say, bioethanol-blended 91 octane and unblended 95, which is one of our minimum conditions), further reducing the share of the BSO that could be met by bioethanol sales.

The NZAA also expresses concern over other issues which further marginalise the viability of introducing bioethanol onto the retail market:

- The hygroscopic nature of bioethanol means extreme care needs to be taken when bioethanol-blended petrol is used where water may be present in the fuel system. This is particularly important when a bioethanol blend is used for the first time, but also poses issues for vehicles which stand for some time (especially if parked outside in cold temperatures when condensation can form). Likewise, there are storage issues when kept for non-automotive engines (e.g. garden machinery) and the risk that damage will be caused to this equipment by the presence of water;
- The requirement to store bioethanol blends in double-skinned tanks poses the risk that marginal, provincial or rural, service stations will be forced to close as the cost of replacing single-skinned tanks with double will be too high for the return (according to Hale & Twomey³, only 22% of service stations have double-skinned tanks in place). This will reduce competition in provincial centres, possibly leading to higher costs for consumers, but more importantly reduces availability to consumers and could impact on the economic viability of rural communities.

Emissions mitigation for biodiesel is also superior than for bioethanol (in that diesel produces more harmful emissions than petrol, meaning more harmful emissions would be displaced by using biodiesel). As a result, according to the NZIER⁴, "the cost of reducing vehicle emissions through biofuel blends is higher per tonne of emission reduced in the case of ethanol blends compared with biodiesel blends. In the case of emissions of particulate matter...the cost of each tonne reduced from ethanol blends is typically hundreds of times greater than cost per tonne of emissions reduced from biodiesel blends."

Furthermore, the emission mitigation benefits of second-generation cellulose-based bioethanols are superior to the current generation which would be sold in New Zealand. These generations of biofuels offer much higher levels of CO₂ abatement at much lower cost⁵. Therefore we consider the development of a bioethanol retail infrastructure could be deferred until second-generation biofuels are well-established, and the NZ vehicle fleet is compatible.

² *Risks to vehicles and other engines*, TERNZ, report prepared for MoT, April 2006, p. 12

³ *Biofuels Distribution Options*, Hale & Twomey, report prepared for MoT, March 2006, p. i

⁴ *Mandatory Transport Biofuels*, NZIER, report to MED, November 2004, p. 6

⁵ *Review of CO₂ Abatement Policies for the Transport Sector*, report to the European Conference of Ministers of Transport, January 2006, p. 7

For these reasons, the NZAA does not support the retail introduction of bioethanol at this time, and therefore that the BSO targets, through to 2012, should be lowered so that they can be met by biodiesel sales only (at a B5 blend).

We do accept that there may come a time when bioethanol can be viably introduced into the New Zealand market, and we support initiatives to encourage this. These could include only permitting the importation of vehicles that are compatible with blends up to E10, for example. If these moves are introduced now, then eventually the fleet profile will be at a desirable level to run on blends greater than E3 (but unlikely within the current BSO timetable), thereby representing a more attractive proposition for oil companies. This will also afford more time to develop the necessary infrastructure, and feedstock supply. Other initiatives could include promoting the sale of flex-fuel vehicles to large fleets (e.g. Government fleets like the Police) in major centres like Auckland, thereby justifying the cost of setting up a local E85 or E100 supply infrastructure.

Finally, we believe that if bioethanol is introduced, the BSO should mandate only one retail blend, and not leave this decision to oil companies as it could create confusion for motorists, especially for vehicles compatible with lower blends only. That is, if competing companies offer E5 and E10 blends for example, there is the risk that a consumer will mistakenly use an E10 blend in an engine which is only E5 compatible. Given the importance of providing clear, consistent information to consumers, it is better that the assessment of vehicle compatibility is based on the availability of only one retail blend. Since the oil companies are not permitted to collude and agree on one blend nationally, yet it would be undesirable for them to introduce incompatible blends, this decision should be made by the Government. This would also provide greater certainty for developing a supply infrastructure.

Biodiesel

As we have indicated above, the NZAA believes the introduction of biodiesel onto the New Zealand market is a more viable proposition, our concerns about whether sales volumes can meet the BSO targets notwithstanding. However, international research into the effects on engines of biodiesel has identified the following issues:

- tallow-based biodiesel requires special care at low temperatures to avoid excessive viscosity and loss of fluidity. Additives may be required to alleviate this and deposit formations (which are higher for biodiesel), but what are the environmental impacts of more additives and detergents to address these issues with tallow ?;
- like bioethanol, biodiesel is hygroscopic, which means it requires special care in storage and handling to prevent water content and the consequent risk of corrosion. This is especially an issue for engines which stand for long periods, and for non-automotive diesel engines. Similarly, there will be long-term storage issues for private installations;
- non-automotive diesel engines, such as agricultural machinery, may not be biodiesel-compatible, and yet it is unlikely that two blends of diesel (mineral and biodiesel) will be offered for retail sale. We would only expect a biodiesel blend (up to 5%) to be sold, thereby creating warranty/liability issues with incompatible non-automotive engines;
- is tallow-based biodiesel more susceptible to the 'diesel bug', and will yet more additives be required to offset this ?

The proposed Biofuels Sales Obligation

The NZAA is concerned the proposed sales targets, as percentages of total annual combined petrol and diesel sales in years 2008-2012, are set too high, and cannot be met within the timeframe. While the BSO proposes the targets in Year 1 and 2 (2008 and 2009) could be rolled over into the following year for a small penalty, we are unconvinced that the infrastructure (be it retail let alone feedstock supply and refining capability) will be in place in time to meet these looming deadlines. Furthermore, the targets do not include a *force majeure* clause,

meaning fuel suppliers (and ultimately motorists) will be penalised for factors outside their control which legitimately prevent the BSO from being met (in the case of some bioethanols, crop failures, for example).

Industry sources have also suggested that the BSO has overestimated the available supply of tallow that is suitable for conversion into biodiesel, and therefore consideration should be given to reducing the BSO target in line with industry estimates once these can be accurately determined (following the set-up of a supply and refining infrastructure).

As we previously commented to the MoT, the NZAA prefers an incentive regime, e.g. subsidies tied to a sales target, to encourage the uptake of biofuels, much like those adopted in other jurisdictions to facilitate their introduction. It is only now, after biofuels markets have been well established in those countries, that they are moving to a penalty-based sales target as proposed here.

We believe a positive incentive will help oil companies overcome the sizeable barriers to entry, while leaving the Government flexibility to phase out subsidies as biofuels become economically viable against mineral fuels. It will also reduce the potential of a consumer backlash against a Government-mandated change.

Finally, the NZAA considers that, if the purpose of introducing biofuels is to mitigate emissions, then the levels that might be achieved with low blends could be met through other means, i.e. by restrictions on used imports, in-service emissions tests, fuel-efficient driver training etc., and within the same timeframe.

Questions on the obligation

The Biofuels Sales Obligation raises a number of other questions, which we have answered below (where these have not been addressed above):

1. *Are the obligation levels, described as percentages, achievable ?*

No, we don't think they are, taking into account that biodiesel blends cannot be sold nationwide, year-round, and excluding bioethanol which we consider is uneconomic to introduce.

2. *Is the timing and rate of change of the obligation, when it starts and how fast the levels change, appropriate ?*

No, we consider the obligation is commencing too soon and should allow more time for the development of a local feedstock supply and refining infrastructure, thereby reducing the need for imported biofuel. In the meantime biofuel sales could commence on a limited trial basis in certain controlled fleets, providing evidence to the public of their reliable application. The rate of change may be appropriate but should be reviewed annually against available biofuel supplies, demand, and external factors to ensure it can be met.

3. *Do you agree that the obligation gets calculated based on petrol and diesel sales of year x and biofuel sales of year x must meet the obligation? Or, would it be better if the obligation was calculated based on petrol and diesel sales of the previous year i.e. year x-1.*

We support the latter, i.e. that the obligation target for individual oil companies is known, based on total sales volume in the previous year.

5. *Do you agree with the proposal to allow rollover with minimal penalties for the first two years (2008 and 2009) ?*

We support the rollover option, but consider the start date of 2008 (or 2009) too soon, and that this should be put back, but still with the option of a rollover.

6. *Do you agree with the proposal to allow trading of the biofuels obligation ?*

Yes, we support trading.

9. *What do you think about the suggestion that, in addition to a financial penalty for non-compliance, that any shortfall in meeting the obligation in a particular year (compliance period) is added to the level of obligation the following year (compliance period) ?*

We do not support this as we have reservations that the target levels can be met, and if they aren't it may be for any number of legitimate reasons which might not be able to be overcome in the following year. Our view is that the obligation for the following year should be reviewed based on the external influences which led to the current years' sales target being achieved or not.

13. *What do you think about the possibility of having a separate sales obligation for bioethanol and for biodiesel, rather than the proposed 'biofuels sales obligation' ?*

We do not support separate obligations, however at this time bioethanol should be explicitly excluded from the BSO, and not included until the BSO is reviewed and the New Zealand fleet profile at a sufficient level to support its introduction.

Biofuel quality regulation, monitoring and information disclosure

1. *Should government have the ability to ask liable firms and biofuel suppliers to report on the fuel quality of their blend components (petrol, diesel, biodiesel, bioethanol), to prove compliance when and if required ?*

Yes, this is a minimum condition to ensure public confidence in biofuel quality.

2. *Should the government have the ability to take samples from storage tanks (terminals, refinery, biofuel storage facilities and plants) on a random basis (e.g. in the event that retail fuel is non-compliant) ?*

Yes, as above. This ability should also apply to 'cottage industry' biofuel refiners.

3. *Do you agree that the Petroleum Fuels Monitoring Levy should also apply to biofuels ?*

Yes.

5. *Beyond labelling at retail dispensing pumps, do you think that further consumer information is necessary for biofuels and biofuel blends ? If so, please explain.*

A comprehensive information and education campaign will need to be made available to ensure motorists fully understand whether their vehicle is compatible, what the costs are (including reduction in economy), and also warning against using non-compliant 'backyard' biofuels. Initiatives could include 0800 advice lines, a website, brochures at service stations, and advertising in various media.

Labelling of bioethanol

1. *What is your preferred option for bioethanol labelling requirements ?*

We agree all petrol with 1% bioethanol should be labelled, and the label should identify the upper level of bioethanol content, e.g. "this fuel contains up to 3% bioethanol" or "this fuel contains up to 5% bioethanol". However, we do not support allowing oil companies to decide which blend (E3, E5 or E10) to offer to the public, as this could create confusion,

and therefore only one blend should be mandated for retail sale by the Government under the BSO. Biofuel blend retailers should be required to use the EECA biofuel label.

Labelling of biodiesel

1. What is your preferred option for biodiesel labelling requirements ?

Any supply containing biodiesel between 1-5% should be labelled “this fuel contains up to 5% biodiesel”, and be supported by the EECA label. While we expect all diesel will be blended, there may be times (in winter, for example), or certain locations, when no biodiesel is added to some stocks, and therefore no label is required. But mandating no labelling, even when blended with some biodiesel, could create uncertainty for consumers in such situations.

Yours sincerely

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