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Vehicle Emissions Working Group
Department of Infrastructure and Regional Development
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Submission – Draft Regulatory Impact Statement (RIS) on vehicle emissions.

The purpose of this submission from Bioenergy Australia is to provide comment on the Department of Infrastructure and Regional Development's Draft Regulatory Impact Statement (RIS) on vehicle emissions and reiterates the points made by one of Bioenergy Australia's directors, Ms Heather Bone in the RebusJ submission.

Bioenergy Australia is a nation-wide government-industry-research alliance of more than fifty organisations, established to foster biomass as a source of sustainable energy and for value-added bio-products such as biofuels. Its broad objectives are to:

- Promote an awareness and understanding of the economic, social and environmental attributes of sustainable energy from biomass.
- Broaden the market for biomass by enhancing opportunities, and by helping to reduce financial, regulatory, fuel supply, technical and institutional barriers to enable widespread adoption of biomass energy.
- Facilitate the development and deployment of biomass energy business opportunities and projects through information.

Bioenergy Australia is also the vehicle for Australia's participation in the International Energy Agency's Bioenergy technology collaboration program (www.ieabioenergy.com), an international collaborative RD&D (research, development and demonstration) agreement involving some 23 countries plus the European Commission. The Bioenergy Australia Manager represents Australia on the Executive Committee of IEA Bioenergy, which covers the broad spectrum of bioenergy, including participation in Task 39 *Commercialisation of Conventional and Advanced Liquid Biofuels from Biomass*. Australia's participation in IEA Bioenergy is supported financially by ARENA through its Emerging Renewables Program.

Please note that this submission does not necessarily reflect the views of individual member organisations.

The objective of the RIS is to examine the net benefits/disadvantages if the Australian Government were to introduce more stringent international vehicle emission standards.

The implementation of **Option 6,** as outlined in the Discussion Paper, is supported. It would mandate both Euro 6 for light vehicles and Euro VI for heavy vehicles under the *Motor Vehicle Standards Act* 1989.

The planned phase-in period of 2019-2020 should be easily achievable as a practical timeframe without unduly disrupting business planning, as these engines are currently available from overseas. Manufacturers will be largely able to utilise technologies they have adopted to meet equivalent standards in other countries.

This submission queries why the focus in the Discussion Paper appears to be only for on-road heavy vehicles and not on off-road heavy vehicles. Nowhere in the RIS are off-road applications discussed. Such engines are available internationally. Australia is one of the remaining developed countries not regulating for the higher quality off-road engines.

Preference for Option 6

The rationale for choosing Option 6 is:

- The benefit-cost analysis of option 6 shows an achievable $675 million over the period 2016 to 2040, even including assumptions about the level of sulfur in Australian petrol remaining business as usual with no change to current fuel standards. These savings will be considerably higher if and when Australia regulates for lower sulfur fuels.

- Both Euro 6 light and Euro VI heavy vehicle engines are already available internationally and can therefore be quickly introduced into the Australian market with little or no impact upon infrastructure.

- The intention – under the 'Better Fuel for Cleaner Air' Ministerial Forum on Vehicle Emissions – is clearly to drive the implementation of 10ppm sulfur fuel which will allow for the optimization of the Euro 6/VI engine operability and encourage their uptake in the country.

- In the absence of domestic regulation, the Australian Government cannot guarantee that all vehicles supplied to the Australian market would eventually meet these standards. It would be far easier for manufacturers to continue supplying vehicles meeting current standards and there will be little incentive for them to do otherwise.

Off-Road Engines

The International Agency for Research on Cancer, within the World Health Organisation, has declared that diesel exhaust is a 'known carcinogen'. A prime factor is diesel exhaust particulate emissions. The recommendation is that Australia should be implementing the equivalent engines, i.e. Tier 4I (interim) or Tier4F (final) - for off-road applications.

These engines are also readily available internationally for both mining applications and agricultural uses. It is known that a major international company recently brought Tier 4F engines into Australia but due to the fact that there were no regulatory mechanisms to encourage their sale, that organisation have reverted to farm machinery with lower tier engines.

Heavy engine manufacturers such as Caterpillar, Komatsu, Hitachi and Sandvik all have these engines available, but they continue to sell engines with no Tier rating, or lower Tier ratings, into the Australian market in the absence of more stringent regulations.

As noted in the paper, heavy vehicles in on-road applications (vehicles over 3.5 tonnes) constitute approximately four percent of the vehicle fleet in Australia, but contribute approximately 25 percent of transport related emissions.

This figure does not factor in the usage of diesel in off-road applications, which would result in substantially higher volumes and therefore proportionately higher related emissions.

The heavy vehicle fleet in Australia emits considerably higher levels of NOx and particulates than the light fleet. While it is appreciated that the focus of the RIS is on the urban airsheds, and predictably particulate levels tend to be highest near busy roads and dense urban areas, it should be noted that NOx and particulates from more rural areas, where engines are used more intensively, are likely to also enter into the urban airsheds.

Some of the average lifespans of these vehicles is long – even longer than for on-road applications – and so by updating these regulations the net benefit would be further intensified.

As highlighted in the RIS, if the ADRs do not keep pace with international trends, Australia runs the risk of foregoing the benefits of technology available in other developed countries.

This is already clearly apparent in off-road applications - manufacturers simply find it more cost effective to continue supplying older technology to the Australian market. This is even though the catalytic converters, on-board diagnostics (OBDs), indicators and importantly Urea (AdBlue) are already available now for on and off-road applications such as Selective Catalytic Reduction (SCR) engines.

Government action is necessary where the market fails to provide the most efficient and effective solution to a problem.

Most developed countries have now adopted noxious emissions standards based on Tier 4, being the equivalent to Euro VI for heavy vehicles. Consideration must be given to these off-road engines and their application.

Incorporating Future Fuels

The introduction of Euro 6 and Euro VI standards will encourage the uptake of lower emission alternative fuels.

Given the aim that the regulatory framework will be in place for the foreseeable future, it will be important for the regulations to have a mechanism by which future alternative fuels can be managed.

Planning must take place now for changes to fuels in the future and the uptake of different alternatives.

The regulations will need to reflect that alternative fuel standards may be necessary in the future and ensure that definition of ‘fuel’ is adequate to enable all of the relevant standards to be made. The definition of fuels needs to be expanded and consideration made of the alternatives to fossil fuels that may eventuate in the future, or may indeed be available today.

To this end the example is given that there is currently no definition of renewable diesel and this is problematic, particularly given its availability as a drop-in alternative to diesel fuel. Around the world it has been clearly shown that Euro 6/VI engines are able to work in some instances even better on alternative drop-in fuels such as renewable diesel.

Example - Renewable Diesel

The engine operability standards and the *Motor Vehicle Standards Act* 1989 work hand in hand with the fuel quality standards. While the *Fuel Quality Standards Act* 2000 Act applies to petroleum, diesel, ethanol and biodiesel, it does not apply to renewable diesel.

The *Fuel Standard (Biodiesel) Determination* (2003) defines "biodiesel" and is prescriptive of the chemicals and processes required. There is no definition of renewable diesel and it is, subsequently, precluded from the preferential excise treatment given to biodiesel, even though the product is coming from the same renewable feedstock sources.

"Renewable diesel" was however previously defined under the *Cleaner Fuels Grant Scheme* (CFGS) which allowed for its preferential excise treatment by the Australian Taxation Office.

In the 2014–15 Budget, the Federal Government announced it would cease the CFGS for biodiesel, renewable diesel and ethanol production from 1 July 2015.

With the end of the CFGS, the only definition of renewable diesel was lost which now forces renewable diesel – a drop-in, cleaner burning, low emission, renewable source of fuel – to pay full excise.

In order to allow for the development of alternative fuels which also meet the stated aims of the Discussion Paper, the definition and treatment of renewable diesel needs to be reinstated to the relevant regulations to accommodate the sale of renewable diesel as a fuel with the same preferential excise treatment.

Renewable diesel is one example of how the fuel standards need to accommodate and encourage the uptake of the alternatives to fossil fuel.

Equity in the Australian fuels market is required.

This will be an essential fuel for the future of Euro 6/VI engines whether on or off-road.

Proposed Definition

As noted above, renewable diesel was previously defined under the Cleaner Fuels Grant Scheme.

It is proposed that the definition be reinstated as follows:

> *For the purposes of this Act, renewable diesel means liquid fuel that:*
>
> *(a) is manufactured by chemically altering*:*
>
> *a. vegetable oils or animal fats (including recycled oils from these sources);*
> *b. biomass; or*
> *c. other waste streams or residues;*
> *and*
>
> *(b) complies with the applicable fuel standard for diesel.*

If:

(a) a quantity of liquid fuel (the final fuel) is manufactured; and
(b) a part of the final fuel was manufactured by chemically altering vegetable oils, animal fats, biomass or other waste streams or residues; and
(c) a part of the final fuel is diesel; and
(d) the final fuel satisfies the applicable fuel standard for diesel;
then the amount of the final fuel worked out in accordance with the regulations is taken to be renewable diesel for the purposes of this Act.

** "Chemically altering" is defined as being that the end product's chemical processing must have included thermal separation (fractionation) and hydrofinishing.*

This proposed definition is similar to the original definition in the CFGS, and has been updated to recognise the feedstocks (such as biomass and wastes) that are used in the production of renewable diesel.

It is proposed that the definition of renewable diesel should be included in the *Fuel Quality Standards Act* 2000 and the *Fuel Quality Standards Regulations* 2001 and be reflected in any necessary sections of the *Motor Vehicle Standards Act* 1989.

The definition will also need to be referenced in the relevant excise mechanisms by the ATO and Treasury in order to allow for equity in the treatment of biodiesel and renewable diesel.

Conclusion

Thank you for the opportunity to provide this submission in relation to the RIS and the legislative instruments made under the *Motor Vehicle Standards Act* 1989. I and one or our Directors, Ms Heather Bone (who provided a separate submission from RebusJ) would be most pleased to provide follow-up information and assistance to the Department.

Yours Sincerely

Dr Stephen Schuck
Bioenergy Australia Manager