9 December 2011

CO2 Emissions Standards
Vehicle Emissions and Environment Section
Surface Transport Policy
Department of Infrastructure and Transport
GPO Box 594
CANBERRA ACT 2601

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Caltex Australia Limited welcomes the opportunity to provide the attached submission to the discussion paper on light vehicle CO2 emissions standards for Australia.

Caltex supports the submission of the Australian Institute of Petroleum on the paper.

Please feel free to contact me (topham@caltex.com.au, 0411 406 379) if you wish to discuss the contents of the submission.

Yours sincerely

[Signature]

Frank Topham
Manager Government Affairs & Media

Attach.
Light vehicle CO₂ emissions standards for Australia

Submission by Caltex Australia Limited

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1. Introduction

Caltex sells a high ethanol content fuel, Bio E-Flex, at 38 service stations in Adelaide, Brisbane, Canberra, Melbourne, Sydney and Newcastle. The product was launched in August 2010. The ethanol-based fuel is designed for use in flex-fuel vehicles such as the Holden VE Series II Commodore range. Bio E-Flex, commonly known overseas as E85, is a high-octane fuel consisting of up to 85 per cent ethanol blended with 15 per cent petrol. Caltex and Holden have worked in partnership to introduce the new fuel and vehicles.

Some facts about Bio E-Flex:

- Bio E-Flex contains up to 85% ethanol, which is a renewable fuel made from molasses, wheat starch or sorghum, not crude oil. Ethanol helps reduce greenhouse gas emissions compared with petrol as it generates less emissions over its full lifecycle including the growing of crops, manufacturing the ethanol, transporting it to the pumps and using it in your vehicle. Pure ethanol is estimated by CSIRO to result in 18 to 46 per cent less greenhouse gas emissions than petrol on a full lifecycle basis. Holden estimates that Bio E-Flex will reduce emissions by up to 40% compared with petrol. Emission reductions from Bio E-Flex will depend on factors including the source of ethanol and amount of ethanol in the blend.

- When driving on Bio E-Flex, the fuel consumption per kilometre will be higher because a litre of ethanol contains less energy than a litre of petrol. As a result, it takes more litres of ethanol to drive a certain number of kilometres.

- Bio E-Flex offers the highest octane rating of all Caltex fuels, which increases the power and torque of the Commodore flex-fuel engines compared with unleaded petrol. The octane of Bio E-Flex is about 105 RON (Research Octane Number) but this will vary depending on the season. Caltex's highest octane petrol is Vortex 98, which is 98 RON.

- Caltex Bio E-Flex contains between 70 and 85 per cent ethanol blended with petrol. The ratio varies depending on the time of year. This is similar to the seasonal variation in ethanol content in E85 overseas. Different seasons can change the way fuel performs in the engine, so Caltex will adjust the blend of ethanol from 70 to 85% between seasons to ensure your engine performs correctly.

- Caltex sources its ethanol from producers in NSW and Queensland. The ethanol in Bio E-Flex is made from renewable sources such as waste starch from processing of wheat, molasses from sugar production and sorghum, which is grown for ethanol manufacture and stock feed.

2. The issue of bonus credits (Q10 and Q11)

This issue is raised in Section 3.1.6 of the discussion paper:

"Consistent with international practice, the Department of Infrastructure and Transport considers that the CO₂ emissions value for each model (and its variants) that is recorded on the standard emissions test under ADR81/02 – Fuel Consumption Labelling for Light Vehicles, should be the basic data element for calculating the CO₂ emissions targets under the standard. ADR81/02 adopts the test used in UNECE Regulation 101.

Overseas CO₂ emissions standards also use certification data as the primary data for their CO₂ standards. Some, including those in the US and EU, provide bonus credits for "advanced
technology” vehicles such as fully electric vehicles (EVs) and flex fuel vehicles. Support is also provided for other vehicle based technologies which may lower emissions but these emissions reductions are not “captured” in the standard test regime under ADR81/02 (such as tyre pressure monitors, gear shift indicators and efficient air conditioners)...

Inclusion of such provisions in mandatory CO2 emissions standards broadens the policy intent of the standards beyond the primary purpose of CO2 emissions reduction. Policies to include credits such as those outlined above are designed to support/encourage manufacturers to move early to introduce advanced (often expensive) technologies such as hybrids and EVs, and in the case of certain fuels, to provide recognition of claimed life cycle CO2 benefits not captured in the standard test.

Such credit arrangements need to be treated with caution as their merits can in some cases be difficult to quantify accurately (particularly where the claimed benefits are based on estimates of life cycle emissions). Their inclusion is also inconsistent with the general principle of a performance based standard (where every gram of CO2 saved is treated equally, regardless of the technology). It can also be argued that where such measures have clear merit, they could better be addressed through separate, but complementary, policies outside of the CO2 standard itself.

Q10 Do you support the idea of bonus credits for new technology vehicles (such as EVs), flex fuel vehicles and other technologies, or should the CO2 standard be purely performance based, treating all vehicles on the same basis (using the CO2 emissions result on the standard ADR test)?

Q11 If you support credits, what vehicle types do you consider qualify for a credit and why?*

3. General response to issues raised in discussion paper (Section 3.1.6)

- The intent of emission standards is to reduce CO2 emissions from light vehicles. Focusing only on tailpipe emissions fails to provide accurate information to consumers on the true comparative environmental performance of vehicles and distorts decisions by producers in relation to cost-effective technologies by biasing investment decisions towards engine technologies. Caltex would argue, contrary to the discussion paper, that inclusion of a credit for alternative fuels brings the standards closer to the primary policy purpose of emission reduction.

- Credits support and encourage manufacturers to move early on more advanced technologies but only by providing more accurate information to consumers – there are no subsidies involved and the more complete information creates a more efficient market.

- In addition, the cost-effectiveness of emission reduction measures should not be a factor in determining whether to give a credit for that fuel or vehicle technology. The discussion implies there should be some kind of limitation.

- We agree that life-cycle benefits should be treated cautiously but that is no reason for their exclusion. Sound scientific approaches exist to calculation of life-cycle emissions and conservative assumptions can be made if necessary. As a result of such conservatism, the real benefits may be underestimated but that is better than no credit at all being provided.

- The notion that every gram of CO2 saved should be treated equally is correct – which is which a tailpipe-only calculation may heavily distort the true emissions from vehicles. For example, biofuels emit carbon dioxide when burned but there are fundamental life cycle differences between grams of carbon dioxide from, for example, petrol and ethanol. In a climate change context, it is not valid to treat all grams of carbon dioxide emissions equally.

4. Specific proposals for “E85” fuels

The Green Vehicle Guide (GVG) is widely used by corporate and government fleets to set minimum environmental performance criteria for the purchase of vehicles. An appropriate framework for CO2 emission standards could assist alternative fuels such as Bio E-Flex (“E85”), LPG, CNG and electric vehicles to help reduce Australia’s greenhouse gas
emissions. The standards would encourage manufacturers to make vehicles using these fuels more available.

In addition, incorporation of ratings for conventional and alternative fuels in the Green Vehicle Guide (GVG) would encourage consumers to purchase vehicles and/or use alternative fuels. The GVG is used by corporate and government fleets to set minimum environmental performance criteria for the purchase of vehicles, and would also provide guidance to private consumers.

The GVG should not continue to be based solely on the CO\textsubscript{2} emissions value (in g/km) from the standard ADR test. Greenhouse Ratings based on the ADR test only consider tailpipe emissions and ignore the different lifecycle greenhouse gas profiles of alternative fuels. While it is appropriate to use the ADR test as the basis for GHG emissions when considering traditional fossil fuels such as petrol and diesel, it does not provide the appropriate basis to rate fuels sourced from renewable alternatives which have significantly different upstream emissions.

Analysis by Holden has shown that for Australian produced ethanol, the well-to-wheel benefit of a vehicle running on an average seasonal blend of “E85” is between 20% and 40% compared to petrol. (Bio E-Flex varies in content between 70% and 85% depending on season, for operability reasons.) In the mandatory fuel economy regulations and CO\textsubscript{2} emission standards of the United States, Canada and Europe, the well-to-wheel benefit of biofuels are recognized through the application of various credit systems. These credit systems provide a percentage discount to the tailpipe CO\textsubscript{2} number or fixed credit in terms of fuel used per distance travelled (eg miles per gallon credit).

In a revised GHG rating system, vehicles equipped to run on biofuels should receive a standardised reduction to the CO\textsubscript{2} figure recorded in the ADR test for conventionally fuelled vehicles. This reduced figure could then be used to calculate a credit for manufacturers of flex fuel vehicles under the mandatory CO\textsubscript{2} emission standards.