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Project Manager—Queensland biofuel mandate

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To the Project Manager

Queensland biofuel mandate

Thank you for the opportunity to comment on the discussion paper *Towards a clean energy economy: achieving a biofuel mandate for Queensland*.

Need for a cost-benefit analysis

Before the Queensland Government commits to the 2 per cent ethanol mandate proposed in the biofuels discussion paper, it should commission a cost-benefit analysis to ensure that the costs the mandate will impose on motorists, estimated at over $4 million annually, are justified by the suggested environmental and regional development benefits.

It is very important that a cost-benefit analysis is done, because some back-of-the-envelope calculations suggest the ethanol mandate will, at a minimum, cost Queensland motorists $4 million per annum, and this cost will rise to nearly $7 million per annum when the new excise of 12.5 cents/litre applies to ethanol in 2020. It may be that the benefits of the ethanol mandate exceed the cost to motorists, but the Government should not commit to the mandate unless a cost-benefit analysis proves this is the case.

Any cost-benefit analysis would need to recognise the potential drawbacks of ethanol-blended fuels. The US Environmental Protection Agency has noted (see Economics of Biofuels):

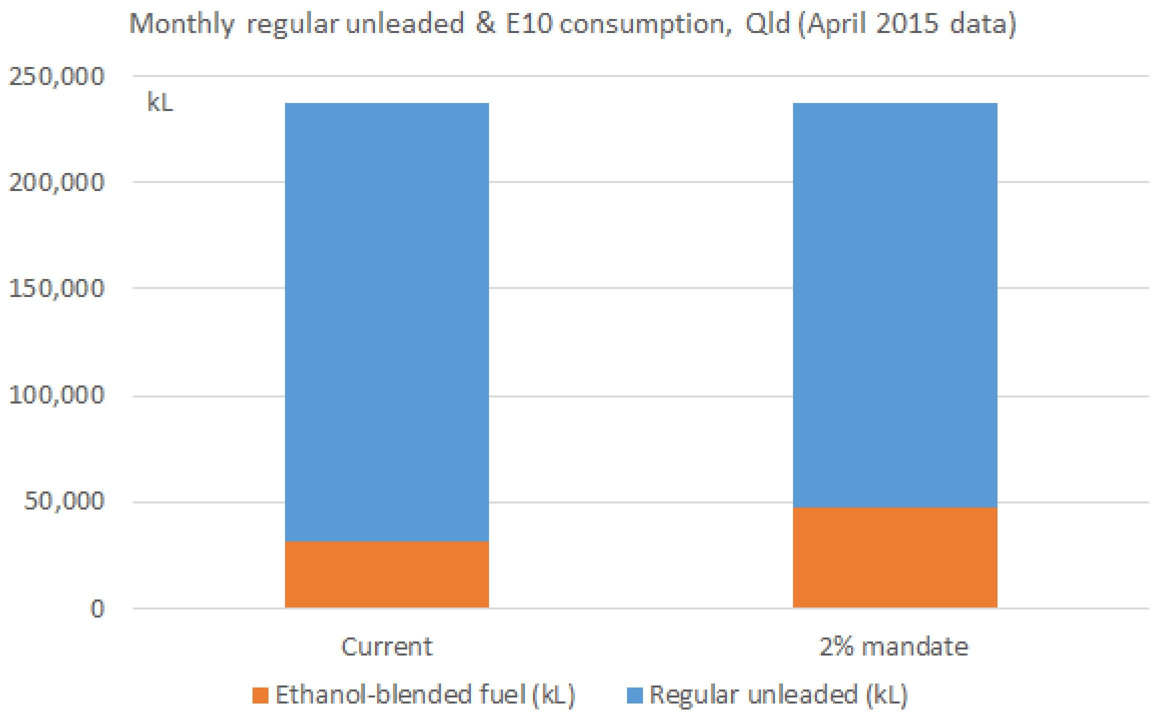
> *Potential drawbacks include changes to land use patterns that may increase GHG emissions, pressure on water resources, air and water pollution, and increased food costs. Depending on the feedstock and production process and time horizon of the analysis, biofuels can emit even more GHGs than some fossil fuels on an energy-equivalent basis. Biofuels also tend to require subsidies and other market interventions to compete economically with fossil fuels, which creates deadweight losses in the economy.*

All these factors would need to be considered in a cost-benefit analysis, along with the $4 million plus cost to Queensland motorists from an ethanol mandate.

Indicative impact on motorists—back-of-the-envelope analysis

The cost to motorists is estimated in the following way. Currently, the ethanol content of the total volume of regular unleaded plus ethanol-blended fuel is around 1.3 per cent. Even though ethanol-blended fuel is around 13 per cent of the total volume of fuel, only 10 per cent of the ethanol-blended fuel is actually ethanol, and the rest is regular unleaded (i.e. as is typically assumed, we are assuming all the ethanol-blended fuel is E10, which appears reasonable given it is the dominant ethanol-blended fuel type).

Given the ethanol share is currently 1.3 per cent, the 2 per cent mandate would imply over a 50 per cent increase in ethanol-blended fuel consumption in Queensland or around an additional 16 mega-litres per month, based on April 2015 Australian Petroleum Statistics (see chart below). That is, ethanol-blended fuel would then have to make up 20 per cent of total regular unleaded and ethanol-blended fuel sales.



Now, the cost to motorists comes from the apparent saving on a litre of E10 being insufficient to compensate for the fuel efficiency loss. The price advantage of E10 to regular unleaded is only around 2 cents per litre (see p. 3 of the Biofuels discussion paper), a saving of less than 1.5 per cent at current fuel prices, compared with the fuel efficiency disadvantage of 3 per cent (i.e. E10 has 3 per cent less energy content than the same volume of regular unleaded). Currently, any motorist who fills up with E10 is losing money, and must really value the purported environmental benefits of E10 to make it worthwhile. I estimate the loss to consumers per litre of E10 purchased at around 2 cents per litre, based on an assumed unleaded price of $1.45 per litre. This is consistent with the point made by the RACQ in its *Ethanol-blended Fuels Policy Fact Sheet*:

> *In Brisbane in January 2015 the price of E10 was 2.3 cpl less than RULP. While E10 appears a cheaper fuel option, cars use about 3% more E10 compared to RULP [Regular unleaded petrol]. For most cars, the cost of increased fuel consumption will be*

greater than the savings from buying E10. At current prices, E10 would need to be 4.5cpl cheaper than RULP before it became more economical to buy.

In other words, the RACQ is saying the E10 would have to be around 2 cents per litre cheaper than it actually is for it to become economical to buy.

Based on an estimated 2.1 cents per litre loss on E10 fuel, and the additional E10 consumption required to achieve the 2 per cent mandate, i.e. over 16 mega-litres per month or around 195 mega-litres per annum, I estimate that the ethanol mandate would cost Queensland motorists over $4 million per annum. Hence, any environmental or regional development benefits that the Government considers would justify the mandate have a significant hurdle to get over already.

To make things even more difficult, the annual loss would be expected to increase as excise is progressively applied to domestically produced ethanol and E10 becomes more expensive. My calculations suggest the annual loss to Queensland motorists from the ethanol mandate could be $6-7 million by 2020, as the excise potentially increases the cost of E10 by 1.25 cents per litre in 2020, according to the biofuels discussion paper (p. 3).

I have not even considered the possible substitution into premium unleaded by motorists that might occur if a particular service station has run out of (or will not stock) regular unleaded and the choice is between E10 and premium—a substitution that has occurred on a large scale in NSW as a result of its ethanol mandate. Arguably, many motorists who switch to premium unleaded may not value the improved performance, and the implications of this should be considered in any cost-benefit analysis.

I hope this note makes it obvious that a comprehensive cost-benefit analysis of the Queensland Government's proposed ethanol mandate is required before any decision is made. I would be happy to discuss my views regarding the biofuel mandate with you at a mutually convenient time.

Yours sincerely,

Gene Tunny

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