

Queensland Parliamentary Services Utilities, Science and Innovation Committee

Liquid Fuel Supply (Ethanol and Other Biofuels Mandate) Amendment Bill 2015

TfA Project Group Submission (October 2015)

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1.0 INTRODUCTION

Thank you for the opportunity to make a submission on the proposed Liquid Fuel Supply (Ethanol and Other Biofuels Mandate) Amendment Bill 2015.

TfA Project Group can offer a unique insight into the Biofuels and Petroleum Industries being recognised Industry experts in the design of Oil Terminals and Service Stations, and the development of Biofuels plants. We have been involved with the design of over 600 service stations, numerous Oil Terminals, feasibility and preliminary engineering for over a dozen proposed Ethanol plants, and detailed design of the Dalby Ethanol Plant in Queensland.

We have also travelled extensively overseas to visit existing Ethanol plants and attend international Ethanol industry conferences and investigated a variety of feed stocks including Wheat, Sorghum, Sugar Cane, Cassava and second generation cellulosic technologies using sugar cane bagasse and waste fibre.

Thus we are well placed to provide relevant commentary regarding the implementation of this Bill.

2.0 OBJECTIVES OF THE BILL

The primary objectives of the Bill are to amend the Liquid Fuels Supply Act 1984 to:-

- provide assurance to existing ethanol and biodiesel producers and stimulate investment in a biofuels industry in Queensland
- contribute to regional growth and jobs creation
- reduce greenhouse gas emissions from motor vehicles, and
- take advantage of the emerging second generation technologies for biofuels from a range of feedstock.

2.1 “Provide assurance to existing ethanol and biodiesel producers”

On the premise that the majority of ethanol blended sales are E10, current ethanol sales in Queensland in July 2015 and over the 2014-2015 year are constant at approximately 1.3% ⁽¹⁾ of total regular unleaded and ethanol blended petrol sales. This utilises only 27% of the 140ML per annum production capacity available from existing Queensland ethanol plants. At these levels existing plants are operating well below design capacity with high production overhead costs per litre.

A 2% mandate as proposed will still only utilise 42% of the existing production capacity which we would consider unlikely to achieve the Bill objectives of providing assurance to existing ethanol producers.

In the context of existing infrastructure, Queensland sales of ethanol blended fuel peaked in 2010 at approximately 90ML per annum, equivalent to 3.1% of 2014-2015 sales. Given that most sites operating five years ago would still be operating and the substantial number of new sites under construction, existing infrastructure could be expected to support a mandate up to 3% very quickly. However this will still only utilise 62% of existing production capacity.

Hence we support an initial mandate of at least 3% to achieve the objective.

2.2 “Stimulate Investment in a Biofuels Industry in Queensland”

It is clear that a mandate of 2% which utilises less than half of the existing production capacity does not provide a sound business case to develop further biofuels plants in Queensland.

Investment in future ethanol production requires both certainty in terms of ethanol sales and also a time frame in order for new plants to gain development approvals, project finance and to complete construction. Periodic reviews and incremental increases in the mandate percentage are unlikely to facilitate the development of new plants without provisions that define future growth in ethanol demand.

The establishment of new ethanol plants realistically takes in the order of two to three years, however critical to this process is fuel retailers making commitments to future offtake agreements in order for new Biofuel plants to secure finance.

We recommend the inclusion of a schedule similar to that within the original NSW Biofuels Act 2007 outlining a gradual increase in the mandate over a period of three to four years. Such a strategy would provide critical industry planning framework:

- Fuel retailers will need to secure increased ethanol supplies.
- Developers will have a basis in which to negotiate future supply contracts.
- Once Developers have sales agreement commitments, this will form the basis of securing project finance to develop and construct new Biofuels plants in Queensland.
- A realistic time period will be available to develop new biofuels production plants.

We propose a schedule in the mandate Bill incorporating an increase to 6% within three years and 8% within four years. This would provide certainty for the industry, an incentive for fuel retailers to negotiate ethanol supply agreements, and an adequate timeframe for the establishment of new Biofuel plants.

2.3 “Contribute to Regional Growth and Jobs Creation”

Both existing Ethanol plants in Queensland are located in regional areas, close to their feed stocks.

A recent study commissioned by QUT ⁽²⁾ identified significant potential regional benefits of Biorefineries including:-

- A viable source of economic growth and diversification
- Significant value adding to agricultural production
- Capable of generating export earnings

The study also found that there are feedstocks available for viable refineries in several regions of Queensland including the south west, central, coastal and tropical climate zones.

2.4 “Reduce Greenhouse Gas Emissions from Motor Vehicles”

Ethanol has been well documented for its environmental benefits including the reduction of greenhouse gas emissions.

- Ethanol reduces greenhouse gas emissions by 34–96% ⁽³⁾ depending on the feedstock. Ethanol from sugar cane provides reductions in the order of 51% and from second generation cellulosic feed stocks in the order of 88-96%.
- Ethanol reduces carbon dioxide emissions by 26-86% ⁽⁴⁾.
- Ethanol from sustainable feedstocks is energy positive, absorbing solar energy and carbon dioxide to provide more energy than the fossil energy required for its production. For example the energy ratio for ethanol from grain feed stocks is 1.6 ⁽³⁾, sugarcane 4.3 and stover 4.7.
- Ethanol is non-toxic, biodegradable and does not permanently affect the water table.
- Ethanol is not carcinogenic unlike some components of gasoline such as benzene.
- E10 fuel reduces cancer causing particulate emissions by over 30% ⁽⁴⁾⁽⁵⁾, benzene emissions by 25% ⁽⁴⁾ and total toxic mass emissions by 13% compared to conventional gasoline.
- Molecular ethanol contains 35% oxygen which improves the efficiency of fuel combustion in vehicles.

2.5 “Take Advantage of Emerging Second Generation Technologies for Biofuels from a range of Feedstocks”

Second generation technologies are essential to achieve the greatest environmental benefits from biofuels, however they will not be realised unless ethanol demand exceeds existing plant production levels to provide a sound business case for the development of new Biofuels plants.

As stated above we support a schedule within the Bill, outlining a gradual increase in the mandate, over a period sufficient to develop new Biofuels plants.

3.0 CONCLUSION

Biofuels are environmentally friendly, sustainable and could improve Australia's fuel security and support regional employment for Queenslanders using proven technology. Viable second generation feed stock options are readily available throughout regional Queensland.

It is critical that the Bill provides a framework for fuel retailers to make Biofuel supply commitments over a time frame sufficient for the development of new Biofuel plants.

We support an immediate 3% mandate to ensure ongoing viability of Queensland's existing ethanol plants and a schedule within the Bill to gradually increase the mandate to 8% over four years.

This will promote development of second generation Biofuels technologies and encourage investment decisions for new Biofuel plants in Queensland.

4.0 REFERENCES

1. Australian Petroleum Statistics, July 2015, Table 3B, 3C, Office of Chief Economist - Bureau of Resources and Energy Economics
2. Deloitte Access Economics / QUT – Economic impact of a future tropical biorefinery industry in Queensland 2014
3. Well-to-wheels energy use and greenhouse gas emissions of ethanol from corn, sugarcane and cellulosic biomass for US use, Michael Wang et al, December 2012
4. Updated Energy and Greenhouse Gas Emission Results of Fuel Ethanol, Michael Wang, September 2005
5. Air Quality and Ethanol in Gasoline 2004, Gary Z Whitten PhD Smog Reyes

(Copies of references above can be provided on request)