

Submission

Prepared for:-

**Committee appointed to review the Liquid Fuel Supply
Act 1984**

By:-

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1 August 2014

The Research Director

State Development, Infrastructure and Industry Committee

Parliament House

George Street

BRISBANE QLD 4000

sdiic@parliament.qld.gov.au

Dear Sir/Madam,

Re: Proposed Amendment to the Liquid Fuel Supply Act 1984

Background.

BioEnergy Plantations Australia Pty Ltd. (BPA.)

BPA.'s Vision for a world class Pongamia Industry in Australia.

BPA's vision is to create an Australian based Industry which will have 50, 000 ha of grazing land under *pongamia pinnata* cultivation, and producing 50 million litres of high grade biodiesel by 2020 with an annual value of around \$50 million, with flow on commercial, employment and government revenue benefits to Australia

BPA. intends to provide high grade fuel for clients such as:-

- Remote area communities for energy generation and general use, thus reducing the dependence on, and subsidy costs to State and Federal government utilities.
- The Australian Land, Sea and Aviation Transportation Sectors which along with the Australian Mining sector currently consume 1.8×10^{10} litres of diesel.
- The US Navy (which is required to meet 50% of its fuel needs from green fuel sources.) and will have a new naval base in northern Australia.

BPA's Track Record.

BioEnergy Plantations Australia Pty Ltd (BPA.) is a vertically integrated BioEnergy company formed in 2007.

- BPA is an emerging leader in the renewables field with a particular emphasis on biodiesel from *pongamia pinnata*.
- With the support of the Queensland Government, BPA. established a leading R & D enterprise (51% owned by BPA.) with UniQuest Pty Ltd, the main commercialization company of The University of Queensland, to conduct extensive R&D on gene isolation, salinity testing, gene expression, and initiation of life cycle analysis.
- BPA. has made substantial contributions to a number of research projects with the Australian Research Council (ARC) Centre of Excellence for Integrative Legume Research located at The University of Queensland focused on Pongamia life cycle analysis, Pongamia in mined land rehabilitation and the development of transgenic Pongamia.
- BPA. has an exclusive worldwide license to trees owned by the Brisbane City Council.
- BPA. has facilitated the establishment of a nursery facility and tissue culture laboratory with an approximate capacity of 2 million trees per year.
- BPA. has achieved the sale of more than 170,000 trees to Origin Energy and co-managed the establishment and operation of Origin Energy's 300ha plantation.
- BPA. continues to have extensive engagement with State and Federal government agencies and organizations involved in Coal Seam Gas, mining and agricultural enterprises.

Current plantation feedstock capacity.

- BPA. has a 4600 ha property near Mackay that is being planted with *pongamia pinnata*
- BPA. co-manages Origin's 300 ha plantation near Roma
- BPA, conducts a smaller trial plantation at Caboolture (including trial biodiesel production facilities and plant)
- There are UQ/CSIRO plantations at Johnstone and Walkerman in FNQ
- A private plantation exists near Katherine in the Northern Territory

Liquid Fuel Supply Act

As a member of the Biofuels Association of Australia (BAA), BPA supports the objective of the Bill to amend the *Liquid Fuel Supply Act 1984* to require minimum ethanol content in relation to the total volume of motor spirit sold in Queensland. This action we believe will:-

- Leverage Queensland's agricultural base to create value adding options for farmers,
- Improve air quality as a result using oxygenated fuels resulting in more complete combustion,
- Take some important first steps in improving Queensland's fuel security by developing alternative fuels,
- Position Queensland as a global player at the forefront of an emerging advanced biofuels

- industry, and
- Take a leadership position in advocating for clean energy.

An Australian biofuels industry has broad societal benefits in the areas of economic development, health, environment, innovation and energy security and a brief summary of these benefits is attached.

Comments on the Liquid Fuel Supply (Ethanol) Amendment Bill 2014

Setting a level

Although BPA.'s primary concern is the securing of support for the production, use, and if possible a mandated utilization level for Biodiesel in Queensland, we believe the broader benefits of a Queensland biofuels industry will be encouraged by a realistic ethanol content mandate for motor spirit. In order to ensure a proper growth rate that allows for a realistic industry base, BPA is in agreement with the BAA's and RACQ's position that the level for a mandate in Queensland be set initially at 2% in 2016 and then be increased to 3% by 2020.

Rationale

As the flow of fuel to the consumer is controlled in the main by the major oil companies, the market cannot be considered as a free market. Major oil companies not being basic in the manufacture of biofuels have no commercial incentive to offer cleaner biofuels to the market. It is this reason, coupled with the benefits to regional economies and the lessening of the negative externalities associated with the burning of fossil fuels that countries all over the globe have resorted to implementing mandates as the central policy for promoting the development of cleaner fuels.

Biodiesel

BPA in association with the BAA, also requests that the proposed amendment be expanded to include a 2% biodiesel mandate. Diesel as a fuel is growing in popularity nationwide. Diesel also accounts for the majority of particulate emissions from our transport sector. The International Agency for Research on Cancer (IARC), a World Health Organisation body, recently categorised diesel engine exhaust as a group 1 carcinogen. Carcinogens are classified as group 1 when there "is sufficient evidence of carcinogenicity in humans". Research conducted by IARC observed "statistically significant increasing trends in lung cancer risk with increasing cumulative REC" with REC representing respirable elemental carbon, the content measured to determine carcinogenicity. Biodiesel due to its higher oxygen content reduces particulate emissions much in the same way Ethanol does in petroleum. Not only, therefore, will a move towards biodiesel fuels reduce the prevalence of emissions that cause asthma, reduced lung function, respiratory disease and cardiovascular disease but also cancer.

Targeting a 2% inclusion of biodiesel will have no effect on consumers as blends of biodiesel up to B5 (5%) are actually considered diesel under the Australian Fuel Quality standards.

Summary

BPA. supports the objective of the Bill to amend the *Liquid Fuel Supply Act 1984* to require minimum ethanol content in relation to the total volume of motor spirit sold in Queensland. BPA. also believes that expanding the bill to include a 2% biodiesel would further strengthen the objects of the bill. BPA.is of the opinion that the adoption of realistic mandated volumes of biofuels will assist the State of Queensland in achieving one of the Governments major planks of its Agricultural Strategy. That being to double agricultural production in the State by 2040.

BPA would appreciate the opportunity to discuss this, or any other issues relating to biofuels, at any convenient time or place for the appropriate committee members or appointed Government officers.

BioEnergy Plantations Australia Pty. Ltd.

Attachment: Benefits of an Australian Biofuel Industry

Economic Development

Today more than 98 percent of the energy used in Australia's transportation industry still derives from fossil fuels. With Australia facing significant change in terms of the make-up of industries that once drove our economy, the burgeoning biofuels industry is a relatively new player, which if fostered can contribute future investment and jobs.

The BAA recently commissioned Deloitte Access Economics to undertake a study on the economic contribution of the Australian Biofuels Industry. The interim results of this report show that, net of the Cleaner Fuel Grants and Ethanol Producer Grants paid, the industry generated an economic contribution of approximately \$427 Million and provided for about 3,180 FTE jobs as a result of the industry's activities and that this could grow to \$554 Million and 4,002 FTE jobs should the industry utilise its installed capacity. Given that the biofuels industry represents just 1% of fuel sales, we believe this demonstrates the significant economic potential that this industry has to contribute to Australia's future.

The Australian biofuel production supports investment and jobs in regional Australia in communities including: Dalby, Sarina, Narangba, Barnawartha, Largs Bay, Picton, Nowra, Maitland, Cressy and Tom Price. A number of projects are under consideration for the future and Australia's biofuels demand and policy settings will be key factors influencing their commercialisation. Additionally, the BAA believes that there is an opportunity for a domestic biofuels industry to provide an alternative revenue stream for the agri-sector, allowing it to strengthen its resilience to ever changing environmental and economic conditions.

Export

Globally, biofuels is a growth industry with making up about 10% of the global supply. Today, Australia exports biofuels to destinations including the US and Asia, and we are increasingly being considered by overseas investors interested in establishing facilities for future export. This activity underlines the industry's international competitiveness when markets are not distorted. The potential future trade growth is not restricted to the fuels alone – there will also be opportunities for Australia to export its significant scientific and research skills, technology developments and human talent.

Health benefits

Ethanol and biodiesel blends can have a beneficial impact to air quality, and as a result human health due to the reduced pollutant gas emissions relative to fossil fuels. Air quality, particularly in and around our major cities, ports, tunnels and airports could be improved and there is opportunity for increasing uptake of biofuels to have a positive impact on health outcomes and reduce national and state health budget costs. The Australian Medical Association noted in its submission to the 2013 Senate Inquiry into the "Impacts on Health of Air Quality in Australia" that the costs associated with motor vehicle emissions alone are estimated to be between \$600 million and \$1.5 billion per annum.

In particular, a significant risk to human health is posed by vehicle particulate emissions, especially fine particles known as PM2.5. Many economies have taken direct action in setting

their fuel standards to limit particulates through requiring biofuels to be part of the standard fuel blends.

A CSIRO and Orbital study in 2008, "Evaluating the Health Impacts of Ethanol blend Petrol", concluded that there would be a "health benefit to Sydney and the Urban Australian population (taken as Sydney, Melbourne, Brisbane and Perth) arising from a move from neat ULP to ethanol blends in spark-ignition vehicles", noting that the "overall quantified health benefit of using ethanol blends is overwhelmingly dominated by reductions in particulate matter".

Biodiesel use in underground mines could also be a significant opportunity for improved OH&S outcomes. In a CSIRO paper titled, "Biofuel: potential use in the mining industry for the reduction of greenhouse gas and particulate matter emissions", it was noted that "the occupational exposure to particulate matter from diesel exhaust can be significantly higher among underground mine workers than it is for their above-ground counterparts." While a number of strategies are available to reduce exposure to vehicle exhaust or equipment emissions, not all may be suitable. As a result, the use of biodiesel as a "drop-in" replacement for diesel use in underground mining operations provides a viable option for companies to reduce the exposure of their people to harmful particulates and other toxic emissions.

Overall, the BAA believes that the net public health benefit of using blended fuels is positive and should be a significant consideration when analysing future policy settings to advance the uptake of biofuels in Australia.

Environment

The environmental benefits of biofuel use have been widely documented as is the potential for biofuels to impact positively on reducing GHG emissions. While there have been concerns due to the use of food crops as feedstocks in some countries, in Australia producers are using environmentally sustainable feedstocks from waste streams such as used cooking oils, tallow, wheat starch, molasses and sorghum. These feedstocks do not impact the affordability or availability of food within Australia.

Whilst the notion of first and second generation fuels once was central to the debate, 'Advanced Biofuels' has finally become the centre of attention, requiring fuels to be defined by their potential for lifecycle GHG abatement and their conformance to a set of sustainability criteria. Indeed, the issue of sustainability is of paramount concern to the Australian industry, and the BAA is the lead participant in Australia's involvement in the development of an ISO Sustainability Criteria for Bioenergy.

Technology and Innovation

The biofuels industry is an incubator for innovation and is the basis on which to foster new technology and R&D. Our local producers are constantly looking for ways to improve the efficiencies within their processes, via research into new enzymes or treatments to improve the yields and quality of the biofuel they produce.

Looking to the future of advanced biofuels, several Australian Universities and CSIRO have active research programs and many are at the forefront of research into new feedstocks, such as algae, cyanobacteria, sorghum, lignocellulose, pongamia and mallee. Importantly, the issue of how to manage biomass aggregation to allow cost effective processing of these feedstocks

into fuel is also a critical area of required study. Leveraging Australian industries that already aggregate biomass of course is a short pathway to piloting these new technologies.

The development of a sufficient supply of renewable feedstocks is of particular interest to the aviation industry, both in Australia and globally. The key challenges remain the cost and availability of feedstocks and refining capability. The global industry is keen to find ways of producing sustainable quantities of renewable jet fuel, at an acceptable cost. This is an area where there is strong customer demand for the product, and globally, many countries are urgently looking at ways that they can take advantage of what could become a significant industry in future. Australia is well positioned to take a lead in the development of pathways to renewable jet fuel and this is evidenced by investment in local initiatives such as the Australian Initiative for Sustainable Aviation Fuel (AISAF) and Queensland Sustainable Aviation Fuel Initiative (QSAFI), along with partnerships between companies such as Qantas and Shell, and Virgin Australia, Brisbane Airport Corporation and SkyNRG (Brisbane Bio port).

For Australian biofuel production, increased investment in the development of advanced, renewable economically viable feedstocks is critical to the growth of the industry.

Energy Security

An established industry can contribute to energy security as blending extends Australia's fuel reserves. Indeed, energy security concerns have driven many countries to introduce policies to actively encourage the development of their biofuels industry. Biofuels capability in Australia is also an area being closely watched by Defence personnel, particularly as our US allies are moving to significantly increase the use of renewable fuels in Navy vessels. Interoperability is a key factor to consider for the Australian Navy, as often shared supply chains are used for fuel.

Given the recent announcements of oil companies to cease producing petroleum in a number of capital cities, supporting biofuel production is one way Australia can ensure that it continues to have some indigenous fuel production capability. Biofuels and in particular the prospect of advanced biofuels from biomass offer a genuine opportunity for scale production into the future and a pathway to a secure supply of lower cost fuel for all Australians.