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Project Manager
Queensland Biofuel Mandate
PO Box 15456
City East QLD 4002

By email: biofuels@dews.qld.gov.au

To whom it may concern

I write in relation to the proposed biofuel mandate for Queensland and would like to express the support of Downer for the long term certainty it will provide for the industry, as well as highlight the need for some elements of the proposed mandate to be modified and incorporated.

Whilst I have reviewed the discussion paper, many of the elements therein pertain to ethanol specifically and are not relevant to either biodiesel or bio-manufacturing processes.

Therefore I have outlined as clearly below as I am able to the issues outside of ethanol which are relevant to the discussion paper and need to be improved, clarified or integrated.

1. Downer's support of renewable fuels

The Downer Group is a provider of services in markets including Transportation, Mining, Energy and Industrial Engineering, Utilities, Communications and Facilities. Downer is listed on the ASX and employs about 20,000 people.

Downer's Mining division is based in Queensland and has been delivering contract mining and civil earthmoving services to global clients for over 90 years, employing around 3,500 employees working across more than 50 sites in Australia, New Zealand, Papua New Guinea, South America and Southern Africa.

Downer is also one of Australia's largest and most experienced providers in the renewable energy market. Downer offers services in design, build and maintenance for:

- wind farms and wind turbine sites;
- landfill methane generation plants;
- sugar cane waste (bagasse) fired cogeneration plants; and
- other biomass fired cogeneration plants.

Downer offers the services required for the entire asset life-cycle including procurement, assembly, construction and commissioning.

For many years, Downer Mining has been recognised as a very large user and supporter of biodiesel in the Australian mining sector. Our commitment to renewable energy and specifically renewable transport fuels has been widely acknowledged by our clients as well as through our receipt of the Queensland Premier's 2011 Climate Smart Sustainability Award. Our use of biodiesel represents one of our innovations to delivering outcomes for the environment and for our customers.

Downer subsequently welcomes the Queensland Government's commitment to supporting the development of the biofuel and bio-manufacturing industries in Queensland and particularly supports its efforts in encouraging an economically feasible solution.

Downer supports the Queensland Government's aims to:

- drive investment and develop the biofuels industry in Queensland;
- contribute to regional growth and job creation;
- reduce greenhouse gas emissions; and
- lead to advanced biofuel production technologies.

2. Support for the diesel market

By increasing the use of biofuels in a measured way, sustainable growth of both supply and demand is ensured, providing a level of certainty to regional industries and remote communities and giving business the confidence to invest capital in Queensland.

While petrol in Queensland dominates the retail transport sector (by volume 40% of the market), diesel accounts for 60% of the total volumetric market and 1.7 times the total volume of petrol consumed in Queensland.¹

For the mining industry, diesel is even more important. For most sites in Queensland, diesel provides more than 98% of the fuel requirements by volume. Therefore any renewable fuel for mining must be about replacing diesel and it is imperative that any biofuel discussion includes viable diesel alternatives due to the relevance that diesel plays in the Queensland market.

3. Local suppliers and Renewable Diesel

Downer recognizes that biofuel mandates in the past have been plagued with capacity and financial security issues and an emphasis on ethanol rather than diesel alternatives. Importations of biofuels have strangled the Australian industry, and a mandate must recognize that the source of material (ie the 'feedstock') used to manufacture the fuel be supplied in close proximity and production secured locally. Without this, the market will be swamped by imported renewable fuels - which completely defeats the stated aims of the Queensland Government.

Given the size of the fats and oils market in Queensland, and to ensure that demand does not make biodiesel uncompetitive, Downer would like to see renewable diesel included in the biofuels discussion.

Renewable diesel is a non-oxygenated drop-in alternative to diesel and biodiesel and can be produced from biomass or recycled waste that is high in organic, bio-derived content. Renewable diesel is chemically indistinguishable from mineral diesel (ie is a 'drop in fuel') but comes from bio-derived sources and is likely to be the resultant product of bio-refining and bio-manufacturing, whereby biomass is converted into value-added chemicals, plastics and fuels.

There are large unused feedstock streams currently available in the Queensland market for the production of renewable diesel such as tyres, conveyor belts and other rubber products, and it is through the combination of all of these future fuels that regional development and fuel security will be obtained.

Renewable diesel is also a step towards establishing a viable bio-derived jet fuel industry which currently cannot incorporate oxygenated fuels in the fuel blend. Blends of renewable diesel and jet fuel are currently being investigated to determine efficacy and safety, and this is an important step in

¹ Australian Petroleum Statistics, Office of the Chief Economist, Department of Industry and Science, Canberra, 15/05/2015

assisting the renewable fuels industry to be a viable contributor to a larger bio refining industry in the future.

4. Bio-manufacturing and Otreecycle

Downer plans in time to commission a bio-refinery in Queensland which will be recycling old mining tyres (OTRs) as well as conveyor belts and other rubber products and making renewable diesel and distillate products. OTRs are specifically made from natural rubber, a bio-derived, renewable plant source.

The facility – known as “Otreecycle” – will be able to produce diesel through dedicated slow pyrolysis reactors.

In 2009-10, only 16 per cent of end-of-life tyres in Australia were recycled and less than 3% of mining tyres were recycled. It is now less than 1%. OTRs and conveyor belts are dumped ‘in pit’ or under waste rock dumps on sites all over the state. In addition to this, passenger units, truck tyres, agricultural tyres and aviation tyres are all dumped in landfill or sent off shore to be burnt in other countries, frequently illegally and breaching the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes.

Each year, more than 18,000 tonnes of OTRs are dumped on mine sites in Queensland alone. In addition to conveyor belts, passenger units, truck tyres, aviation tyres and agricultural tyres, each year approximately 80,000 – 100,000 tonnes of rubber products are available to turn into renewable diesel in Queensland.

This equates to between 30 and 45 million litres of diesel fuel each year in Queensland alone.

OTRs and conveyor belts can be disposed on sites under existing environmental licencing provisions which means that a valuable energy resource is lost.

5. Time-frames and markets

A mandated use of the renewable fuels would ‘kick-start’ the market for biodiesel and renewable diesel for a period of time, and would only be required to support the industry until such time as it is regular practice for the industry (and possibly when environmental licences are altered to no longer allow the dumping of tyres in pit and under waste rock dumps). The changing of environmental licencing would also offset any possible negative impacts by the proposed changes to excise arrangements by the Federal Government.

After a 10 year period, the use of renewable fuels would be well established in the market and could be phased out over a further 5 year period.

Importantly, it must be highlighted that any mandate on the use of biodiesel or renewable diesel must be levelled at the wholesale market. More than 80% of the diesel sold into Queensland is wholesale, not retail. It would be quite pointless to have a mandate that addressed retail diesel rather than wholesale.

A mandated level of 1-2% biodiesel or renewable diesel, rising to a 10-20% mandate over a period of 10 years, would not be unrealistic to drive the market uptake and the commissioning of new facilities.

Significantly these new developments will build upon established primary industry facilities, leverage our substantial scientific expertise and encourage investment, particularly in regional and remote communities where mining is a dominant commerce. They will diversify the state’s economy and potentially generate technologies that can be exported around the world.

6. Sustainability Framework

Downer strongly supports the use of sustainability criteria for the production of biofuels and to this end has indirectly been working on the development of ISO's TC248 – "*Sustainability Criteria for Biofuels*" for many years.

The undersigned is the Chair of Australia's mirror committee for this development with Standards Australia and the framework has recently been published for final approval. It would be an ideal framework for the immediate integration by the Government into the mandated program.

The criteria have taken nearly seven years to develop with industry, NGO and government support and thus have been reviewed with rigour and scientific credibility. The undersigned is available to speak to the Queensland proponents of the mandate should this be required.

7. Expert Panel

Downer is particularly supportive of an expert panel / implementation board which incorporates a specific mining and diesel focus and to that end, proposes the undersigned as a member of such a panel.

Any panels must incorporate industry representatives at the user end, as well as representatives from producers, marketers, retailers and wholesalers.

It is also suggested that an expert panel for diesel replacement fuels be run concurrently with such a panel for ethanol and petrol replacements as the two markets are distinctly different in many respects.

8. Summary

It is for the above reasons that Downer requests that renewable diesel as well as ethanol and biodiesel be considered as valuable bio-derived fuels.

I thank you for the attention you have given to this submission. I can be contacted at any time at

[REDACTED]
Yours sincerely



Heather Bone
General Manager – Otreecycle
Downer Mining