

Response to *Towards a clean energy economy: achieving a biofuel mandate for Queensland* discussion paper

Kellogg Brown & Root Pty Ltd (KBR) is pleased to provide feedback on the Queensland Government discussion paper, "*Towards a clean energy economy: achieving a biofuel mandate for Queensland*".

KBR is a multinational organisation with a long history in the energy sector. KBR has recently designed two of the three gas pipelines to be installed in Queensland and is a senior partner in the execution of the Gorgon and Ichthys liquefied natural gas (LNG) projects. . KBR has a solid history in renewable fuels, including our work in the field of municipal solid waste to energy in the United States, and our leading partnership in the Solar Biofuels Research Centre, for which we designed the pilot plant facility.

A KBR representative attended the industry workshop #3 at 111 George Street on Wednesday 24 June 2015.

Having reviewed the discussion paper, KBR would like to raise the following points.

We support the establishment of a clean energy mandate in Queensland and believe this is an important opportunity for Queensland.

KBR also supports the addition of biofuels other than ethanol. We recommend that the second mandate should be expanded to include renewable fuels in general, rather than just bio-diesel. KBR suggests that limiting the definition to a renewable diesel will limit the potential development of bio-crude products from hydrothermal liquefaction of waste (for example, renewable petrol).

We believe it is important to be non-specific on the second mandate of renewable fuels to ensure that renewable technologies that are not yet known are not excluded from the potential benefits of this type of policy.

There are advantages to allowing flexibility for wholesalers and retailers in how they achieve the renewable targets so that their choices provide the best outcome for each region or market. For example, it may be better to allow a predominance of bio-diesel in Townsville, where the animal processing industry is concentrated, while the sugar belt may be better placed to rely on ethanol, and south-east Queensland may suit alternatives such as bio-crude derived products.

KBR supports the proposal of a sunset clause. Our concern is that the proposed period of 10 years is too short to enable investors to develop the technology sufficiently to be self-sustaining.

As a strong supporter of fact-based decision-making, KBR supports the data collection requirement, and propose that it uses web-based data acquisition tools. We suggest that the data should be in an appropriate form so that industry can use it to make investment decisions, and the policy should state how the data will be used.

The intent of the Queensland Government to seek expert advice before making decisions is supported; however, we would be concerned by the establishment of an expert panel, which may not be best-placed to advise on all the required decisions. KBR recommends that affected parties and appropriate industry experts are consulted in the lead-up to decision-making.

Queensland, like the rest of the world, is exposed to variable weather patterns including drought. We believe that a truly sustainable renewable fuel industry should allow for this factor in its business cases. Options may include the ability to import feedstock from other regions or having a multiple feedstock capability. To some extent these capabilities are reliant upon transport infrastructure and cost.

The current forecasts by reputable international bodies predict a substantial increase in the need for food production. We suggest that the policy should be directed to favour the use of feedstock that does not compete with food production for nutrients, water and arable land. To accommodate this, KBR suggests that preference be given to second and third generation biofuels that are able to use waste streams or byproducts of food and other biomass industries such as forestry.

The policy currently does not address the handling and disposal of waste streams generated by the production of the fuel. There is potential for these to be intractable and/or toxic, and disposal should be addressed in the policy.

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