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Submission: Transport and Infrastructure Net Zero Consultation Roadmap

The Australian Sugar Milling Council (ASMC) welcomes the opportunity to provide a submission to the Transport and Infrastructure Net Zero Consultation Roadmap. The sugar manufacturing sector can be the solution to the net-zero journey of many hard to abate emissions within the transport sector including aviation, heavy vehicles and maritime movements. Through the provision of a cost-effective domestic biofuels capability, we can not only provide net-zero solutions, but contribute to Australia's energy security and the economic wellbeing of regional communities. To ensure this capability is established, more government and market resources and focus needs to be directed towards ensuring the availability of biofuels feedstocks.

About the Australian Sugar Milling Council

The ASMC is the peak industry body for the Australian sugar manufacturing sector – with the sugar industry contributing $4.4 billion p.a. to the Australian economy and supporting more than 20,000 jobs. The ASMC works with members, industry stakeholders and government to develop and promote policies that enhance the sustainability, viability and economic contribution of the sugar industry in Australia.

Overview

The ASMC has focussed on questions relating to freight transport (question 6) and the provision of biofuels as a solution to hard to abate emissions from aviation, heavy road vehicles and maritime movements (questions 9-12 and questions 17-20).

According to the Roadmap, biofuels will be the primary or substantial medium-term decarbonisation pathway for many hard to abate emissions from the transport sector. In meeting this challenge there are significant economic opportunities to be had. The Roadmap further notes that it is estimated that 60% of Australia's current jet fuel demand can be met by biofuels, worth about $10 billion p.a. ASMC analysis suggests sugar manufacturers can provide up to 8% of the domestic demand for sustainable aviation fuel (SAF). The advantage of sugar derived biofuels is that its production has been proven commercially. The challenge now is to produce it at significant scale.

Despite the clear need and economic opportunities, Australia has not made the required progress in establishing a domestic biofuels capability at sufficient scale. This challenge stems from the assumption that biofuels feedstocks are 'agricultural waste' and readily available, thereby undervaluing the economic worth of feedstock. Very little policy focus has been put on ensuring the ongoing availability of feedstocks, including:

- the competing uses for that feedstock and the attractiveness of those financial returns as compared to those available through the production of biofuels;
- the physical challenges in making feedstock available, transportation and the potential need to collocate production processes where the feedstock is available; and
- the broader policy and regulatory settings that may limit the availability of feedstocks or investment in its supply chain, including land-use planning provisions and industry regulations.

The sugar industry is also a user of freight transport, moving 30 million tonnes of cane across Queensland, one of the state's largest freight tasks. The majority of our freight task is handled by our cane rail network. Governments must invest in the maintenance of this network to ensure the task is not moved onto heavy road vehicles, increasing emissions and the emissions profile of biofuels.

Summary of recommendations

To overcome these challenges the ASMC provides the following recommendations:

- *Ensuring the cost-effective supply of feedstocks:* Greater government funding for feasibility and pre-feasibility work to identify viable solutions to the collection, storage and transportation of feedstocks, and the physical location of various processes to convert them into biofuels. The focus of funding on novel technologies and innovation is a necessary but not sufficient activity.
- *Incentives for the production of feedstocks:* Incentives including biofuels mandates with explicit local content provisions and the development of not only Guarantee of Origin certificates but pathways for viable markets for these certificates will increase the viability and reduce the risk of investing in this supply chain.
- *Government-industry working group on the feedstock supply chain:* With respect to sugar-derived biofuels, the ASMC recommends the establishment of the working group (including the Queensland Government) to ensure the ongoing availability of relevant feedstock with consideration of ensuring favourable land-use planning provisions, positive industry policies and regulations that encourage investments, and a more granular mapping of what the biofuel supply chain would look like.
- *Investment in cane freight networks:* Investments in this freight infrastructure will not only reduce transport emissions but the emissions profile of biofuels that rely on this supply chain for their production

Considerations with the respect to freight transport (question 6)

The National Freight and Supply Chain Strategy has explicitly set itself a target to reduce emissions from freight transport, and as per the Roadmap, modal shift from road to rail is one of the strategies. Despite the focus on rail, the value and contribution of Queensland cane rail has been neglected. This network is responsible for moving 30 million tonnes of cane p.a. and has a replacement value of $2 billion.

The unavailability of cane rail becomes a significant issue with respect to emissions, where heavy road vehicles become the only alternative for this task. The impact of this task moving onto the roads has become a live issue with the closure of the Mossman Mill, with road transport the only option to get cane to alternative mills including Gordonvale. This will not only increase emissions but create significant congestion on one of Australia's premier tourist trails.

Investments in this freight infrastructure will not only reduce transport emissions but the emissions profile of biofuels that rely on this supply chain for their production. The neglect of the cane railway network by state and federal governments is surprising, noting that it is one of the largest freight tasks in Queensland.

Considerations with respect to transport sectors with hard to abate emissions

Heavy road vehicles (questions 9-12), maritime (questions 17-18) and aviation (questions 19-20).

The opportunity

According to the Roadmap, biofuels will be the primary decarbonisation pathway for the jet aircraft industry. Similarly, biofuels will provide viable medium-term emissions reduction pathways for heavy vehicles and maritime movements. The Roadmap further notes that it is estimated that there is enough feedstock to produce up to 60% of Australia's current jet fuel demand, worth about $10 billion p.a.

Analysis undertaken by the ASMC, suggests our sector can produce more than 8% of domestic SAF needs through the use of by-products from the production of sugar, including bagasse. We can

provide significant portion of the biofuels market if we were to utilise cane juice and the ethanol pathway for biofuels production

According to BP, biofuels derived from sugar is one of the most efficient methods to produce biofuels, including SAF. Unlike other methods and feedstocks, our sector already produces biofuels (through ethanol) and the technologies and processes underpinning them have been proven commercially. Our sector has the scale and the proven commercial acumen to meet a significant portion of domestic demand.

The challenge

Despite the opportunity and the clear need from various sectors of transport, Australia has not made the required progress in developing a domestic SAF industry or move towards the required production of sustainable biofuels at scale for use in heavy road vehicles and maritime movements. This challenge stems from the assumption that biofuels feedstocks are 'agricultural waste' and readily available, thereby undervaluing the economic worth of feedstock.

Using SAF as an example, the policy and regulatory focus to date has been on overcoming demand side issues, particularly the significant cost differential between fossil fuels and biofuels. The policy development process has largely ignored the need for supply side incentives, with government initiatives focussed on issues of technology and innovation. As an example, ARENA's Sustainable Aviation Fuel Funding Initiative focuses on feasibility and pre-feasibility of 'novel technologies' that will establish a SAF supply chain.

While the cost of biofuels has been identified as a demand side challenge, the same importance has not been placed on the opportunity-costs for feedstock providers in locking themselves into a SAF supply chain. The misconception that certain feedstocks are 'waste' neglects their alternate economic uses. Sugar by-products can be used for a myriad of alternative activities including the production of renewable electricity, fertilisers, and molasses for supplemental feeding of livestock. The SAF supply chain must provide an investment opportunity, risk profile and returns that would put providers of feedstock in a comparable or superior position to alternative supply chains.

Land-use planning becomes an extremely important determinant in the future availability of feedstocks, such as bagasse and other by-products from the production of sugar. Land under cane is coming under pressure from not only urban encroachment but also government policies including the establishment of renewable energy zones (REZs). While we are not suggesting that REZ's will replace all land under cane with renewable energy infrastructure, the challenge is that sugar manufacturing is a high throughput capital intensive activity. Even incremental changes in the availability of cane supply can put the viability of the sugar supply chain into question.

The physical location of the SAF supply chain will determine the cost of production and the emissions reduction potential of low carbon liquid fuels (LCLF). Most identified biofuels feedstocks are low value by weight and low weight by volume. As such, the transportation of these feedstocks will not only disproportionately add to the cost of the final product but increase the emissions profile of the LCLF. As such, sugar mills would be the natural point to undertake a significant portion of processing of sugar-related feedstocks into biofuels, collocating production with available feedstock. This would reduce freight transport miles associated with biofuels, and consistent with the roadmap principle of 'avoid-shift-improve', reduce the emissions profile of low carbon biofuels and contribute to its financial viability.

Similarly, feedstock providers are likely to make significant capital investments in long-lived assets that will determine how their feedstocks are used (for example cogeneration), locking out other uses and supply chains. This suggests that the window for the establishment of a viable domestic biofuels industry closes with each of these investments, making this opportunity very much time bound.

Way forward and recommendations

Ensuring the cost-effective supply of feedstocks

Greater funding must be provided for feasibility and prefeasibility work on supply chain solutions for the delivery of cost-effective feedstock, including the transport and storage of feedstock, and the location of various production processes for biofuels.

We commend the Queensland Government's $4m Bioenergy Fund that provides grant funding for prefeasibility and feasibility studies for any activity up and down the bioenergy supply chain, providing some limited funding to progress issues relating to feedstocks. Significantly more funding is required noting the size of the challenge, with Federal Government having a role to play in providing resources beyond those that promote exploration of new technologies and innovation.

This can be achieved by the inclusion of feedstock related initiatives into existing government programs identified in the Roadmap, or the establishment of a dedicated workstream on the supply of feedstock.

Incentives for the production of feedstocks

Market or government incentives must be provided to overcome the opportunity costs in feedstock providers. As previously mentioned, biofuel feedstock are not waste products and have economically valuable uses in more established and lower risk markets.

While there have been calls for biofuels mandates, these mandates must explicitly have local content provisions to stimulate the domestic production of biofuels. A mandate without local content provisions would be a straight subsidy to end-users, who could source imported biofuels.

With respect to supply side incentives, the ASMC supports the development of Guarantee of origin certificates for low carbon biofuels, however, this is a necessary but not sufficient exercise to spur investment and buy-in into the biofuels supply chain. The government must work with industry to develop a clear pathway as how a market for these certificates would develop over time, the role of government in developing a sustainable market for certificates, and modelling and scenario analysis as to the potential value of these certificates over time. Without this assurance, the risk may be too high for most to invest at scale in this supply chain.

Government-industry working group on the feedstock supply chain:

With respect to sugar-derived biofuels, the ASMC recommends the establishment of a government-industry working group (including the Queensland Government) to ensure the ongoing availability of relevant feedstock. Considerations for the working group include:

- Land-use planning provisions that maintains agricultural land that provide relevant biofuels feedstock, and the identification of expansion opportunities. This includes valuing the agricultural land not just on its soil and environmental attributes, but the value of associated infrastructure including irrigation networks, and transport networks like cane rail.
- Review of industry policy and regulatory provisions that significantly increase the risks of new investments in the sugar supply chain.
- Development of a more realistic mapping of the biofuels supply chain, including understanding of the economic cost-benefit of viable locations for various stages of processing for biofuels.
- Investment in the rail networks that underpin this supply chain.

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Yours sincerely

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