



10 January 2017

Queensland Productivity Commission  
PO Box 12112  
GEORGE ST QLD 4003

Dear Sir/Madam

### **Inquiry into Manufacturing in Queensland**

The Australian Sugar Milling Council (ASMC) is the peak industry organisation for raw sugar milling in Australia. The ASMC represents some 95 per cent of Australian raw sugar production.

The ASMC welcomes the Inquiry into Manufacturing in Queensland. The sugar industry has a long history of production in regional areas of Australia, and contributes to the social and economic wealth of many regional centres in Queensland and northern New South Wales. There is also significant potential for expansion of existing technologies, such as electricity and ethanol, and for a range of other biofuels and bioproducts derived from sugarcane.

Please find attached the ASMC submission to the Inquiry into Manufacturing in Queensland. While we have not directly addressed the questions, we have covered topics most relevant to the sugar industry and the opportunities offered by sugar mills in regionally based manufacturing now and into the future.

Yours sincerely

A handwritten signature in black ink, appearing to read "Dominic V Nolan". The signature is fluid and cursive, written in a professional style.

Dominic V Nolan  
Chief Executive Officer



## Inquiry into Manufacturing in Queensland

### Australian Sugar Milling Council submission, 10 January 2017

The Australian Sugar Milling Council (ASMC) is the peak industry organisation for raw sugar milling in Australia. The ASMC represents some 95 per cent of Australian raw sugar production. There are 24 sugar mills in Australia, owned by eight companies. These mills produce raw sugar, which is either directly exported or refined in four Australian refineries, including one in Bundaberg and one in Mackay. Around 80 per cent of raw sugar is exported while most refined sugar is sold domestically. The sugar industry is a cornerstone industry for many regional centres in coastal Queensland and is the key driver for economic activity in many of these centres.

#### The sugar industry is regionally based manufacturing in Queensland

The sugar milling sector is a significant manufacturer in Queensland, processing up to 35 million tonnes of sugarcane per year, and manufacturing more than 4.5 million tonnes of raw sugar and more than one million tonnes of molasses. In addition, mills export more than 500 MWh of renewable electricity through cogeneration. The total value of sugar production is typically in the order of \$1.5 billion to \$2.0 billion annually. There is significant capacity and aspiration within the sector to advance manufacturing through bio-futures products, including greater expansion of renewable electricity, and a range of biochemical products, with bio-ethanol already produced by one company. Diversification of our manufacturing products is intended to largely occur within the current footprint of the industry, with existing sugar mills providing a critical industry clustering location, given the extensive investment in services infrastructure (e.g. waste water management), ready supply of energy, co-location of feedstock, and available land.

Sugar mills generate renewable electricity from waste sugarcane fibre, meeting their own electricity needs and exporting excess electricity to regional distribution networks during the crushing season (June to November). Some mills have extended their cogeneration capacity and now generate for 50 weeks of the year, and are virtually base-load generators in terms of reliability. This expanded cogeneration capacity increases regional energy security, reduces government cost of Community Service Obligations (CSO) and dampens wholesale market prices. In 2015 sugar mills in eastern Australia produced over 1,200 GWh of renewable electricity, the equivalent of powering 207,600 homes. With the right policy settings, this electricity generation could be expanded to over 9,000 GWh per year, without any additional sugarcane production.

#### The sugar industry offers opportunities for advanced manufacturing

Investment in advanced manufacturing typically occurs over a continuum at any one mill site or company. Increasingly, sugar milling companies have moved to an integrated multi-mill model to deliver enhanced crushing and sugar production reliability, and scale opportunity for cogeneration.

Under this model, the cane from a farm may be crushed, juice extracted and transformed to raw sugar at one mill, with the surplus cane fibre (bagasse) moved into storage, to be

reclaimed later in the season (or offseason) for generation at a major cogeneration facility. As such, the milling company will invest in significant expanded cogeneration capacity at a mill that minimises transmission/distribution losses, and can reasonably be retrofitted with a condensing unit, to enable cogeneration beyond the crushing season (i.e. generate electricity without the excessive steam production that occurs during the crushing season).

Three sugar milling companies are in the process of optimising this system in Queensland, with two major cogeneration investments in the last 10 years, and another four projected over the next four years. These projects enable generation for 9-12 months of the year, ensuring additional generation during the first quarter of the year (Q1), when state demand for electricity is highest.

Advanced manufacturing in the sugar milling sector is contingent on first expanding renewable electricity generation, as reliable energy (and often steam) is critical to realising the next stage of investment - alternative biochemical products.

### ***Electricity policy***

Realising advanced manufacturing opportunities, however, is hampered by policy uncertainty, both federal and state. The lack of certainty in energy policy has already significantly impacted on investment in renewable electricity by the sector. Despite over five years of exhaustive federal and state energy policy review, regional Queensland continues to be saddled with non-competitive tariff structures, and transition measures, that drive inefficient behaviours - and investment.

For example, sugar mills enhance utilisation of distribution networks. The peak energy demand for mills is during Q2 and Q3, when both regional and state demand is lowest. Conversely our lowest demand is during Q1, when regional and state demand is highest. However, there is no real mechanism for valuing or rewarding this operating profile, or how much consideration is given to it during asset investment evaluation by the distribution network. As a result of a recent energy intelligence analysis ASMC undertook for 14 mills, in partnership with the Queensland Government, it is clear that if these mills were investing in enhanced demand management, to manage their peakiest 1% loads and power factor, approximately \$5-6 million could be avoided in CSOs. However, the mills collectively would only see \$1 million in avoided electricity costs. In effect, the mills would be investing to subsidise Ergon. The disparity of this effect is further enhanced when contextualised against electricity revenue. Despite exporting more than ten times the amount of electricity imported by mills, the total revenue was only twice the amount expended on import.

This means the current tariff and transition arrangements are more likely to drive perverse investment outcomes. As mills gear up for a 2020 tariff transition, in the absence of real reform around Ergon tariffs, and critically, whole of government, whole of energy policy, mills are more likely to consider behind the meter solutions (ie diesel generation). This is the worst possible outcome, as there is a far greater opportunity cost, in that mills delay investment in expanded cogeneration, which, as exportable electricity, enhances regional energy security while enabling the Queensland Government to meet its 50% renewable energy target. Critically, the window for realising this

cogeneration opportunity is linked with the Renewable Energy Target, and as identified by the 50% RET Government Expert Panel, the window for investment closes after 2020. The Queensland Government's response to the QPC inquiry into Electricity Prices is a potential opportunity to explore solutions to the current perversities within the system.

### ***Biofuels and Biofutures***

While the milling sector has welcomed the Queensland Government's commitment to biofuels and a biofutures sector, it is an ongoing concern that associated policies remain underdeveloped. The Queensland Government continues to advocate for the rapid development of a biofutures sector, but there remains challenges in terms of policy structure and substance to bring this to fruition. The sugar milling sector is more likely to adopt proven technologies, rather than consider research-driven pilot programs. Mill companies are more likely to invest where there is a clear market opportunity. With several international companies within the sector, who are invested in biochemical manufacturing associated with their sugar facilities internationally, it is increasingly clear that there is no lack of appetite for companies to invest - as long as the investment is competitive, and the regulatory framework is stable. The lack of certainty and consistency around energy, environment, land, water and planning (particularly around the protection of good quality agricultural land) will often mean that a company considering projects in Australia, versus elsewhere in the world, is increasingly finding projects elsewhere more attractive.

This lack of certainty is exacerbated by the flawed, politically motivated sugar marketing legislation passed by the Queensland parliament in late 2015. In contrast, international governments have consistently developed policies around biofutures with unambiguous targets, and deliberate measures to attract and retain investment. Successive Federal Governments have consistently argued that Australia is a preferred point of investment as a western nation with low sovereign risk. The sugar milling sector suggests this is no longer the case.

### **Regulatory environment for the sugar industry**

Policy certainty and longevity is important for investment in growth. Expansion and diversification require significant capital cost. Bipartisan support for initiatives and policies that last at least ten years is needed to invest with certainty.

Conflict in land planning and competition for land from other forms of agriculture, urban expansion and industrial use can result in the fragmentation of cane land, and reduced efficiency and scale for milling operations. The sugar industry's efficient transport and logistics systems help it to remain globally competitive and are significant investments built over a long period of time. Scale is important, and loss or fragmentation of production area is a risk to the effectiveness of those systems. Land planning regulations need to consider the existence of physical infrastructure (such as for irrigation, processing and transport) and social infrastructure (communities, skills and supporting services) in addition to the biophysical potential of the land. Including infrastructure in these considerations protects the existing investment by industry and communities, and provides security for industry considering further investments with long pay back periods. This will

be particularly important for the building of advanced manufacturing on the existing operations.

Policy certainty is also important for investment in innovation, which also has long pay-back periods. Innovation and technology are critical to maximising efficiency and productivity across the sugar industry supply chain and ensuring global competitiveness for raw sugar. Innovation is also critical to enabling advanced manufacturing opportunities from sugarcane, as discussed above. Technology is also important in monitoring and supporting best management practices, which improve productivity and environmental outcomes.

In addition to the policies in Figure 9 of the Manufacturing in Queensland Issues Paper, the sugar industry is subject to a number of other regulations including, but not limited to:

- *Queensland Sugar Industry Act 1999* and related amendments
- Renewable energy legislation (including RET)
- National Greenhouse and Energy Reporting (NGER) legislation
- National taxation laws
- Queensland Waste management
- Queensland Biofuels mandate and related sustainability criteria
- Queensland electricity supply (generation, CSO, regulated prices)

Policies such as RET and the biofuel mandate provide important opportunities for diversification in sugar milling, and are an important stepping stone for advanced manufacturing. Changes to regulations that are politically driven are often damaging to industry, such as the 2015 amendments to the *Queensland Sugar Industry Act 1999*, which changed the marketing arrangements of Queensland sugar and introduced pre-contract arbitration. The legislative changes cost the industry millions of dollars in compliance response without generating any additional revenue. Of even greater concern, it halted major capital projects worth hundreds of millions of dollars and has put future foreign investment in regional manufacturing at significant risk. Regulations need to be evidence based, and developed in consultation with industry to ensure they have the desired affect and avoid unintended consequences. The Queensland Marketing legislation did not pass any of the regulatory impact or public benefits tests normally required of regulatory intervention.

### Skills and Training

Sugar mills are an important source of employment and training in regional Queensland. Sugar mills place a strong emphasis on training, and they train more apprentices than they need. While the milling process itself is lean in terms of a manufacturing process, mill maintenance remains labour intensive and provides opportunity for training in trades. There are typically 250-300 apprentices in training at any one time across sugar mills in Queensland.

With a greater focus on technological development throughout the supply chain, the required skill-sets will become increasingly diverse. Options need to be explored to ensure traditional training through universities and VET institutions keeps pace with skills



requirements of the industry and other manufacturing industries in a changing technological environment.

Sugar Milling operations are a high risk industry located in the regions with an ongoing need for training resources for employees. These employees cover traditional trades, semi-skilled and specialist sugar manufacturing skill sets. One of the key challenges for sugar manufacturing in developing these specialist capabilities in regional centres is the ability to access quality training services in a timely and cost effective manner.

Future skills and training will also need to embrace the social and learning expectations of the current and future generations. It will also need to consider community expectation in relation to minimising impacts on the environment by food production and other manufacturing.

A government program which supports quality and regionally based Queensland training delivery would be very welcomed by the industry. Below is a summary of recent points ASMC made to Jobs Queensland through the *Positive Futures: Apprenticeships and Traineeships in Queensland* inquiry:

1. Sugar milling is a long term high user of traditional apprenticeships in regional locations and is keen to try new ways to utilise traineeships and non-traditional apprenticeships and qualifications.
2. Support for apprentices living away from home in regional locations should be structured to make it less difficult for regional employees and employers.
3. Literacy and numeracy tutorials would encourage more mature age and diversity in apprenticeship applicant pools.
4. Financial support can make it easier for regional employers to take on apprentices and provide improved access to training opportunities.
5. Improved communication on apprenticeship programs will help employers understand how to use the system and employ more apprentices and trainees.