MSF CoGeneration Plant Tableland 2022

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SUGAR POLICY INSIGHTS

INSIDE

AUSTRALIAN Sugar Milling COUNCIL

FROM THE CEO - KICKSTARTING THE VISION

It is now just over 19 weeks since the crush commenced. Unfortunately, wet weather has caused weeks of disruptions making harvesting impossible and forcing mills to sit idle. Every dry day between now and the end of the crush needs to be taken advantage of if we are going to convert this year's bumper crop into raw sugar.

While the weather outlook over the next couple of months is not all that favourable, it is important that we retain the optimism that agricultural industry stakeholders are renowned for and do all we can to make this 2023 season a successful one. Almost all mill areas are looking at late finishes to the crush because of the wet weather with a number of mills already planning to crush through the Christmas period to get the crop processed.

A real feature of the sugar industry is the vastness and diversity of our operations.

Just recently, the ASMC Board and secretariat travelled to Tully for our September board meeting as guests of Tully Sugar Limited (TSL). We were fortunate to receive a full tour of the milling and proposed new cogeneration operations and a field tour to observe some of TSL's highly successful cane variety and productivity programs. We were also able to meet local leaders over dinner to discuss their vision for the region and the central role of sugar.

A key area of discussion at our ASMC board meeting is the need to improve the resilience of the industry.

Indeed, and whilst extremely positive - our stellar situation today of an anticipated 33 million tonne Queensland cane crop and ~A$585/t raw sugar prices

FROM THE CEO – KICKSTARTING THE VISION *(Continued from page 1)*

Rachele Sheard, CEO

– is the exception and not the rule. In fact, over the past five years average raw sugar prices were $A436/t with 30.8 million tonnes of average Queensland cane production.

With the assistance of BDO Projects, we recently concluded our report – *"Queensland: Raw sugar cost of production"*. The objective of commissioning this report was to understand our true costs of producing raw sugar and our vulnerability to those five-year average prices and levels of cane production. The results tell us that at five-year average prices:

- By-product revenues are extremely important for mill viability and to fund upgrades.
- Achieving full mill-utilisation can significantly reduce these milling costs.

We plan to brief our industry partners on this analysis over the coming weeks and months.

The BDO analysis underlines the imperative of, and need for, an agreed, whole-of-industry Vision to increase cane supply, increase sugar revenues and to commercialise value-add revenue diversification projects to increase profitability and resilience.

Our "Sugar Plus" Vision document contains many priorities. The challenge for industry now is to agree on those priorities and resource allocation. Beyond the Industry's 5-Year Trade Policy and Market Access strategy that is already in train, the following outlines where ASMC believes the industry could commence its Vision discussions:

- **Renewed cane railway infrastructure.** Development of the business and public policy case for new cane railway infrastructure and road upgrades in Queensland regions to support future horizontal expansion, to remove trucks from public roads and to improve public safety where truck movements are inevitable.
- **Skills and labour shortages.** Development of a whole-of-industry strategy to identify and address current and future skills and labour needs across the R&D, grower and milling functions of the industry.
- **Prime agriculture land protections.** With government, development of stronger protections for prime agriculture land, especially land that has supporting infrastructure (rail, water etc.), from incompatible uses such as urban encroachment, solar and wind farms.
- **Dialogue on state and federal marketing laws.** With government, establish a dialogue amongst stakeholders to assess the true costs and benefits of these laws – especially the merit and need for pre-contract arbitration.
- **Value-add revenue diversification** – With government, continue to undertake feasibility and techno-economic assessments of the more prospective diversification opportunities that are emerging and to encourage parties to establish pilot and demonstration plants near mills.
- **Sustainability.** Complete the industry's Life Cycle and Materiality assessments and begin to prepare for the sustainability requirements that we know are coming.

To this end, and following on from the completion of our L.E.K report, it was great to see the announcement in the Queensland Government's Energy Plan for $4 million to fund bioenergy feasibility and technology studies.

In this edition of Sugar Policy Insights we discuss why the ASMC and member mills are potentially interested in more cogeneration and separately, areas of the Energy Plan that we'll be keen to engage Government on.

We look forward to advancing these issues with the industry, communities, local, state and federal governments.

WHY THE INTEREST IN MORE COGENERATION?

David Rynne, Director, Policy, Economics and Trade

ASMC recently tasked L.E.K Consulting to assess the commercial potential of five energy diversification opportunities for the industry:

(1) More cogeneration power;
(2) More bio-fuel;
(3) Bagasse pelletisation (for export);
(4) Bio-methane; and
(5) Green hydrogen.

Utilising the latest available information and data, L.E.K found that cogeneration, bio-methane and bio-ethanol (as sustainable aviation fuel) have strong commercial potential but are challenging. They would, in all likeliness require a mix of various government support measures and improved (investment) regulatory settings to proceed. The report also concluded that hydrogen and bagasse pelletisation are not strong opportunities at this time but developments should be monitored closely.

ASMC has previously published a summary of the report's key findings and that can be found on our website. Drawing on recent Government announcements and the L.E.K analysis we take a deeper dive as to why cogeneration warrants closer consideration.

1. ALIGNMENT WITH GOVERNMENT POLICY

The Queensland Government recently announced its 10-Year Energy Plan with plans to legislate for an 80% renewables target by 2035; a phase-out of coal fired generation by 2035; and other policies that support de-carbonisation and renewable energy demand. Achieving 80% renewables is an audacious task and capacity would need to increase from around 5 GW's today to an estimated 25 GW's by 2035 (equivalent to $62 billion in new investment).

Cogeneration utilises bagasse as a renewable feedstock. Producing around 9 million tonnes of bagasse per annum from around 30 million tonnes of cane purchased, more bagasse can become available for more cogeneration if mills invest in a drier bagasse supply and improved steam, mechanical and thermal energy efficiencies in the mills themselves.

Preliminary estimates indicate that the milling sector has a technical ability to substantially increase its cogeneration capacity – potentially from **438 MW's** today to in excess of **1,500 MW's** (or 1.5 GW's).

2. ALIGNMENT WITH SYSTEM REQUIREMENTS

Whilst delivering significant greenhouse gas abatement, adding another 20 GW's of intermittent renewables by 2035 will create enormous disruption to the Queensland energy system without appropriate planning and action. Incentivising significant new investment in a range of complementary and essential firming and dispatchable supply options is a priority.

Firming supply is needed to provide essential system support when intermittent renewables fail to meet system needs (inertia, frequency control and system strength etc) and overnight dispatchable supply increased due to the limited ability of batteries and pumped storage to supply all of Queensland's peak night and overnight needs.

Given the very low cost of solar and wind, Government will need to create regulatory and policy structures to incentivise alternative firming and dispatchable supply options. The form of these incentives is under policy development at present (for example, capacity markets and essential system service proposals).

Cogeneration from bagasse has the ability to be both a **firming** and **dispatchable** option. Depending on a range of factors, additional cogeneration can be brought on within 30 minutes to assist the system and supply could also occur during the peak night and overnight periods. The size of the opportunity and potential revenue benefits of these options are demonstrated at Figures 1 and 2.

Figure 1 demonstrates that a significant 4-6 GW's of alternative supply will be needed for the Queensland peak and overnight periods when coal eventually leaves the supply mix.

Figure 2 demonstrates the pricing volatility but increase in average power prices associated with Queensland evening peak demand (16:30-21:30).

3. ESSENTIAL REVENUE TO SUPPORT MILL VIABILITY AND TO FUND MILL UPGRADES

Sugar mills require significant upgrades and large injections of capital to maintain their operability and reliability.

Achieving adequate revenues on sugar and by-products is essential to fund these capital projects. Cogeneration is attractive to mills because it is known and understood from a technical and engineering perspective and because of the potential circular loop of benefits – that is, factory upgrades in new boilers and processing plant for example allows bagasse liberalisation to occur which allows more cogeneration to occur.

FIGURE 1: QLD ELECTRICITY GENERATION MIX – STANDARD WEEKDAY (GIGAWATTS, GW)

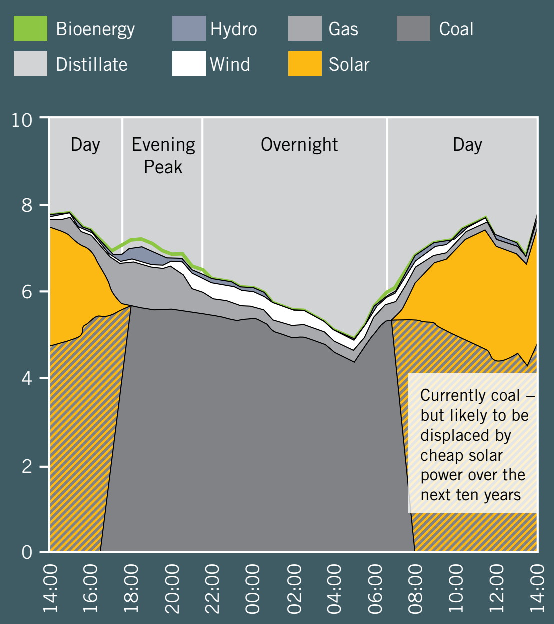
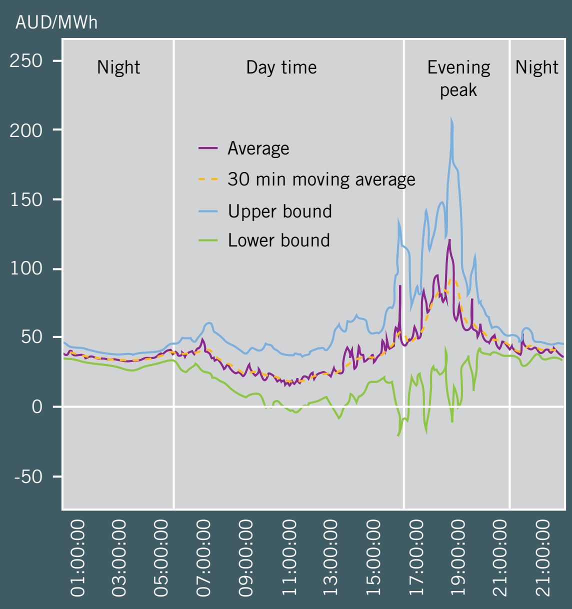


FIGURE 2: AVG QLD AEMO 5-MINUTE SPOT PRICE (365 DAYS COMMENCING 1 JAN 2020)



GOVERNMENT'S 10-YEAR ENERGY PLAN

David Rynne, Director, Policy, Economics and Trade

The ASMC has welcomed the inclusion in the Queensland Government's 10-year Energy Plan of $4 million to fund feasibility and technical studies to identify options and pathways to expand bioenergy generation and to support technology innovation.

The need for this program is consistent with the preliminary feasibility work commissioned by ASMC and its member mills in 2021. ASMC looks forward to working with Government under this new funding program to understand the true potential and benefits of more cogeneration including how regulatory processes such as generator performance standards can be improved.

ASMC also supports the following actions in the Plan:

- Funding to prepare Queensland's workforce and regions for growth. Member companies are already experiencing acute labour and skills shortages in QLD regions and there is already a shortage of technical expertise to deliver various energy services in the regions.
- A review of the planning framework for renewable energy development. ASMC remains concerned about the adequacy of the State Planning laws to protect prime agricultural land from incompatible land use.

An area we're also keen to engage on is the development of the proposed Pioneer-Burdekin pumped hydro to the west of Mackay. The implications on energy demand, the potential loss of cane land and water supply for cane irrigation will need to be understood as the work progresses.

AUSTRALIAN Sugar Milling COUNCIL

GPO Box 945
BRISBANE QLD 4001

Phone +61 411 933 500

Subscribe at asmc.com.au
@sugarcouncil

About ASMC

The Australian Sugar Milling Council represents Australia's raw sugar manufacturers and exporters.

Our members manufacture 90% and collectively market over 50% of Australia's raw sugar.

Our aim is to be a leading voice for change to create opportunities for a more profitable and sustainable Australian sugar industry.