AUSTRALIAN SUGAR MANUFACTURERS

Submission to the Parliamentary Inquiry into sugar bioenergy opportunities in Queensland

Australian Sugar Manufacturers

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Executive summary

About the Australian Sugar Manufacturers

The Australian Sugar Manufacturers (ASM) is the peak industry body representing the nation's sugar manufacturing sector, with the sugar industry contributing $4.4 billion annually to the Australian economy and supporting more than 20,000 jobs in regional communities. ASM works closely with its members, industry stakeholders, and government to develop and advocate for policies that enhance the sustainability, competitiveness, and long-term economic contribution of the sugar manufacturing sector. From the production of raw sugar, bio-based manufacturing and generation of renewable energy, the sector continues to support communities, create jobs, and foster a sustainable future for the industry, and the broader economy.

Importance to regional economies & in building a sovereign capability

In an uncertain trade and geopolitical environment, sovereign capabilities in food, fuel and energy are essential to the economic security of Australia. The sugar industry can play an increasing role in providing critical sovereign capabilities for the Australian economy.

Opportunities in the sugar industry will have significant benefits for Queensland, noting that it is a major employer in regional Queensland, supporting over 20,000 jobs across the value chain, and a sovereign manufacturing capability with a replacement value in excess of $20 billion.

The role of the industry in producing approximately four million tonnes of raw sugar per annum, one of the largest exporters in the world, is well known.

In addition to food production, the sugar industry is one of the few regionally located manufacturing capabilities that can deliver a broad set of products at a commercial scale. From our 30 million tonnes of cane, we produce approximately 9 million tonnes of bagasse (fibrous byproduct from sugar production), similar amounts of tops and trash at the farm level, significant quantities of molasses, and cane juice that currently produces approximately four million tonnes of sugar. These feedstocks provide limitless opportunities, including:

- The production of low carbon liquid fuels, including for the Australian Defence Force (ADF), with the potential to provide more than 30% of the domestic aviation fuel demand[1] (not including the utilisation of tops and trash).
- Baseload renewable electricity generation (835MW of potential capacity[2]) through cogeneration – enough power for nearly 500,000[3] Queensland homes.
- Providing for other low carbon energy solutions including biogas.

[1] CSIRO (2023), Sustainable Aviation Fuel Roadmap, at URL: https://www.csiro.au/-/media/Energy/Sustainable-Aviation-Fuel/Sustainable-Aviation-Fuel-Roadmap.pdf

[2] ASM (2025), Bioenergy Fund Project – Electricity Cogeneration in the Sugar Industry, yet to be published.

[3] A typical Queensland home uses between 5000-5500 KWh of electricity per annum (see AEMO at URL: https://www.aemc.gov.au/sites/default/files/2021-11/se_qld_fact_pack.pdf) . According to the ASM (2025) Bioenergy Fund Project, the sugar manufacturing sector has the potential to create 2.6TWh of electricity per annum in total. This quantum of electricity is equivalent to approximately powering 500,000 Queensland homes annually.

- The pelletisation of bagasse, which can act as an input to multiple forms of energy production, could be a no-regret pathway for industry and government noting its potential use for the production a myriad of fuels and energy generation processes.
- A catalyst for the establishment of bioenergy precincts where sugar production provides the baseload capacity and the transport and logistics infrastructure, to enable the scaling of energy production through the use of other feedstocks (such as hardwood residues and agricultural waste).
- Has significant opportunities in biomanufacturing in the longer term, including bioplastics and alternative proteins.

The challenge: securing the long-term viability of sugar manufacturing

Australia's sugar manufacturing sector faces significant viability challenges due to rising domestic costs and unfair global competition. Countries like India and Brazil heavily subsidise their sugar industries, treating them as sovereign capabilities for food and fuel security. Conversely, the US and EU governments erect significant barriers to their markets, denying access to Australian sugar. This leaves the Australian sugar industry highly exposed.

The cost of production in Australia has risen by over 64% for many mills since 2015[4], with 7 out of 13 mills analysed by the ASM now operating with costs at or above global sugar prices - prices that have been depressed due to heavy subsidies for our international competitors.

The lack of a strategic public policy response has compounded the sugar manufacturing sector's viability challenges. Unlike other industries (e.g. steel, timber), sugar manufacturing has not received strategic support or investment, outside of rescue packages for the now closed Mossman Mill. A free market approach by Australian governments in a global market where competitors are heavily investing in sugar as a sovereign food and fuel capability, does not bode well for the sector's long-term international competitiveness.

Under a business as usual (BAU) scenario, further mill closures will likely occur, and the impacts of these closures will be more profound for regional Queensland communities than the previous consolidation of the sugar manufacturing sector. The next potential closure of a sugar manufacturing facility will also mean that impacted growers will have nowhere to process their cane. On the most part, facilities are now located too far from each other to be able to take on the cane from other milling regions.

This threatens a regional industrial capability with a replacement value in excess of $20 billion and supports regional jobs and regional Queensland economies.

To be clear, sugar manufacturers are actively working to explore new opportunities outside of BAU, to ensure that the sugar industry thrives over the next decades.

[4] Feedback from ASM sugar manufacturing members, based on a 5.6% CAGR in costs since 2015

Diversification into bioenergy and biofuels the solution

The sugar industry has a clear path to viability, through diversification into biofuels, biogas, biomanufacturing and bioenergy. This may provide a viable and near-term opportunity to not only secure the viability of the sugar industry but create growth opportunities in the communities we operate in, while assisting with governments' energy transition and net zero agenda.

A successful diversification agenda will likely see the adoption of multiple new opportunities, whether in biofuels, biogas or bioenergy, across different sugar regions based on regional infrastructure availability, proximity to market, proximity to other supply chain partners, and other local considerations. This will not be a one-size-fits-all solution.

Barriers to the implementation of a diversification agenda

Key barriers include:

- *Significant capital costs & market uncertainty:* To capture the biofuels, biogas and bioenergy opportunities at scale will likely need billions in private investment, but many of these markets and supply chains are still developing and maturing face stiff competition by subsidised international competition and are dependent on government policy. Without government co-investment, particularly during the market forming phase, the risks are simply too high for such large-scale investments.
- *Project readiness:* This same uncertainty means that there are few shovel-ready projects due to high cost of feasibility and final investment decision analysis (2 to 4% of total capital cost) and the lack of any foreseeable market revenue. This may create a perverse situation where Australian demand side incentives create a subsidy for imported biofuels feedstock, such as Brazilian and Indian bioethanol, creating little economic value for Australia.
- *Infrastructure challenges:* Little work has been done around aggregating feedstocks for biofuels, biogas and bioenergy production, and the transport and logistics infrastructure needed to support this aggregation.
- *Energy market distortions:* The baseload synchronous nature of cogeneration is undervalued and not rewarded by the National Energy Market, stifling investment in utilisation and expansion of cogeneration.
- *An R&D agenda that is not fit for purpose*: The sugar industry requires government co-funding to ensure the industry R&D agenda can undertake the suite of work. The current sugar industry R&D agenda is not properly resourced or skilled to maintain programs for traditional sugar production as well as address the R&D opportunities and challenges that a biofuels and bioenergy supply chain creates.

Without addressing these barriers, Queensland risks missing the opportunity to build a sovereign bioeconomy. That is why the ASM is putting forward the following recommendations.

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The way forward - recommendations for the Parliamentary Inquiry

1. To ensure that there is a shovel ready pipeline of sugar biofuels, biogas and bioenergy projects are available when demand side policies are implemented, the ASM seeks Federal and Queensland *government funding towards feasibility and final investment decision studies*. ($9 million in total funding by Queensland Government).
2. To ensure that Queensland gets its rightful share of Federal Government funding on industry policy and low carbon liquid fuels, we recommend *strategic enabling investments in shovel ready sugar industry projects* that have the capability to secure federal and private investments - ($20 million funding from the Queensland Government).
3. *Funding a pre-feasibility for a sugar biofuel supply chain with the Australian Defence Force (ADF)* in Queensland, potentially creating a cost effective and reliable fuels supply chain for the ADF ($1 million funding from the Queensland Government).
4. Co-investing with industry and Federal Government towards *an R&D capability for advanced sugar manufacturing*. ($6 million funding from Queensland Government)
5. Queensland and Federal governments *include cane rail infrastructure in national disaster recovery support*, to help maintain a network that will be central to feedstock aggregation.
6. Queensland Government advocate with industry for *a national biofuels drop-in mandate* with requirements for a portion of the mandate to be filled with local feedstocks and a strong weighting in preference of feedstocks with the lowest carbon intensity profile (no cost to Queensland Government).
7. Assist with *access to finance* for sugar manufacturers with a cooperative structure.
8. Noting the significant benefits of cogeneration, explore opportunities for *offtake agreements with sugar manufacturers,* with either fixed or floor pricing, that mitigates exposure to negative market prices.
9. Delivery of these policy reforms as part of a *sugar industry diversification strategy*, similar to the National and Queensland timber industry strategies.

Total cost of package to the Queensland Government: Approximately $40 million

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The challenge: Addressing long-term viability issues in sugar manufacturing

The long-term viability of some sugar manufacturing facilities is uncertain. Much like other trade exposed heavy industries, the cost of doing business in Australia has grown exponentially, while heavy subsidies and government supports for our main global competitors, particularly in India and Brazil, remains unchecked as adherence to global trade rules is breaking down. Countries like India and Brazil do not see the sugar industry as a private commercial endeavor but a central sovereign capability that will secure their food and fuel security.

Despite a WTO ruling against India for subsidising its sugar industry at a rate greater than 100% the cost of production[5], India has announced its intention to resume sugar exports. Since this announcement in October 2024, global sugar prices have declined from $USD 0.22 per pound to $USD 0.16 per pound, in part due to the forecast Indian supply.

Global sugar prices have been deteriorating in real terms since the 1980s, as countries like Brazil and India try to monopolise global trade, while countries like the EU and US erect significant protections for their domestic sugar industries. Despite these challenges, the Australian sugar industry should be proud that it has remained globally competitive and is the third largest exporter of sugar in the world.

Australian governments need to be clear, countries around the world are investing and protecting their sugar industry as a sovereign capability for food and fuel. The Australian approach to the sugar industry is grounded in a hands-off free market approach, despite no free market existing for sugar or biofuels.

The quid pro quo for governments' laissez-faire approach to the sugar industry was that governments would ensure free and fair market access globally through a global free trade agenda. This quid pro quo has begun to unwind as the adherence to global trade rules is being challenged by most of our main competitors and potential markets for our product.

At the same time, the cost of doing business in Australia has been growing exponentially. The cost of sugar production since 2015 has increased by 64% for many Australian mills, well ahead of CPI (increased by 31% over the same period). [6]

[5] See WTO ruling DS580, at URL: https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds580_e.htm
[6] Feedback from ASM sugar manufacturing members, based on a 5.6% CAGR in costs since 2015.

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Lack of a policy agenda for the sugar industry

The challenges of the sugar manufacturing sector have not received the policy attention and response that it deserves, despite governmental priorities around developing sovereign capabilities and promoting regional manufacturing and jobs. This lack of attention is particularly anomalous, noting that both federal and state governments have imposed significant regulations on the sugar industry, dampening investment and innovation.

This lack of policy support and collaboration should be compared and contrasted to state and federal government support for the forestry products, timber, steel and smelting industries. A joint government-industry approach helps maintain and expand sovereign capabilities in these industries through significant government investment towards grant funding for innovation, R&D, capital equipment upgrades, and energy efficiency programs.

The ASM strongly recommends a government-industry approach that focuses on opportunity, not wasteful government intervention after an operation becomes unviable. The Mossman Mill experience is instructive of the costly nature of such intervention for both state and federal governments (approximately $70 million spent collectively)[7]. Most remaining mills are significantly larger than Mossman Mill, and the cost of a comparable intervention would exceed $150 million.

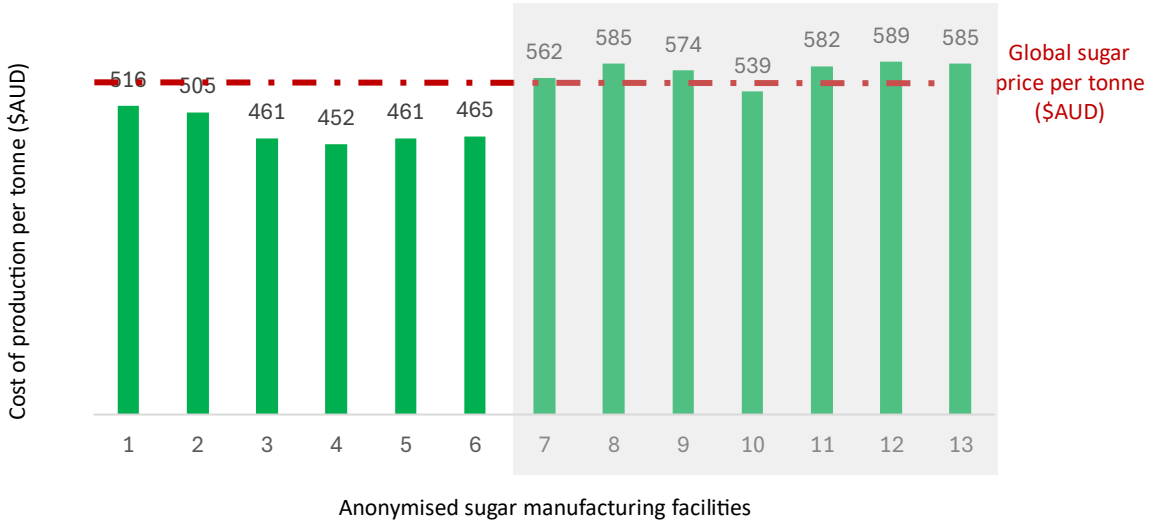
Impact on the Australian sugar industry

A BAU approach by industry and government to the sugar industry will result in substantial long-term viability issues. The ASM has adjusted analysis undertaken by BDO (2022)[8] on the cost of production in the sugar industry, by adjusting for industry inflation over the time passed since the 2022 analysis. Based on this analysis, out of the thirteen mills analysed by the ASM, seven will have long-term viability issues under a BAU scenario, with the cost of production sitting above global prices for sugar. To be clear, the sugar manufacturing sector is doing everything in its power to avoid a BAU approach, and we require governments to do likewise.

While the weaker Australian dollar has helped close the gap between break-even point and global prices, many manufacturers are operating above their cost of production.

[7] $12.5 million from Qld Government in 2025, $25 million from Queensland Government in 2018, $25.9 million from Federal Government in 2019, $6.5 million from Federal Government in 2022.
[8] BDO (2022), Queensland raw sugar cost of production report, at URL: https://sugarmanufacturers.org/wp-content/uploads/2025/04/ASMC28085-BDO-QLD-RAW-SUGAR-COST-OF-PRODUCTION-REPORT-UPDATE-FINAL.pdf

Cost of production ($AUD) across a sample of anonymised sugar manufacturing facilities – adjusted for inflation to 2025 and current global prices[9]



Impact on regional Queensland communities and growers

The potential closure of the next sugar mill in Queensland will have profoundly larger impacts on regional Queensland communities and the growing sector. Since the 1980s the sugar manufacturing sector has needed to rationalise operations due to the ongoing challenges highlighted in this submission. The sector went from having 33 facilities in the 1980s to 22 today. For the most part, this rationalisation did not impact on the growing sector, where nearby facilities were available to take the cane from the mill region where operations closed down.

The next potential closure of a sugar manufacturing facility will also mean that those growers will have nowhere to process their cane. For the most part, facilities are now located too far from each other to be able to take on the cane from other milling regions.

History has demonstrated that once a sugar manufacturing facility closes it will never reopen. This is a huge loss for the sovereign capability of Australia, squandering an industrial capacity that has a replacement value in excess of $20 billion.

[9] The BDO (2022) analysis provided analysis on the supply chain cost of producing sugar by mill region in Australia and how it compared to selling prices. The latest cost data in that analysis was 2020. Since that time, the cost of production has risen sharply. However, in the absence specific mill cost data, the ASM has applied CPI increases since 2020 of (21.7% increase) to these costs to give an estimate of costs today – this significantly underestimates the cost increases in the sector, but still provides useful context. The BDO analysis (BDO 2022) can be found here: https://sugarmanufacturers.org/wp-content/uploads/2025/04/ASMC28085-BDO-QLD-RAW-SUGAR-COST-OF-PRODUCTION-REPORT-UPDATE-FINAL.pdf

The way forward – diversification into the bioeconomy

Diversification into biofuels, biogas, biomanufacturing and bioenergy provides a viable and near-term opportunity to not only secure the viability of the sugar industry, but create growth opportunities in the communities we operate in.

The ASM submission provides an overview of each of these opportunities if adopted at scale across all sugar regions to provide a 'size of the prize' overview of the opportunity. A successful diversification agenda will more likely see the adoption of multiple new opportunities across different sugar regions based on regional infrastructure availability, proximity to market, proximity to other supply chain partners, and other local considerations.

Some sugar regions may choose to focus on biofuels and biogas opportunities, while others may explore pelletisation of bagasse or further utilisation of cogeneration, and a select few may have opportunities across all diversification opportunities including biomanufacturing. The regional realities will dictate the pathway for diversification.

Establishment of bio-precincts around sugar manufacturing facilities

<u>The opportunity</u>

Above and beyond the feedstocks available and at hand for sugar manufacturers, our sector has the capability to establish bio-precincts in and around our facilities for the production of biofuels and bioenergy at scale. We could potentially leverage nearly 4000km of cane rail network, that is used to transport cane for five to six months of the year, to collect and aggregate other feedstocks, including tops and trash from cane growers, forestry residues, and other agricultural byproducts for bio-production.

This would provide Queensland with the opportunity to exponentially scale biofuels, biogas and bioenergy production, by utilising existing transport infrastructure and increasing the capacity of bio-processing facilities. As an example, cane rail networks could be used to aggregate hardwood plantation residue in Queensland in and around sugar manufacturing facilities. These residues could then be used in conjunction with sugar byproducts like bagasse, dunder and mill mud for the creation of biogas. This additional feedstock could justify investment in larger bio-processing capacity, reducing unit cost and improving viability.

It would further create a source of revenue for a myriad of industry stakeholders, including cane growers for their tops and trash, and the forestry industry for their residues.

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Challenges

The cost of maintaining cane rail infrastructure, with a replacement exceeding $2.5 billion[10], is becoming a large impost on sugar manufacturers. This has been compounded by the increasing incidence of natural disasters and adverse weather events due to the changing climate.

Despite the significant public benefits of the cane rail network, including currently keeping Queensland's second largest freight task off regional roads, the complete cost of maintaining this network has been left to sugar manufacturers, with no federal or state government investment. The maintenance impost is becoming too great, and this has meant sugar manufacturers are actively considering reducing the footprint of this network and move more of this freight task onto roads.

This is a bad outcome for congestion and maintenance of regional roads, including the financial impost on local and state governments, but also will begin to limit the opportunity to aggregate feedstock across Queensland using the existing rail network.

Way forward

In recognition of the public benefits of the cane rail network, and its significant potential to exponentially scale the biofuels industry in Queensland, we are seeking:

- The establishment of a Federal Government Cane Rail Fund, that would provide some level of funding for cane rail infrastructure upgrades, particularly those related to safety improvements and flood resilience.
- The inclusion of the cane rail network by Queensland and Federal governments in disaster recovery funding.

Access to disaster recovery funding on a 50-50 basis for the cost of repairs (capped at total cost of $10 million) would ensure this vital economic network is maintained for future decades. Funding could focus on 'building back better' for flood resilience, for example rebuilding level crossing signaling equipment on platforms to avoid future flood events.

These programs combined would provide some level of relief to sugar manufacturers for the increasing cost of maintenance of infrastructure that is used 5 to 6 months a year. It would also avoid the significant cost of road maintenance if this freight task was shifted onto regional roads.

Recommendation: Queensland Government to work with Federal Government towards the inclusion of cane rail infrastructure in disaster recovery funding

[10] In 2015, the Department of Infrastructure and Regional Development provided analyses that the replacement value of cane rail infrastructure was between $300,000 to $500,000 per km, equating to a replacement value of up to $2 billion for the entire network. We have conservatively added a CAGR of 2.5% to this cost, making the potential replacement cost today in excess of $2.5 billion. See: Department of Infrastructure and Regional Development (2015), Freightline 3 – Australian sugar freight transport, at URL: https://www.bitre.gov.au/sites/default/files/Freightline_03.pdf

Biofuels and biogas

The opportunity

Sugar industry feedstocks (bagasse, molasses and cane juice) can potentially provide more than 30% of the domestic aviation fuel market[11], which consumes between 7-9 billion litres of jet fuel annually[12]. The near-term opportunities are focused on the conversion of ethanol to SAF, while the conversion of biomass, such as bagasse, is likely a medium-term opportunity.

These feedstocks, as well as additional feedstocks such as mill mud and dunder, could alternatively be used for the production of biogas. Biogas could be a viable diversification opportunity, particularly where gas pipeline infrastructure is co-located with sugar manufacturing operations.

The market for biofuels and biogas will be determined by government policy, domestically and internationally, noting that these fuels will be more expensive than traditional fossil fuels for the foreseeable future. However, the Federal Government has suggested that it is committed to supply and demand-side incentives to establish these markets.

As the most abundant feedstock in Queensland, sugar provides a huge opportunity for the Queensland Government to leverage Federal funding to establish a nascent industry in regional Queensland and underpin the future of a foundational industry for the state in the form of the sugar industry.

According to the recently released Clean Energy Finance Corporation and Deloitte (2025)[13] research report into low carbon liquid fuels, sugar and canola are the next opportunity that provides a cost-effective pathway for the production of biofuels and carbon abatement at scale. This is particularly important noting that tallow and used cooking oils have very limited scale opportunity and have already largely been utilised.

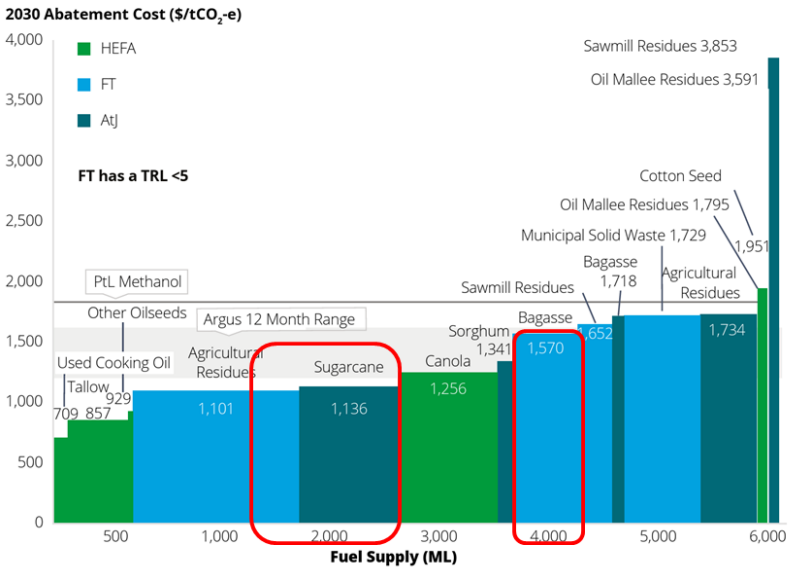
While agricultural residues provide a lower cost approach to abatement for biofuels production at scale, practically it is very hard to aggregate and consolidate this dispersed feedstock. This is in stark contrast to sugar, sugar byproducts and canola, which are all aggregated and consolidated feedstock.

[11] CSIRO (2023)

[12] Queensland Government & Deloitte (2023), Catalysing sustainable aviation fuel (SAF) in Australia, at URL: https://www.statedevelopment.qld.gov.au/__data/assets/pdf_file/0025/85480/SAF-sust-aviation-fuel-report-summary.pdf

[13] CEFC & Deloitte (2025), Refined Ambitions: Exploring Australia's Low Carbon Liquid fuel Potential, at URL: https://www.cefc.com.au/document?file=/media/jh3gvm14/refined-ambitions-exploring-australia-s-low-carbon-liquid-fuel-potential.pdf

Biofuels feedstock supply and abatement cost



Source: Clean energy Finance Corporation and Deloitte 2025

The sugar industry also has a unique opportunity to assist in securing the fuel security of the Australian Defence Force (ADF). Significant fuel intensive ADF assets are located across Queensland, including naval and air force capabilities, and these are collocated in areas with sugar manufacturing capabilities. The potential to create a short, secure cost-effective biofuels supply chain linking the sugar industry to the ADF is worthy of further investigations.

The challenges

The are significant challenges to the establishment of a biofuels capability through sugar, including:

- Developing a pipeline of shovel-ready projects, if and when government policies induce demand for biofuels at prices that provide commercial returns for producers.
- The significant capital costs establishing a biofuels capability.
- The risks and uncertainty involved with a market that does not as yet exist and that is reliant on ongoing government commitment.

Developing a pipeline of shovel-ready projects

There is a significant risk that demand-side biofuels incentives only create a biorefining capacity reliant on imported bioethanol, not a domestic biofuels capability. This will create very little employment and not address the fundamental concern around Australia's reliance on imported liquid fuel. This is a huge risk for governments touting low carbon liquid fuels as a regional employment driver, as the overwhelming number of jobs to be created from the biofuels boom will be in the domestic supply chain not in biorefining itself.

To date, governments have simply not focused on developing the domestic supply chain, and there is a risk that demand-side incentives will simply embed an imported supply chain based

on Brazilian and Indian bioethanol, essentially providing a subsidy for overseas ethanol producers. This would be a double blow for the sugar industry, not only through a lost opportunity in biofuels, but the provision of a subsidy to Brazil and India to further underpin their sugar industries.

A challenge for the sugar industry in developing domestic supply-side projects that are shovel ready is the significant cost of getting a project through prefeasibility, feasibility and final investment decision analysis. This process typically costs 2% to 4% of total project capital costs, and noting that there is no real biofuels market as yet, and no foreseeable revenue, it is very hard to justify such a spend.

Federal and state governments have funded organisations like GrainCorp and Jet Zero to begin to build the relationships and commercial arrangements that identify and apportion risks, responsibilities and value to build this domestic supply chain. The GrainCorp led consortium was meant to deliver this for the grains supply chain, while the Jet Zero consortium was meant to deliver this for the sugar supply chain. The focus on sugar and grains was due to the cost effectiveness of these feedstocks to provide biofuels at scale.

While the GrainCorp-led consortium has done this for the grains sector, our experience is that these foundational activities have not yet occurred with any great depth within the sugar industry. The ASM understands that Jet Zero is exploring imported ethanol and other feedstocks and technologies, including pongamia[14].

With respect to demand side incentives, biofuels mandates may provide the needed certainty in demand to spur investments in supply. While the focus of discussions have been on sustainable aviation fuel mandates, the most readily available a cost-effective abatement opportunity is the stringent enforcement and expansion of existing state based biofuels mandates for road transportation.

Capital costs, risks & uncertainty associated with the establishment of a domestic supply chain

To establish a domestic supply chain for biofuels through the sugar industry requires significant capital investment. However, the risks and uncertainty associated with a biofuels market makes it very hard to justify the required investments.

Noting domestic and international uncertainty around sustainability, net-zero and energy transition policies, the risk in investing in capital and infrastructure that have useful lives well over 30 years is unquantifiable. Will domestic and overseas governments maintain their commitment to low carbon liquid fuels? Will commitments to domestic and international biofuels mandates stand the test of time?

Other governments, including those in Brazil and India, have heavily invested in building a sovereign capability in bioethanol. Do Australian governments have the same commitment to

[14] See URL: https://www.bioenergyaustralia.org.au/news/media-release-jet-zero-pongamia-trial

supporting the development of a domestic supply chain through what will be challenging and uncertain times as nascent domestic and international markets for biofuels are developed?

Way forward

Policies to ensure a pipeline of shovel-ready projects

The ASM seeks a combination of Queensland and Federal Government to provide grant funding on a 50-50 basis to sugar manufacturers to progress biofuels, biogas and bioenergy related projects through the project pipeline, noting the cost escalation as project moves through pre-feasibility, feasibility and then a Final Investment Decision (FID) analysis. This will ensure the availability of shovel ready projects if and when demand side government incentives do what they set out to do – create demand for biofuels.

From a Queensland Government perspective, developing a pipeline of sugar industry projects are shovel ready, will ensure Queensland projects are best placed to secure Federal Government funding allocated to the Future Made in Australia Agenda and low carbon liquid fuel supply side incentives, and in turn spur significant private investment in regional Queensland communities.

Attracting the significant private investment needed in the diversification agenda

To capture opportunities in biofuels, biogas and bioenergy at scale within the sugar industry requires billions of dollars in investments. Noting the significant risks with a developing market, developing a nascent supply chain, and competition from highly subsidised imported biofuels and biofuels feedstocks, the risk associated with such investments are very high. There is a role for governments to derisk these investments through government grant funding and other forms of local producer support.

The focus of government funding should be broader than supporting technology and innovation of the biorefining process – this is only a small part of the diversification challenge. Governments should facilitate technology adoption and process innovation across the physical biofuels supply chain. This includes process innovation and technologies that will liberate and use feedstocks more efficiently. For the sugar industry this is primarily bagasse and to a lesser extent tops and trash.

On 17 September 2025, the Federal Government announced a $1.1 billion in grant funding to promote supply side investments, via competitive tender processes. This is a welcome development.

Sugar related feedstocks are the predominant pathway for the Queensland Government to underpin a biofuels capability. The Queensland Government has an opportunity to ensure significant private and Federal Government investments by strategically providing funding to sugar industry bioenergy projects that will position Queensland projects at the top of the list of the Federal Government's competitive processes for low carbon liquid fuel funding.

Recommendation: Queensland Government to provide $9 million on a 50-50 basis to fund feasibility and FID analysis in developing a pipeline of shovel ready biofuels, biogas and bioenergy projects

Recommendation: Strategic enabling investments by the Queensland Government ($20 million total) in shovel ready sugar industry projects that have the capability to secure Federal Government and private investments.

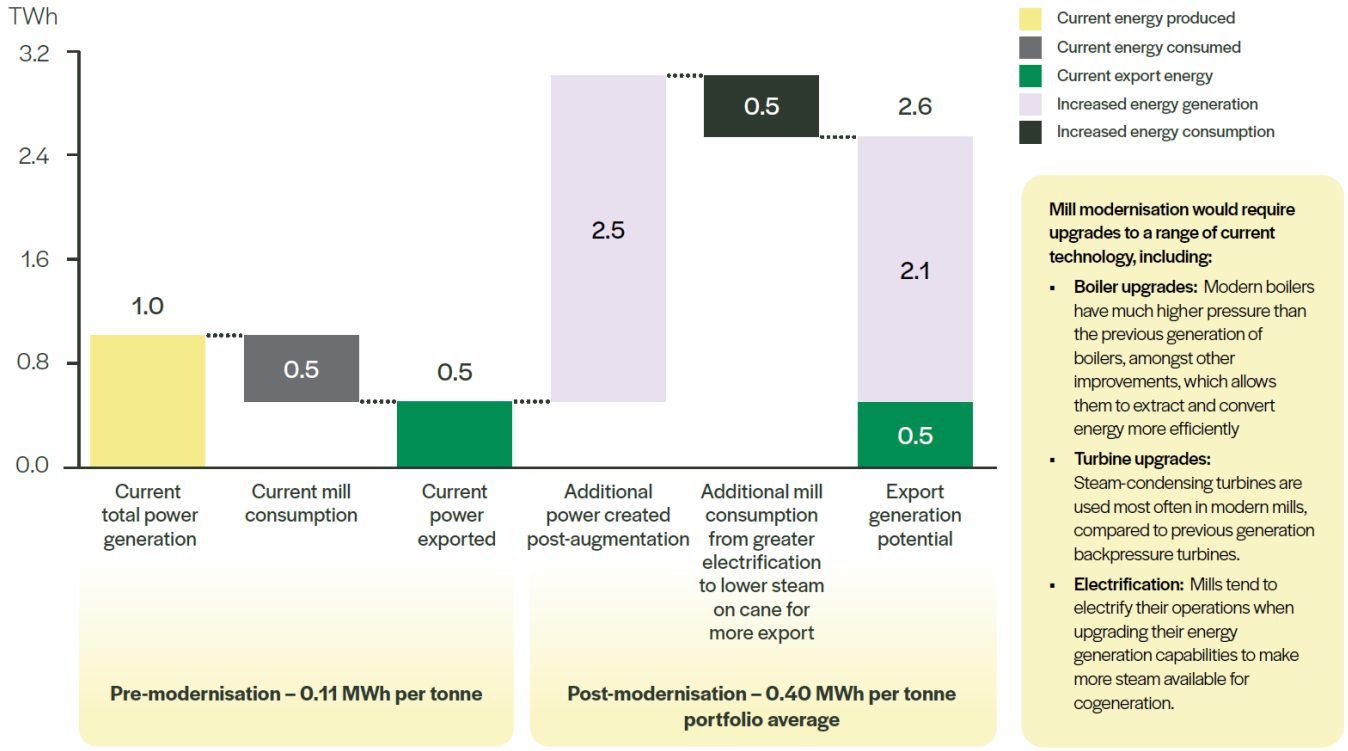
Bioenergy through the cogeneration of electricity

The opportunity

In 2025, the ASM undertook a prefeasibility (co-funded by the Queensland Bioenergy Fund) into the opportunities of expanding cogeneration outputs from sugar manufacturing[15]. These opportunities include:

- Expanding cogeneration capacity from approximately 400MW to 835MW of installed capacity – if properly utilised, this is enough power for 500,000 Queensland homes.
- Provide up to an additional 2.1-terawatt hours of electricity to the National Electricity Market (NEM) through the above-mentioned expansion and better utilisation of existing capacity, quadrupling the electricity available for export to the grid.
- Leveraging existing know-how within the sugar industry, with expertise in technology, and a good understanding of operating in a mature market.

Pathway to increasing capacity and utlisation of cogeneration

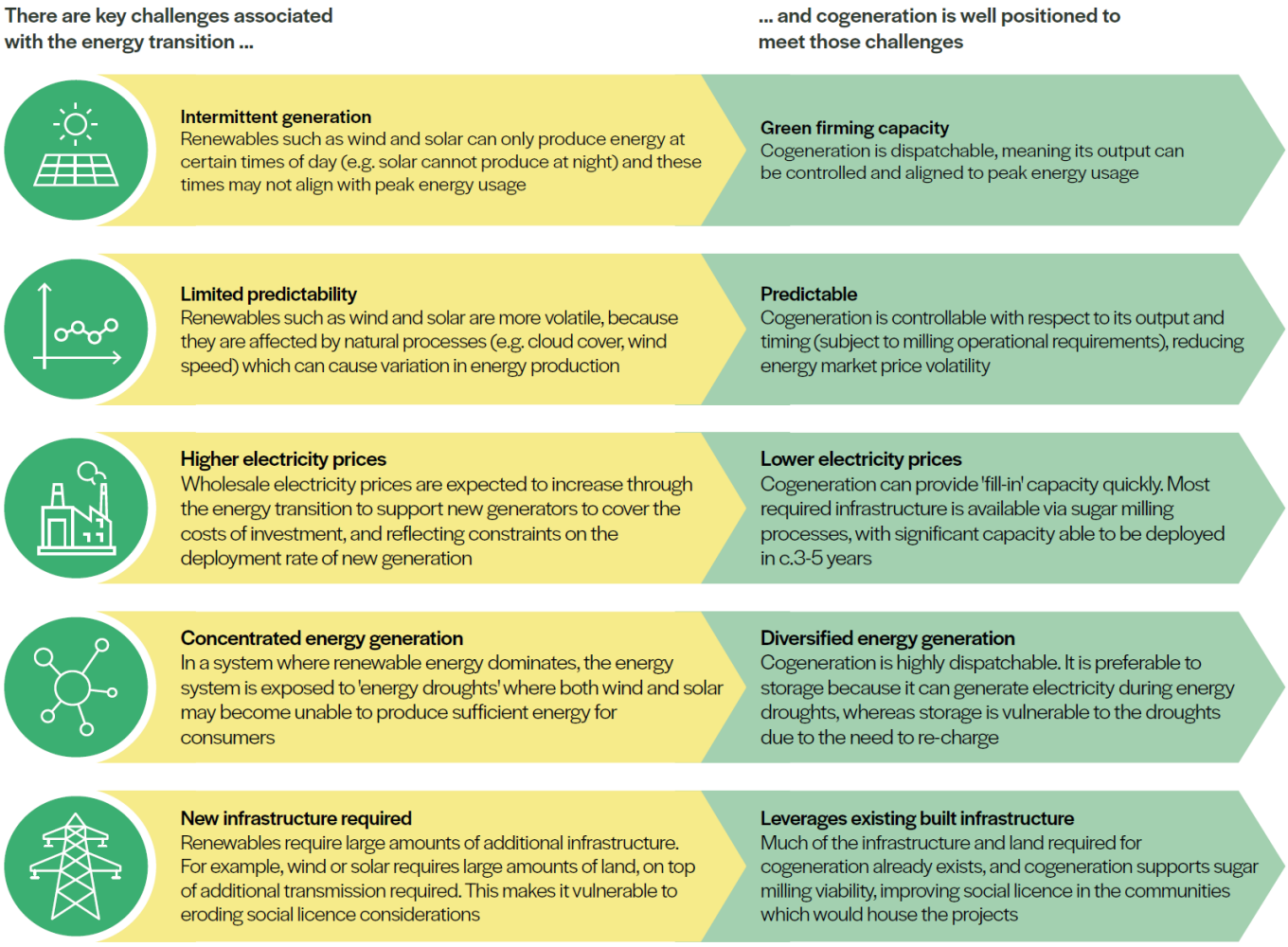


Source: ASM (2025)

[15] ASM (2025), Bioenergy Fund Project – Electricity Cogeneration in the Sugar Industry, yet to be published.

Cogeneration provides one of the few sources of baseload renewable electricity, and expansion would create between $9 billion and $15 billion of benefits to the NEM to 2050 (using AEMO Integrated Systems Plan forecasting of electricity supply and demand) and reduce GHG emissions by 1.3 million tonnes in 2030. Cogeneration also has a very small physical footprint, creating less community concern from a social licence perspective as compared to solar or wind generation projets.

Opportunities and challenges with cogeneration



Source: ASM (2025)

The challenges

There are significant commercial, market regulation and operational challenges to securing investments to expand cogeneration capacity. The commercial challenge is first and foremost, with sector-wide investment potentially running into the billions, an amount difficult to justify noting that baseload power generators are not rewarded for their reliability in the Australian electricity market..

Despite providing baseload power, with the ability to displace the need for very expensive long duration batteries and gas peaking generators, the electricity market does not recognise this benefit. Based on our prefeasibility analysis, this benefit would reduce electricity generation prices by over a billion dollars per annum in the 2030s, yet there is no market payment to incentivise the capturing of this benefit.

The NEM is not focused on making the market work for all generation types, with a bias towards large scale wind and solar. These generation forms have received significant subsidies for many decades and their non-synchronous intermittent nature has created significant operational issues for the national grid. To solve this problem, governments have provided proponents of solar and wind power further subsidies, via direct grant funding and the Capacity Investment Scheme (a program not available to the sugar industry), to address a problem inherent in their form of intermittent non-synchronous power generation.

The large-scale adoption of wind and solar has created further problems for generators, such as sugar cogeneration, who provide continuous baseload power. The intermittent nature of these generation sources create periods in the NEM with negative prices, forcing baseload power generators to run at significant losses to export power into the grid. The nature of sugar factory cogeneration is that electricity is primarily produced in conjunction with process steam required for factory operations. As a result, we cannot significantly ramp down our generation to mitigate exposure to these losses, nor ramp up generation to utilise the significant revenues stemming from the supply shocks created by intermittency. This will hinder investment in cogeneration expansion and challenges the viability of existing cogeneration capacity.

Operationally, market regulators and network providers are not interested in facilitating the connection of our energy generation capacity to the network, preferring to use the opportunity to upgrade their networks at our cost. This is particularly the case if the generation capacity seeking to come online is in a grid constrained area. Similarly, the time it takes for market regulators and network providers to provide access to the network can be counted in years, creating yet another financial barrier for cogeneration.

This complexity, bureaucracy and needless cost essentially creates a closed shop for incumbent generation providers, who were envisaged as the prime stakeholders when market rules were written, and are the only ones with sufficient scale and experience to navigate this complexity.

These challenges are growing more acute over time, not only challenging the business case for investment in new cogeneration capacity, but the utilisation of existing capacity. The quantum of benefits that cogeneration provides to the NEM outweighs the costs, yet the market does not facilitate or incentivise the participation of cogeneration.

The way forward

Federal and Queensland Governments can ensure the continued benefits of cogeneration, by directing organisations like CleanCo to examine offtake agreements for sugar cogeneration that recognise the additional benefits of cogeneration beyond its renewable status (baseload power, mitigant against peak demand events etc.).

It should be noted that nearly all generation sources, whether legacy fossil fuel generation or more recent renewable generation, have had government investment support to establish that generation.

An offtake agreement with a fixed price or a floor price will help maintain and expand the amount of electricity generated by the sugar manufacturing sector through cogeneration, by reducing exposure to the highly volatile national electricity market, particularly negative pricing, and can fill the significant financial gap created by the collapse of prices for Largescale Generation Certificates.

In Japan, 3-4% of electricity is generated from biomass thanks to incentives and offtake agreements for biomass to energy proponents. Current agreements provide a price equivalent $200 per MWh in Australian dollars which would be sufficient to encourage expansion of existing sugar factory cogeneration if it could be provided under a long-term offtake agreement.

Recommendation: Queensland Government to provide $9 million on a 50-50 basis to fund feasibility and FID analysis in developing a pipeline of shovel ready biofuels and bioenergy projects

Recommendation: Exploration of offtake agreements for sugar cogeneration (with a floor price) in recognition of its baseload synchronous benefits, and to limit exposure to negative market pricing caused by intermittent generators.

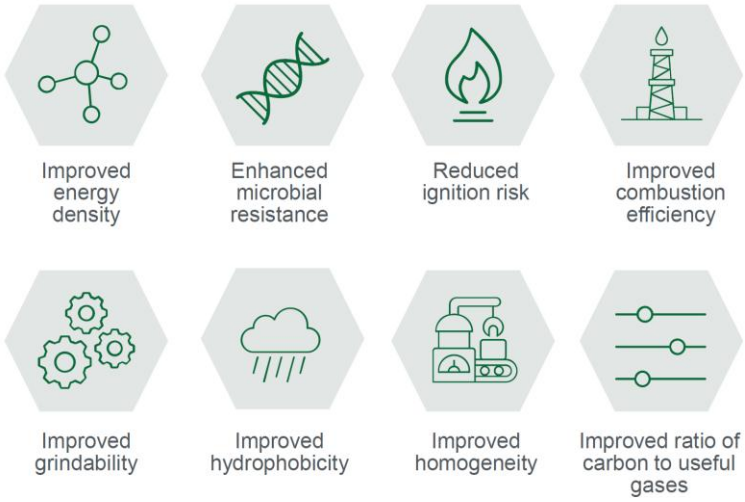
Pelletisation of bagasse

The opportunity

The pelletisation of bagasse could be a no-regret solution for industry and government to invest in the diversification towards biofuels and bioenergy. Pelletisation refers to using biomass from the sugar industry, including bagasse and tops and trash, and densifying them into pellets that can be easily transported and used in a variety of ways including:

- Green power generation through the use of the pellets to displace coal .
- Can be used as a feedstock for various energy sources, including biogas.
- Could potentially be sold for export to markets like Japan.

Benefits of bagasse pelletisation



Source: ASM (2025)

Pelletisation technology can be extended to the use of other feedstock, including tops and trash and forestry residues, if logistical and commercial challenges can be overcome. This provides an opportunity to scale. As an example, there is approximately the same amount of tops and trash on farm as there is bagasse within sugar manufacturing facilities.

Developments in the pelletisation process and its potential commercial viability are advancing quickly. This bodes well for its potential commercial applications going forward.

The challenges

The market for pelletised biomass is in its infancy and the commercial risks are hard to assess. The ASM believes that with the net zero agenda, biomass pelletisation could be a solution to the energy transition journey of hard to abate sectors including metal smelting and coal fired power generators, providing a renewable source of fuel for furnaces and boilers.

The way forward

The pelletisation pathway can link into multiple biofuels, biogas and bioenergy supply chains.. This includes government support and collaboration for activities, such as pilot testing, to progress the pelletisation agenda as part of the broader diversification agenda.

Recommendation: Queensland Government to provide $9 million on a 50-50 basis to fund feasibility and FID analysis in developing a pipeline of shovel ready biofuels, biogas and bioenergy projects

Recommendation: Strategic enabling investments by the Queensland Government ($20 million total) in shovel ready sugar industry projects that have the capability to secure Federal Government and private investments.

Biomanufacturing

Above and beyond biofuels and bioenergy, the sugar industry is well placed to underpin a biomanufacturing capability in Queensland. This includes utilising precision fermentation technologies to create valuable alternative proteins from sugar, and the creation of biochemicals and biomaterials using sugar and sugar byproducts. The QUT Renewable Bio-commodities Pilot Plant is leading work on the opportunities in biomanufacturing utilising sugar and sugar byproducts.

The way forward

The ASM supports this ambitious agenda, providing high value product opportunities for the sugar industry.

Research and development

The sugar industry R&D capability is not fit-for-purpose nor is it adequately resourced to ensure core capabilities for existing sugar production (variety development and disease/pest management), and to tackle the R&D challenges and opportunities associated with advanced sugar manufacturing and diversification.

Sugar Research Australia, the main vehicle for sugar industry R&D, is one of the smallest research and development corporations in Australia, and its current resourcing and expertise means that a focus on core tasks such as varietal development for yield improvements and disease/pest resistance is likely the upper bounds of the R&D task it can provide.

Manufacturing R&D has largely been ignored by the industry's R&D agenda. Despite the sugar manufacturing sector putting nearly $10 million per annum into SRA - SRA has indicated it has limited expertise and resources to undertake manufacturing R&D going forward.

The ASM welcomes Queensland Government's $2.85 million p.a. investment into sugar R&D. However, the manner in which the Department of Primary Industries invests this money explicitly deprioritises R&D into advanced manufacturing regardless of the merit of the project, with a heavy focus on farm-level R&D. Varietal development for sugar and energy production is only one component of the diversification agenda – a necessary but insufficient activity on its own.

The ASM also welcomes state and federal government support for projects, such as the Mackay Renewables Bio Commodities Pilot Project, that is looking at long-term opportunities in biomanufacturing including technology development for processes such as precision fermentation. Yet this still misses the main R&D task needed to support the establishment of a biofuel and bioenergy capability.

The main R&D challenge with respect to biofuels and bioenergy opportunities are process innovations to better tailor, adopt and utilise new and existing technologies that will liberate feedstock for the production of bio-products, and projects focusing on technology transfer into the sugar manufacturing sector to move the sector up the innovation curve and support the

sector's diversification aims. This agenda has largely been ignored by governments and Sugar Research Australia alike.

Australian sugar manufacturing cannot afford to simply reinvest in equipment and industrial processes like for like, this is simply unviable. The sector needs to adopt technologies and innovative processes that will provide a step change in productivity for the capital that can be invested and also support diversification of revenue streams. This is the core R&D activity needed.

It is foolhardy to suggest Australia, let alone the sugar industry, should spend limited R&D funding on technology development, where global developments will likely overtake our endeavors. It would be more prudent to focus on technology adoption, and process innovation that is closer to the coalface of commercialisation.

The way forward

There is an opportunity for co-investment between industry, Queensland Government and Federal Government to establish a $24 million advanced sugar manufacturing R&D capability focused on technology adoption and transfer.

Industry may be able to put forward $6 million seed funding that is available as a reserve within Sugar Research Limited (an industry funded organisation focused on research), to be matched by Queensland Government, and the Federal Government match the industry and Queensland Government contribution. This would provide $24 million for a robust advanced sugar manufacturing R&D program.

Sugar Research Australia could provide funding for operational expenses, in lieu of not undertaking any manufacturing R&D itself on behalf of the sugar manufacturing sector.

Recommendation: Co-investing with industry and Federal Government towards a $24 million R&D capability for advanced sugar manufacturing, with a focus on technology adoption. ($6 million funding from Queensland Government)

Government policies – international and other industry experience

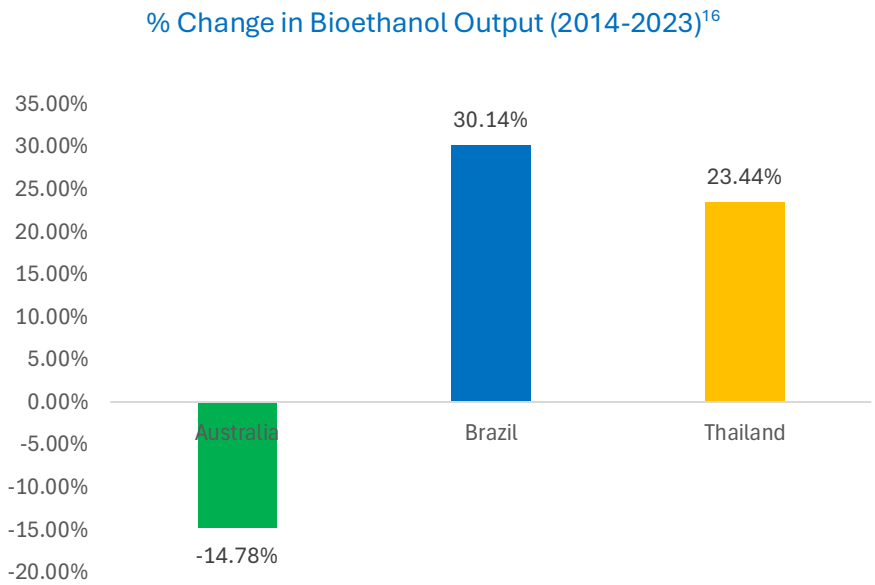
Markets for sugar, biofuels and even bioenergy are global in nature, and Australian governments must be cognisant of global developments and government policies in calibrating their domestic policy response.

Globally, sugar and biofuels production is seen as a sovereign capability in food and fuel production, and a hedge against food and fuel insecurity and worthy of supportive government policies that underpin its ongoing commercial operation. Much like how China views steel production and critical minerals as strategic industries to invest in, Brazil and India have similar views towards the sugar industry.

While this approach may sound foreign to Australian governments, in response to increasing global moves towards protectionism, Australian governments have embraced government-industry collaboration and investments in maintaining and growing sovereign capabilities in trade exposed industries, such as steel, timber and forestry.

Governments in all major sugar producing nations have invested heavily in promoting diversification in the sugar industry. Governments from Brazil, India and Thailand have worked with their sugar industries to not only underpin sugar production but build capabilities into biofuels, bioenergy and other value-add products. This is a missed opportunity for Australia.

While bioethanol output has increased by more than 30% in the Brazilian and Thai sugar industries, in Australia we have seen a reduction of approximately 15% in bioethanol output since 2014.



[16] Data extracted and adapted from International Sugar Organisation Yearbook (2024)

Diversification into biofuels and bioenergy in countries like Brazil, Thailand and India only successfully occurred with long-term government-industry collaboration and investment.

The Australian sugar industry has the expertise and know-how to deliver on a diversification agenda. Noting the global context, this diversification agenda requires government-industry collaboration and investment. The ASM is heartened by federal and state governments' realisation that there is a global race to secure sovereign capabilities. This approach is needed for the sugar industry and the development of a biofuels, bioenergy and bioproducts capability in Australia.

International experience with policies to promote sugar derived biofuels

Brazil

Brazil is the second largest producer of ethanol and the third largest producer of biofuels. Sugar can account for up to 90% of this production, and it can reliably make 30 billion litres of ethanol annually through the sugar supply chain. The Brazilian sugar industry is a dual output industry, enabling it to divert production into either sugar or ethanol depending on market prices.

Brazil's position as a global power in biofuels has largely been driven by Brazilian Government policies and producer and consumer incentives. In 1975, to build a domestic biofuels supply chain the Brazilian Government implemented stringent ethanol mandates via the Pralcool Program, with ethanol fuel blend mandates ranging between 20-30%.

To maintain and grow this capability, the Government further established the ReovaBio program, a decarbonisation credit scheme, obligating fuel distributors to meet decarbonisation targets through the use of biofuels or purchase credits from others to meet this obligation. The creation of the carbon credit market has provided the needed revenues to make investment in biofuels infrastructure viable for the Brazilian sugar industry.

To protect the Brazilian biofuels industry from international competition, the Government introduced 18% tariffs on imported bioethanol. There has been a suite of other measures provided to support and promote the development of a sugar industry-based bioethanol capability including access to discounted development loans.

India

India is estimated to produce 10.5 billion litres of ethanol in 2025[17]. This production is almost entirely underpinned by government policy, with a E20 mandate driving demand, while there is an absolute ban on ethanol imports for fuel blending.

India is further developing biofuels market with the Government setting ambitious blending targets for its Sustainable Aviation Fuel (SAF) program. The country aims to achieve a blending target of 1 percent by 2027, 2 percent by 2028, and 5 percent by 2030 for international flights.

[17] United States Department of Agriculture (2025)

The Government also provides offtake agreements with guaranteed prices for bioethanol production, provides gap funding to make bioethanol projects viable, and provides concessional loans to biofuels proponents.

The United States

The United States is the largest producer of bioethanol, though this mainly comes from corn. This dominant position has been forged through significant government investment and incentives. This includes (not an exhaustive list)[18]:

- *Renewable Fuel Standard:* The Standard requires renewable fuels to be blended into the national fuel supply, effectively ensuring all petrol sold in the US contains 10% ethanol.
- *The Advanced Biofuels Feedstock Incentives:* A program that provides up to 50% of the cost of establishing, producing or delivering biomass feedstock crops, as well as annual payments of up to $USD20 per dry tonne of biomass produced for up to five years.
- *Advanced Biofuels Production Payments:* Production payments to fuel producers who can demonstrate the use of renewable biomass in their biofuel.
- Loan guarantees for the development of biofuels infrastructure across the supply chain
- Significant government funding for research and development into biofuels and biomass.
- Tax credits for investment in biofuels infrastructure and clean fuel production credits.
- Biofuels and bioethanol infrastructure grants.

International experience in promoting biomass to energy

Japan is a leader in utilising biomass for the production of renewable electricity, with approximately 3-4% of all energy coming from biomass to energy. The Japanese Government is actively promoting the increased utilisation of biomass to energy, seeing it as one of the most cost-effective ways to meet its growing energy demands while reducing energy emissions.

This significant growth in biomass to energy has been achieved through a program of feed-in tariffs (FIT) established specifically for biomass. The FIT provides the equivalent total revenue of approximately $AUD 200 per MWh for biomass generation.

[18] US Department of Energy (2025), see URL: https://afdc.energy.gov/fuels/laws/ETH?state=US

Government policies towards other Australian industries

Steel industry

The Australian Government has made clear its intention to support and maintain industries, like the steel industry, noting the need to maintain and grow sovereign capabilities in steel production and fabrication[19]. The rationale for this support includes:

- Ensuring inputs are available for the construction and manufacturing sectors in Australia.
- Supporting an industry that is heavily trade exposed and is subject to highly subsidised imported competition.
- Assisting an energy-intensive industry through the energy transition process.

Above and beyond rescue packages for the Whyalla Steel Works, which has provided $2.4 billion of funding, federal and state governments have provided a suite of financial and policy supports to the steel industry, including (but not limited to):

- The establishment of the $1 billion Green Iron Fund to promote green iron manufacturing.[20]
- Funding via the Future Made in Australia initiative for green metal projects.
- $200 million to future proof regional steel manufacturing in NSW via the Powering Regions Fund. [21]
- The development (in-progress) of local content quotas and targets for Australian steel for domestic projects, particularly in the renewables sector.

Timber and forestry industries

Similarly, Australian Governments have lent significant support to the timber and forestry industry, noting its role in providing vital construction and packaging materials. Support has included (but not limited to):

- Energy transition and energy efficiency grants to paper milling[22] to upgrade energy inefficient equipment and for the establishment of a waste to energy facility.

[19] Australian Government (2025), Media release: Albanese Government backs Australia's steelmaking future, 21 February, at URL: https://www.pm.gov.au/media/albanese-government-backs-australias-steelmaking-future#:~:text=While%20we%20make%20around%205.7,clean%20energy%20transition%2C%20like%20cables

[20] See above

[21] Australian Government (2024), Media release: $200 million to help future-proof regional steel manufacturing, 31 January, at URL: https://www.minister.industry.gov.au/ministers/husic/media-releases/200-million-help-future-proof-regional-steel-manufacturing#:~:text=BlueScope%20has%20been%20awarded%20$136.8%20million%20towards,producing%20even%20lower%2Demissions%20steel%20in%20the%20future.

[22] See URL: https://www.pbo.gov.au/elections/2025-general-election/2025-election-commitments-costings/Boyer%20Paper%20Mill

- $100 million in grant funding for the Accelerate Adoption of Wood Processing Innovation Program – providing grant funding to adopt technologies in timber processing.[23]
- The establishment of the $100 million Australian Forest and Wood Innovations Program to ensure that the R&D agenda drives the long-term viability of the timber and forestry sector.[24]
- The Support Plantation Establishment Program, providing infrastructure grants of $2000 per hectare for the establishment of new timber plantations.[25]

How should the Queensland Government respond?

The resourcing of industry policy, particularly for trade exposed industries like sugar, has traditionally sat with the Federal Government, and the Federal Government agenda on a Future Made in Australia and low carbon liquid fuels provides an existing framework and resources to leverage for the development of bio-opportunities in the sugar industry.

The Queensland Government should partner with the sugar industry, to develop enabling policies and strategic investments to position the industry as a central industry in the Federal Government's manufacturing and low carbon liquid fuels agenda. Noting that the sugar industry provides one of the most abundant feedstocks in Queensland. This is an opportunity to attract significant private and Federal Government investment into establishing a new industry in Queensland, while supporting a foundational industry in the form of the sugar industry.

[23] See URL: https://www.agriculture.gov.au/agriculture-land/forestry/industries/accelerate-adoption-of-wood-processing-innovation-program#:~:text=The%20Accelerate%20Adoption%20of%20Wood,reduce%20the%20industry's%20carbon%20footprint.

[24] See URL: https://www.agriculture.gov.au/agriculture-land/forestry/national/australian-forest-and-wood-innovations

[25] See URL: https://www.agriculture.gov.au/agriculture-land/forestry/industries/support-plantation-establishment-program

Recommendations for the Parliamentary Inquiry

The ASM suggests the Committee put forward the following recommendations with respect to Queensland Government actions that will facilitate a broader national agenda:

1. To ensure that there is a shovel ready pipeline of sugar biofuels and bioenergy projects are available when demand side policies are implemented, the ASM seeks Federal and Queensland **government funding towards feasibility and final investment decision studies**. ($9 million in total funding by Queensland Government).
2. The Federal Government has developed substantial funding frameworks related to the Future Made in Australia agenda and low carbon liquid fuels supply side incentives. To ensure that Queensland gets its fair share, we recommend **strategic enabling investments in shovel ready sugar industry projects that have the capability to secure federal and private investment**s - moving Queensland projects up the priority list in a competitive grants process ($20 million funding from the Queensland Government).
3. The colocation of the Sugar Industry near fuel intensive Australian Defence Force assets (naval and air force capabilities) provides a win-win opportunity in creating a secure and reliable biofuels supply chain that will assist with the fuel security of the ADF. The ASM recommends **funding a pre-feasibility for a sugar biofuel supply chain with the ADF in Queensland** ($1 million funding from the Queensland Government).
4. Co-investing with industry and Federal Government towards a $24 million **R&D capability for advanced sugar manufacturing**, with a focus on technology adoption and research that is at the coalface of commercialisation. ($6 million funding from Queensland Government)
5. Noting the centrality of the cane rail network for the aggregation of biofuels and bioenergy feedstock, and the increasing cost of maintaining this network due to extreme weather events, the ASM recommends that Queensland and Federal governments **include cane rail infrastructure in national disaster recovery support**.
6. To create demand for biofuels, the ASM recommends that the Queensland Government advocate with industry for **a national biofuels mandate** with requirements for a portion of the mandate to be filled with local feedstocks and a strong weighting in preference of feedstocks with the lowest carbon intensity profile - a potential initial 2% drop-in mandate, rising over time. (no cost to Queensland Government).
7. Assist with **access to finance** for sugar manufacturers with a cooperative organisational structure (cooperatives have difficulty in securing access to finance).
8. Noting the significant benefits of cogeneration, explore opportunities for **offtake agreements with sugar manufacturers,** for both existing and new facilities with either fixed or floor pricing**,** in recognition of the benefits of the baseload nature of the generation.
9. This could be delivered as a part of an holistic **sugar industry diversification strategy**, similar to the National and Queensland timber industry strategies.

Total cost of package to the Queensland Government: Approximately $40 million

Conclusion

Capturing the opportunities in biofuels, biogas and bioenergy at scale will develop a sovereign capability in liquid fuel and energy in regional Queensland and secure the long-term viability of the sugar manufacturing sector and the sugar industry that supports more than 20,000 regional jobs.

While the opportunities are great, there are challenges and barriers to overcome, requiring a coordinated government-industry approach. This is not a one size fits all solution, and actions and activities cut across a myriad of portfolios including physical supply chains, research and development, and skills and workforce. Potentially a government-industry roundtable will be a good mechanism to establish a framework to progress the biofuels and bioenergy agenda in Queensland.

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Appendix: Dispelling myths

The renewable nature of sugar-derived energy and fuels

There is sometimes a misunderstanding of the emissions intensity associated with the use of sugarcane byproducts, such as molasses, cane juice and bagasse for the production of bioenergy and biofuels, particularly as it relates to the burning of bagasse to create electricity.

Sugarcane is an annual crop that absorbs CO2 from the atmosphere as it grows. When the bagasse (the fibrous waste from sugar processing) is burned to create electricity, this CO2 is released, but it's essentially the same carbon that was captured during growth, resulting in a closed loop with minimal net emissions.

The Australian sugar industry, via Sugar Research Australia, is currently finalising its life cycle assessment of sugarcane products with respect to emissions, however, based on international examples, sugar derived energy is very low carbon and considered renewable. Additionally, the Australian sugar industry's practices in terms of sustainability is world leading, likely suggesting a lower carbon intensity compared to other countries like Brazil and India.

Food v fuel

The food v fuel trade-off is not a significant consideration for biofuels and bioenergy coming from the sugar industry. Currently, the sugar industry processes 30 million tonnes of cane to produce sugar, molasses, renewable electricity and bioethanol. In the past decade we have processed 35 million tonnes of cane, suggesting we can have nearly 20% more feedstock for fuel and food with the right commercial incentives. Far from undermining food production, diversification revenues may make the maintenance and expansion of the sugar industry more viable.

Similarly, the sugar industry R&D agenda has not been resourced or focused on maximising the co-optimisation of sugar and energy production from sugarcane, potentially creating more food and fuel from each tonne of cane produced and processed.

The sugar industry's biomass pathway for biofuels and bioenergy has no food tradeoff, with more than 18 million tonnes of biomass available through bagasse and tops and trash.

The basis for cane price formula does not and should not suggest grower ownership of products made by the sugar manufacturing sector

For over 100 years, sugar manufacturers have purchased sugar cane from growers using the cane price formula which has remained largely unchanged since its inception. Under cane supply agreements, sugar manufacturers purchase sugar cane and all its constituents from the grower at the farm-side delivery point and title and risk passes from the grower to the sugar manufacturer at this point.

The ASM has heard some grower representative group suggests that growers should receive revenues from any and all additional products coming from cane. This misunderstands the very

principles of the cane price formula which determines the price that sugar manufacturers pay for cane. It is also important to note that while some of the components of sugar cane have beneficial use (sucrose, bagasse, molasses etc), some are waste products (surplus bagasse, mud, ash) with a cost of disposal that is borne by the sugar manufacturer.

The principle embodied in the cane payment formula, is that the price sugar manufacturers pay growers for cane (the cane price) is a function of the price that sugar manufacturers receive for the sale of the sugar they produce from that cane. Through the cane price, growers therefore have an exposure to global sugar prices and an economic interest in the price that sugar manufacturers receive from the sale of their sugar.

This principle has been used by sugar manufacturers to develop the concept of the grower economic interest (GEI) in the sale price received for an amount of the sugar produced by the sugar manufacturer. Prior to the sugar industry regulation of 2017, the concept of GEI was used by sugar manufacturers, via the sugar futures and currency markets, to voluntarily provide price risk management services to cane growers, enabling growers to independently determine the sugar price on which the price of their cane was based. Sugar manufacturers could also independently determine the price they received on the amount of sugar in which they had a direct economic interest.

Some grower representatives have suggested the notion of GEI with respect to raw sugar should be viewed as an absolute grower property right over sugar, and also by extension, a proportion of all processed products that come from cane. This is incorrect and confuses the principles underpinning GEI.

GEI provides a commercial framework in recognition of growers' exposure to the risks from market prices for raw sugar that arises due to the operation of the cane price formula. Prior to 2017, industry practice was that sugar manufacturers voluntarily offered price risk management services to growers whereby growers could independently determine the sugar price on which their cane price was based. Current sugar industry regulatory frameworks (introduced by both State and Federal governments in 2017) now provide growers with a right to determine whether the sugar price used in the cane price formula for the payment of sugar cane supplied to a sugar manufacture is determined by use of the sugar marketing and risk management services provided by that sugar manufacturer or a third party provider. If a growers nominates a third-party sugar marketer, then the sugar manufacturer is required to sell a portion of its sugar production, representing the GEI, to that marketer for subsequent on-sale to end customers.

GEI does not confer ownership of sugar on growers; rather it is concept that recognises an economic interest provided due to exposure to a market risk. To suggest otherwise would be a repudiation of sugar manufacturer property rights in a market-based economy. It would be akin to sugar manufacturers claiming property rights for downstream products that contain raw sugar, including sweetened beverages and confectionery.

The principles of the cane price formula dates back to 1915, when regulations were established for the sugar industry. The underlying principle in development of this formula at the time was to provide a fair return on capital for both growers and sugar manufacturers and to provide

incentives for growers to improve the sugar content of cane and incentives for sugar manufacturers to improve the quantity of sugar produced from cane.

These calculations were based at the time on typical sugar content of cane and sugar manufacturing recovery efficiencies and the respective asset bases of the growing and manufacturing sectors. For growers the capital base was predominantly land, while for manufacturers it was predominantly capital equipment and infrastructure.

In retrospect, the cane price formula fails to account for the fact that capital equipment and infrastructure is a depreciating asset, while land is an appreciating asset (a significant one after World War II). Every 30 years, manufacturers have to re-invest in the total cost of capital equipment and infrastructure, while growers gain equity through appreciating land values.

Using biofuels as an example, the manufacturing sector will need to invest billions to establish a capability at scale, while continuing to invest in capital to maintain existing sugar crystal operations. Growers will still be putting forward the same land as their predominant capital base, with very little need to invest in any new capital or infrastructure.

The purpose of this submission is not to prosecute arguments for a review and rewrite of the cane price formula - this a matter for sugar manufacturers and growers to decide. This issue has been raised to highlight that growers' share of market revenues could be less today if we recalculated the cane price formula to account for all the capital costs associated with processing cane into sugar and other byproducts such as biofuels, particularly if the impacts of depreciation and recapitalisation of sugar manufacturing assets was rightfully considered.

Perception that existing stakeholders too slow to move on bio-diversification

The ASM is disappointed at some comments made by stakeholders that sugar manufacturers are unwilling to move on bio-diversification opportunities, particularly proponents who may be in the start-up phase of their commercial endeavors.

Sugar manufacturers have been making sugar successfully in Australia for over 150 years, and this was achieved through a combination of prudence and innovation – we take the same approach to expanding into biofuels and bioenergy.

The sugar manufacturing sector sees diversification into biofuels and bioenergy as a pathway to securing the long-term viability of the sugar industry. This includes the ability of growers to monetise their tops and trash for use as a feedstock.

The sugar industry has invested significantly in commercial bio-projects including cogeneration facilities and bioethanol production. We have undertaken prefeasibility, feasibility and pilot projects on sustainable aviation fuel, biomass to biofuels and the pelletisation of biomass.

As with any developing market, biofuels and bioenergy have many proponents promoting new technologies and potential new market opportunities with unlimited potential. Not all of these proponents have strong investment backing, a robust commercial business model, and a transparent pathway to market and scale. The sugar manufacturing sector is not favourably

predisposed to working with proponents that do not have a solid commercial logic and operational and technical expertise. The sugar manufacturing sector is, however, actively working with proponents that are well credentialled to further the biofuels and bioenergy diversification agenda.

As an example, Isis Central Sugar is working with Licella on a pilot project to convert biomass to SAF in Childers.

To discuss this submission further, please contact Mr Ash Salardini, Chief Executive Officer at a.salardini@sugarmanufacturers.org or on 0490 785 390.

Yours sincerely

Ash Salardini
Chief Executive Officer