QUEENSLAND FARMERS' FEDERATION

Inquiry into Sugarcane Bioenergy Opportunities in Queensland

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Prepared for
Primary Industries and Resources Committee

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This submission is provided to:

Primary Industries and Resources Committee
Parliament House, George Street, Brisbane Qld 4000

Submitted via email pirc@parliament.qld.gov.au

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About the Queensland Farmers' Federation

The Queensland Farmers' Federation (QFF) is the united voice of agriculture in Queensland.

Our members are agricultural peak bodies who collectively represent more than 13,000 farmers who produce food, fibre and foliage across the state.

QFF's peak body members come together to develop policy and lead projects on the key issues that are important to their farmer members and the Queensland agriculture sector.

Together, we form a strong, unified voice leveraging our effectiveness by working together to drive policy and initiatives that support a strong future for Queensland agriculture.

Submission

This Inquiry into Sugarcane Bioenergy Opportunities in Queensland (the Inquiry) is an opportunity for the Primary Industries and Resources Committee to push for the practical action that can be taken now, by the Queensland Government, to harness sugarcane biofuel opportunities that directly benefit Queensland growers demonstrate supply chain collaboration.

Action and leadership have been slow at the state government level for several years, while the sugar industry itself has identified the scale of the opportunity, the real grower and industry appetite, market opportunities and objectives to drive a diversification pathway into a significant domestic and international trade market.

QFF recommends the Committee to:

1. Recognise the strong domestic and international economic history of Australia's sugar industry.
2. Acknowledge the importance of industry partnership as a necessary step to advance a national bioenergy industry through Australian sugar cane.
3. Acknowledge the sugar industry's 'whole of industry' vision for Australian sugar cane - Sugar Plus – Fuelling the Future of Food, Energy and Fabrication 2022 - which includes scaling up bioeconomy projects including bioenergy and sustainable fuels.
4. Work in partnership with industry to advance necessary legislative reform to allow diversification and expansion into energy crops. For example, work with industry on a food vs fuel distinction within legislation, which protects food security while enabling a biofuel industry and recognises that farm profitability and viability is fundamental to maintaining existing industry and developing new opportunities.

5. Ensure that bioenergy policy and investment take a sector-wide approach to encompass all forms of agricultural bioenergy production, i.e. not limiting sugarcane, horticulture, livestock waste, cogeneration, and other bioenergy opportunities.
6. Consider the opportunities for biogas, cogeneration, ethanol and carbon dioxide markets.

QFF also recommends the Committee to:

1. Highlight the importance of holistic and appropriate land use planning that considers current and future land use, food, and fuel challenges and opportunities.
2. Include food security, biosecurity and workforce security as fundamental considerations, to avoid unintended negative impacts on agricultural food production and domestic food security.
3. Promote the importance of biosecurity controls that prioritise the prevention and management of pests, diseases, and weeds that threaten Queensland agriculture and the broader community while exploring expansion and diversification of new industries and crops.
4. Acknowledge the value of growing a skilled, informed and profitable grower community that can adapt and diversify to meet the opportunities of sugarcane bioenergy.
5. Highlight the need to support a skilled, adaptable, and diverse agricultural workforce in general, to address ongoing shortages and support future growth, focusing on adaptability, attraction, retention, and skilling.
6. Identify the specific levers that the Queensland Government can influence to ensure Queensland farmers are able to increase feedstock production to meet the demands of a future biofuels sector particularly in relation to reducing the cost of energy and water to underpin an increase in agricultural production.

Background

For many decades, the Australian sugar industry has also maintained a firm eye on future opportunities for Australian growers and the economy. Queensland Cane Growers Organisation Ltd (CANEGROWERS) is the peak industry body for Australian sugarcane growers. Together with the broader industry and researchers, CANEGROWERS has been working to prepare the industry to meet future needs and harness opportunities for growers, and has been increasingly exploring bioenergy and biofuel production from byproducts.

Queensland's sugarcane industry is a cornerstone of both the Queensland and national economy, producing 28.6 million tonnes of sugarcane. This is 96% of Australian production from almost 329,000 ha of land (ABS 2023-24). Further to this, mills and the sugar industry supply chain contribute significantly to export earnings and employment.

In 2023-24, 85% of Australia's raw sugar was exported to key markets in South Korea, Japan, Indonesia, the USA and the United Kingdom. The remaining 15% of raw sugar was refined for domestic consumption. Australia has a highly reliable sugar production capability that can engage in the current and future market opportunities, and known volumes of feedstocks that can service international and domestic opportunities.

The Queensland sugar cane industry has been exploring in detail, the existing and future opportunities of bioenergy and bioproducts from sugarcane, and a roadmap to create the industry is presented in *Sugar Plus - Fuelling the Future of Food, Energy and Fabrication* (July 2022) and an industry independent Pottinger report (2022). Extensive industry research describes the pathway to bioenergy and other opportunities, however progress is hampered by a lack of government commitment, which is needed to grow demand, underpin feedstock, supply and show growers, investors and millers that a biofuel industry for Queensland sugarcane is ready and open for business.

In April 2025, the Queensland Government Department of State Development, Infrastructure and Planning commenced a Low Carbon Liquid Fuel Feedstock Expansion study. This study is delivered by a consortium of consultants and research organisations, which leans on voluntary industry guidance and input, without early consultation, funding or partnership. In this process, peak industry groups have expressed a long-running frustration with such government studies and funding, while there is simultaneously a lack of industry support and partnership that enables government and industry to commence the already known work.

The Australian Government is commencing coordination of a National Biofuel Feedstock Industry. Queensland therefore has the opportunity to be the 'first to go' and take advantage of the extensive body of industry work that has been done to date. QFF welcomes the Primary Industries and Resources Committee Inquiry into Sugarcane Bioenergy Opportunities in Queensland and recommends as a first step industry partnership, a clear government commitment for growers and investors, and a holistic strategy that addresses land use risk and threats as further outlined below.

Introduction

QFF welcomes the Crisafulli Government's announcement made on 11 June 2025 to unlock new investment and identify regulatory barriers to diversify Queensland's sugarcane industry to include biofuel and alternative power.

QFF acknowledges the Crisafulli Government's newly established Sovereign Industry Development Fund, announced on 24 June 2025, which includes intent to drive a biofuel industry for Queensland.

General Comments

The global sugar market is volatile, and Australian growers are experienced with managing price through sugar marketers. This volatility has never been more apparent

as the market has seen sugar prices reach record highs, surpassing $900 per tonne in 2023-24 to now in late 2025 prices nearing $500, which is below Australia's cost of production. The ability of Australian producers to forward prices their sugar is the invaluable tool that allows the industry to successfully compete in this global market.

Production of liquid fuel from sugarcane and other crops at scale represents a significant policy and market shift and requires expanded agricultural supply or redirecting part of the agricultural supply from food to fuel.

The Australian sugar cane industry is ideally positioned to participate in a future biofuels sector. The industry already aggregates feedstock, around 29 million tonnes of sugar to sugar mills every year. That is a major opportunity for the industry to utilise these existing sugar mill sites as centralised hubs for co-located biofuels manufacturing. The hubs could service other compatible feedstocks, such as sorghum, beet or fruit and food waste feedstocks in addition to liquid fuel production from sugar cane.

This presents considerable opportunities to increase sugar mill viability, which are currently suffering losses as a result of rising operating costs. Mills are closing down as they suffer financially from the issues of aging infrastructure and reducing sugar cane supply.

Transitioning byproducts into fuels – including bioethanol, biodiesel, renewable diesel, and sustainable aviation fuel (SAF) – offers potential to respond to climate goals and national fuel security objectives. However there has been a void of government commitment, governance leadership and policy enablers to advance the current and future bioenergy and byproduct opportunities.

Terms of Reference

In addition to our comments above and in our closing Concluding statement, QFF provides the following input to the Inquiry Terms of Reference:

1. **The role and benefits of sugar cogeneration in Queensland's electricity generation mix, including existing capacity and potential for expansion.**

The sugar industry is made up of large and small farms across five sugarcane growing districts. Diversification into bioenergy and contribution to Queensland's electricity generation has potential to support local employment, contribute to energy security and affordability, and contribute to broader socio-economic resilience in sugar-growing regions.

Sugar cogeneration in Queensland uses bagasse to generate electricity via steam-turbine systems. This supplies renewable electricity to sugar mills for internal use, reduces reliance on external power sources, exports surplus electricity to the Queensland grid, thus supplementing regional energy supply and supporting grid stability, and acts as a dispatchable renewable energy source. This is unlike intermittent

solar or wind, as the system can operate continuously using stored bagasse to maintain 24/7 generation.

Benefits include:

- Renewable Energy Contribution, as sugar cogeneration provides carbon-neutral electricity, offsetting fossil fuel use.
- Grid support and enhanced reliability, through predictable power from sugar mills with cogeneration, unlike seasonal or variable renewable sources.
- Increased viability of mills to support sugar industry and regional sugar industry communities.
- Increased economic value for mills, through selling surplus electricity, creating an additional revenue stream for the sugar industry.
- Environmental and increased climate security benefits of saving tonnes of CO_2 annually.
- Energy security through local electricity generation, that reduces dependency on long-distance grid imports and enhances regional energy resilience.

2. Market, regulatory, and infrastructure barriers to increased bioenergy production from sugar.

A current barrier to bioenergy development in Australia is the amount of development and investment that is needed for bioenergy production to be cost effective and become commercially viable. A significant enabling factor to increase development and investment in bioenergy is national policy certainty.

Currently, a lack of clear policy and commitment from government in a bioenergy industry for sugarcane, is hampering confidence within industry and investors. This contributes to a compounding impact of a delay in preparedness, adoption of transition factors in growers and the supply chain, and coordination of feasibility studies or projects to upgrade farms and mills to enable a bioenergy industry.

A lack of consistent policy certainty at both the state and national levels is partly due to unclear leadership and governance within government about who is responsible for driving the bioenergy industry (e.g. is it Treasury Energy Division, State Development or Primary Industries role to lead?) and the need for a whole-of-government approach. Internal and external government leadership, policy certainty, access to finance, and work needed to an agreed set of data and clustering of projects around mills, is needed to enable bioenergy production and uplift the economies of scale.

3. Opportunities to align sugar biofuel production with national security and Defence liquid fuel needs.

Currently, Australia imports over 90% of its liquid fuels, presenting a risk to national security and Defence. Integration of sugar-based biofuels into Australia's fuel security framework supports the Fuel Security Act 2021, stockholding obligations, and domestic

refining incentives, enhancing strategic autonomy particularly for times of crisis or supply disruptions.

A Queensland sugar biofuel industry will offer a secure and resilient supply of specialist fuels and diesel for operational readiness, with potential to mitigate supply-chain vulnerabilities from geopolitical disruptions or refinery outages. Co-located sugar and defence assets in northern Australia provide a proximate feedstock source for biofuel production.

Investments in Queensland biorefinery infrastructure, such as the Mercurius pilot plant in Mackay, have the potential to enable drop-in renewable fuels, maintain compatibility with existing defence engines and minimise logistical disruptions (Liquid Fuel Security Review Interim Report, 2019).

By incorporating locally-produced sugarcane biofuels, Australia introduces a domestic buffer, enhancing national resilience against scenarios where imported fuels may be delayed or unavailable, and supports a prosperous energy industry during times of instability or disruption.

4. Policy and funding mechanisms to de-risk investment in cogeneration and biofuels by manufacturers and growers, including examples of successful policy implementation from overseas and other industries.

Queensland's established milling infrastructure, associated cane rail infrastructure and agricultural processing facilities provide a strong, synergistic platform for biofuel production. The synergy of growing and milling facilities reduces capital expenditure, relative to other bioenergy greenfield projects. For example, bio-precincts around a mill would have access to bagasse as is baseload feedstock with other intermittent feedstocks to come in to scale. Realising capital benefits from common user infrastructure.

Government should seek to create incentives, public-private partnerships, and funding initiatives – such as through the Queensland Energy Roadmap, Prosper 2050, and other holistic government initiatives – to de-risk private investment and encourage industrial adoption to meet strategic fuel needs.

5. The R&D agenda to underpin a world leading sugar-led bioenergy industry.

Australia's sugar industry has a lifecycle carbon analysis under way alongside a new sustainability framework. Further work is needed by government to support industry's leading research, including the areas of standards and sustainability settings. CANEGROWERS with the supportive funding from state Government has positioned the industry such that 44% of the sugar cane grown in Queensland is now certified to the SmartCane BMP, environmental management system. The industry has benchmarked this standard against other global sustainability programs such the Australian sugar cane be supplied under a sustainable, traceable and certified supply chain. As the

industry moves to be ready supply sugar cane as a feedstock for a future bioenergy industry a whole new range of sustainability demands and standards are emerging.

Australia is behind the rest of the world, and requires integrated, strategically focused research and development targeting both the upstream supply (crop genetics and cultivation, carbon intensity for different feedstocks) and downstream processing (conversion technologies, sustainability, and economic integration), supported by industry-led and multidisciplinary collaborative frameworks.

Research investments must be focused on feedstocks and energy portfolios, balancing adoption of practical solutions and near-term productivity gains with long-term innovation in bioenergy and diversification. Success depends not only on scientific and technical advances but also on building the workforce, governance, and socio-economic structures to translate R&D into commercially viable and environmentally responsible energy solutions.

6. Strategic land use and regional development considerations affecting cane growing and sugar manufacturing capacity.

Significant focus is required at a state and national level on strategic planning and prioritisation of land use, for energy feedstocks, energy production, food production and other highly valuable land uses.

Strategic land use for bioenergy from sugarcane must incorporate existing and future farm management practices and regional development priorities in Queensland and New South Wales, the main cane-growing regions of the Australian sugarcane industry.

The strategic land use and regional development considerations include:

- Competitive land allocation with permanent high-value crops reducing cane-growing area.
- Adaptation to climate change, driving region-specific crop selections and irrigation methods.
- Integration of technology and precision agriculture to improve productivity and sustainability.
- Policy-driven environmental compliance, influencing nutrient management and runoff control.
- Market pressures and bioeconomy opportunities, promoting cane diversification for renewable energy and bio-products.
- Collaboration and industry consolidation, supporting higher adoption rates of best-practice farming systems.
- The significant impact urban expansion is having reducing cane production regions and presenting a range of ‘right to farm’ issues that are impacting on the ability of cane farmers to continue to run their enterprises efficiently.

These interlinked factors require the combination of environmental stewardship, technological modernisation, and strategic regional development planning aimed at both profitability and long-term sustainability outcomes.

QFF highlights that a lack of strategic land use planning risks loss of viable sugarcane growing land to other land uses (such as urban development or renewable energy generation).

In southern regions such as Bundaberg, Wide Bay, and Maryborough, high-value permanent crops like macadamias and avocados are increasingly competing with sugarcane for arable land. Unlike annual vegetables, tree crops occupy land long-term (20+ years) and reduce the area available for cane rotations. In some instances, these developments are more about locking down the capital gain in the land value rather than a drive towards production agriculture that contributes to a supply chain.

Water and irrigation dependency also influences the long-term viability or availability of sugarcane production land. Southern districts rely heavily on supplementary irrigation, and therefore changes in water availability, efficiency, and regulatory constraints influence the management and profitability of cane cultivation.

Future bioenergy crop production must consider the energy, production and water nexus. Working collaboratively across government departments, Government Owned Corporations, state and federal agencies and partnerships with industry to modernise of irrigation systems and enhance water management technologies, will optimise water use efficiency while safeguarding yields under declining water availability.

Impacts of climate variability in Northern regions where projections forecast increasing rainfall, and central regions suffer more consecutive dry days, may increase the risk of yield losses. Land use planning that incorporates climate adaptation strategies will be required to secure the maximum sugar growing potential.

Further, land tenure and structural consolidation will be essential to reduce fragmented farming entities, and enable larger-scale adoption of bioenergy sugarcane production and manufacturing practices.

7. Benefits for growers in diversification opportunities.

There are multiple advantages for growers in diversification opportunities, including:

Surplus bagasse which is currently underutilised, provides a continuous, renewable biomass supply coinciding with the cane harvest cycle. Sugarcane waste products such as bagasse and molasses can generate additional revenue if converted to ethanol, renewable diesel, or bio-aviation fuel, without impacting primary sugar production.

On-farm or nearby production of biofuels can also result in reduced costs in transport and energy for the industry, by replacing diesel for harvesting, transport, and milling.

Producers may also have future access to carbon markets through carbon negative fuel production. Sugarcane biomass absorbs CO_2 during growth and fuels like renewable diesel or bio-aviation fuel release less carbon upon combustion than absorbed, providing carbon-negative energy solutions. Utilising crop residues for bioenergy also offers to provide access to national and international to net-zero and decarbonisation market opportunities, as well as waste and circular economy through the use of biomass.

A bioenergy industry transforms sugarcane cultivation from a single-use (sugar) crop into a multifaceted bioenergy enterprise, enhancing economic resilience, environmental sustainability, productivity efficiency, and market positioning. By leveraging crop biomass, growers can secure higher revenue, reduce costs, support energy security, and contribute to sustainability outcomes while participating in a renewable energy supply chain that secures demand for their biomass and increasing influence over regional energy markets.

Diversification strengthens the resilience of the sugarcane industry against volatile global sugar prices and positions farmers to participate in green fuel markets both domestically and internationally, while also supporting job creation and regional development through skilled employment opportunities in rural communities.

Ultimately, the opportunity to develop a sugarcane bioenergy economy must be led from the prospect of future viability and profitability for farmers. The opportunities and multiple benefits of sugar bioenergy will only be realised if production is more profitable for farmers than current practice of growing sugar cane for food.

8. Consideration of food verses fuel.

Right to Farm issues may arise when a food versus fuel industry transition (or diversification) is allowed to happen. Loss of the right to farm can arise from competition for land, water, and biomass resources for production for human consumption and the growing bioenergy sector.

Key considerations to maintain the right to farm in a growing bioenergy market, are:

1. Ensuring valuable agricultural land is maintained for food production, through holistic and sophisticated land use planning.
2. Ensuring Australia can still engage in local and global sugar markets that ensure costs don't increase for sugar and food derivative products.
3. Ensure that rural labour and resources don't shift toward higher value biofuels at the risk of food market access, particularly for local communities and small farms.
4. Supporting farmers to be able to access a pathway that will secure a profitable and viable future for their enterprise
5. Increasing food security by supporting mill viability

6. Ensuring there is a complete understanding of the overall supply chain and potential implications, for example the potential resulting increased cost of fodder grain and the impact this may have on the feedlot sector, which is an important food producer and export market for Australia.

Currently, sugarcane accounts for a relatively small fraction of Australian arable land, and therefore biofuel growth is less likely to significantly threaten food availability for domestic use. Australia exports much of its grain and sugar, and so food versus feedstock must be managed in the context of the national economy and global market prices for Australia's agricultural products.

Conclusion

QFF is pleased to see the Primary Industries and Resources Committee resolve to self-refer an inquiry into sugarcane bioenergy opportunities in Queensland. Action, underpinned by a clear government commitment, is needed and QFF encourages the Parliamentary Committee to acknowledge the existing significant knowledge base and Sugar Plus roadmap (2022) which will deliver a bioenergy industry for Queensland and national benefits.

QFF strongly recommends industry partnership, beginning with the sugar industry's peak body organisation, CANEGROWERS, to advance the preparedness of growers – through awareness, education and investment decisions – and coordination with industry supply chain and infrastructure stakeholders, its leading position in the nation's SAF and biofuel industry. Without preparedness in growers and the sugar production and supply chain, any investment will commence from the backfoot.

There are three very present and real threats to the success of a Queensland sugarcane bioenergy industry:

1. Fragmentation of the sugar industry by a piece-meal approach to growing sugar and investments,
2. Loss of cane production land to other uses (such as urban development or alternative land uses),
3. And lack of the necessary policy levers to drive the demand side of the bioenergy market.

These threats must be mitigated by a clear commitment and tangible demonstration of the state and federal governments jointly acting to start up the industry, establishment of a clear governance structure between government, industry and investors, and ensuring a strong planning strategy for the opportunity. This can only be achieved with industry partnership from the outset, and coordination of government agencies and plans (including Prosper 2050 and the upcoming new Energy Plan).

The sugar industry is ready and able to work with the Queensland Government, growers, investors and the supply chain and QFF strongly endorses a partnership approach for industry and government.

Yours sincerely

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