Sugarcane Bioenergy Inquiry 2025

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INSTITUTE OF AUTOMOTIVE MECHANICAL ENGINEERS (INC).
A.B.N. 57 000 033 992 | RTO. 90409 | ARC Authority AU30624
PO BOX 70, BLAXCELL NSW 2142 | **P**: (02) 9782 1100 | **W**: www.iame.com.au | **E**: inbox@iame.com.au

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Primary Industries and Resources Committee
Parliament House
Cnr George and Alice Streets
BRISBANE QLD 4000

PIRC@parliament.qld.gov.au

Submission: Sugar Cane Industry

Background to Submission – Rationale

The Institute of Automotive Mechanical Engineers (IAME) (ABN 57 000 033 992) submits this document in strong support of the Queensland sugar cane industry and its central role in Australia's transition to sustainable fuel sources. Queensland was poised to be a leader in ethanol-based fuel policy and production - yet the full potential of this sector remains largely untapped at a national level. A coordinated national push for E10 fuel supported by modern vehicle compatibility, agricultural science, and existing infrastructure, could more than double ethanol demand, drastically increasing the need for sugar cane as feedstock.

Australia has the land, the workforce, and the natural advantages - particularly in Queensland - to scale sugar cane production in line with national biofuel strategies. Supporting sugar cane growers is not only an environmental decision but a strategic one for the state's long-term economic and energy resilience.

IAME's Role in Public Education and Cleaner Fuels

As a professional body representing thousands of automotive technicians and engineers across Australia, IAME has championed environmental innovation in the automotive sector. In a collaborative effort with the Queensland and New South Wales Governments, we supported the creation and promotion of the E10 Fuel Compatibility Checker - a critical education tool informing motorists whether their vehicle could run safely on E10 (10% ethanol, 90% unleaded petrol). Disappointingly, Queensland withdrew from this arrangement… NSW remains supportive.

This initiative:

- Attracted over 620,000 individual users during its online life, just in QLD;
- Resulted in a 68% increase in E10 fuel sales;
- Boosted public confidence by confirming that most vehicles post-2000 were compatible with E10;
- Reduced dependence on imported fossil fuels and lowered total CO_2 emissions;
- Directly benefited ethanol production industries in NSW and Queensland… sugar cane growers were one who supply them.

This success highlighted the public's willingness to adopt ethanol-blended fuels when proper education and support are in place - and crucially, it proved the economic viability of biofuel-linked agricultural production.

The Case for Sugar Cane as a Primary Ethanol Feedstock

Among all possible biomass sources for ethanol production - corn, sorghum, wheat, and cellulose-based feedstocks - sugar cane stands out as the most efficient and renewable input. Its high natural sugar content allows for direct fermentation, resulting in higher ethanol yields with lower energy inputs. Compared to starch-based crops that require additional enzymatic processing, sugar cane delivers:

- Higher litres of ethanol per tonne of biomass;
- Lower carbon intensity over the life cycle;
- Faster processing turnaround in distilleries;
- Greater economic returns per hectare to the grower.

This makes Queensland's cane-growing regions a national strategic asset in biofuel production - one that must be protected, expanded, and supported through aligned energy and agricultural policy.

Wheat-Based Ethanol: A Success Story in NSW

While sugar cane remains the superior feedstock for ethanol, we also recognise the complementary role of other crops. In New South Wales, Manildra Group has successfully leveraged wheat starch by-products to produce ethanol at scale. The Manildra Ethanol Plant in Nowra is one of Australia's largest, showcasing innovation in agricultural integration and demonstrating that multiple pathways for ethanol production are viable when regional resources are aligned to national fuel strategies.
However, wheat-derived ethanol is typically more expensive and energy-intensive than sugar cane-based ethanol, reinforcing the argument for Queensland to lead and expand the national supply chain.

Range-Extended Electric Vehicles and the Continued Relevance of E10

With the automotive industry shifting toward electrification, it's vital to clarify that internal combustion is not disappearing - it's evolving. Range-Extended Electric Vehicles (RE-EVs) are one of the fastest-growing segments in the low-emission vehicle market. These vehicles use a small internal combustion engine, often fuelled by E10, to recharge their batteries when the electric range is depleted.

This design:

- Maintains the need for cleaner combustion fuels, such as ethanol blends;
- Offers consumers the benefits of electric driving without full reliance on charging infrastructure;
- Encourages further decarbonisation of transport without displacing fuel industries overnight.

Additionally, all major vehicle manufacturers except Volkswagen approve the use of E10 in petrol vehicles sold in Australia. Even high-efficiency hybrid vehicles rely on E10 to achieve their low emission targets. The relevance of ethanol fuels is not diminishing with EV adoption- it is evolving alongside it.

Missed National Opportunities - and the Risk of Demand Outpacing Supply

While Queensland and NSW have mandated or promoted ethanol usage, other states and territories have lagged behind. In Victoria, South Australia, Western Australia, and Tasmania, ethanol uptake remains minimal. If these regions implemented E10 mandates or education initiatives, ethanol demand could more than double within 5 years.

This potential surge in demand would have cascading effects:

- Queensland's ethanol distilleries would require massive scale-up;
- Sugar cane production would need to double or triple to supply feedstock;
- Regional jobs in agriculture, transport, engineering, and refining would multiply;
- Export potential would increase if domestic supply goals are met.

Given Australia's climate, water resources, and available arable land, the expansion of sugar cane farming is not only achievable- it is economically strategic. Queensland could become the southern hemisphere's ethanol production hub, servicing both national and international markets.

E10 Mandate in Queensland – A Case of Untapped Potential

It is also important to reflect on the Queensland Government's ethanol fuel mandate, introduced on 1 January 2017. This policy requires that a minimum of **4%** of regular unleaded petrol and ethanol-blended petrol sold by liable fuel sellers be ethanol-based. However, despite the intent of the mandate, there is no public record of any enforcement action taken against fuel retailers for non-compliance.

In 2022, the Queensland Parliament introduced proposed amendments to the Biofuels Mandate Act, which included doubling penalties and creating offences for selling E10 with less than 9% ethanol. Yet, no evidence has emerged showing whether these penalties have been applied in practice.

More concerning is that the policy's geographic focus has been concentrated in Queensland's southeast corner, rather than including rural and regional areas where adoption and agricultural support could have been greatest. Had the mandate been enforced more equitably across the state, ethanol usage would have increased substantially. This would have driven up demand for sugar cane, supporting Queensland's growers and processors while delivering economic and environmental gains to rural communities.

Strategic Benefits to Queensland

1. **Economic Security:** Greater demand for sugar cane stabilises grower incomes and underwrites the long-term viability of rural economies.
2. **Agricultural Diversification:** Ethanol markets reduce the sector's overreliance on fluctuating food commodity prices.
3. **Regional Jobs:** From planting to processing, the biofuel sector supports a wide array of skilled and semi-skilled employment.
4. **Infrastructure Investment:** New ethanol plants, storage facilities, and logistics networks would follow increased production demands.
5. **Export Potential:** As Asia and the Pacific increase their own ethanol mandates, Queensland could emerge as a key exporter of refined fuel and production expertise.

Recommendations

The Institute of Automotive Mechanical Engineers respectfully makes the following recommendations to the Queensland Parliament:

1. **Champion a National Biofuel Strategy**
   Advocate for COAG or Federal Government alignment on E10 mandates across all states and territories.
2. **Expand Support for Sugar Cane Growers**
   Provide grants, infrastructure incentives, and research funding to increase sugar cane production for ethanol.
3. **Incentivise Distillery Expansion**
   Support refinery growth through tax incentives, capital subsidies, and streamlined approvals for new facilities.
4. **Support Innovation in Range-Extended and Hybrid Vehicle Fuels**
   Promote E10 compatibility as a core part of Australia's low-emissions transport strategy.
5. **National Education Campaign**
   Reintroduce and expand tools like the E10 Compatibility Checker to educate the public and dispel myths around ethanol use.

Conclusion

Queensland's sugar cane industry stands at a crossroads - capable of remaining a traditional agricultural sector or ascending into a central role in Australia's sustainable energy future. The Institute of Automotive Mechanical Engineers supports the latter vision and urges the Queensland Government to continue and expand its leadership in ethanol fuel policy.

With the right national support, Queensland can:

- Secure agricultural futures,
- Reduce transport emissions,
- Lower Australia's fuel import bill,
- And lead the southern hemisphere in biofuel production.

Submission by,

[redacted]

PETER BLANSHARD
Chief Executive Officer
Institute of Automotive Mechanical Engineers