



- 1 LABORATORY.**
From idea to proving parts of the process, optimising and developing initial plant design. Process run in batches.
COST: \$100,000 - \$1 M.
Funding from government, universities and corporate R&D.
- 2 PILOT.**
Technical proof of concept. Run on a continuous basis to test, optimise and prove the process. Product tested against relevant standards.
COST: \$1M to \$5M.
Difficult to fund. Some government support.
- 3 DEMONSTRATION.**
Commercial proof of concept. Full plant, but at sufficient scale to lower financial risk and prove ability to scale up volumes while maintaining process efficiency and costs.
COST: \$5M to \$30M.
Funding from private equity and government. On balance sheet funding for larger corporations.
- 4 COMMERCIAL SCALE.**
Commercially viable plant, operating life of 20 years. One plant operating successfully at commercial scale is the requirement for adoption across the industry.
COST: >\$50M.
Funding from equity, institutional equity, banks and government agencies.

[Source] Lazuli Consulting.

NEW REPORT IDENTIFIES OPPORTUNITIES & CHALLENGES FOR DIVERSIFYING SUGARCANE REVENUE STREAMS

SRA acknowledges the investment contribution from the Queensland Department of Agriculture and Fisheries towards this research activity.

A new report commissioned by Sugar Research Australia (SRA) has identified opportunities and challenges for diversifying revenue streams for the Australian sugarcane industry.

The report was prepared by Lazuli Consulting, who worked extensively with SRA Members and industry stakeholders to gain a more detailed appreciation around value-adding and diversification within the sugar industry value chain. They also analysed the technological and market landscape in Australia and overseas.

"Sugarcane is an incredible crop," SRA CEO, Mr Neil Fisher, said. "In Australia it is grown across diverse climatic conditions from subtropical New South Wales (NSW) along the Queensland coast into the Wet Tropics, and it is generally much more resilient to climatic and disease challenges than other crops grown in these regions."

"Sugarcane is the economic scaffold for many regional communities in Queensland and NSW. It also produces a large biomass, yet we are not extracting the full potential from this biomass."

"Diversification already plays an important role in the industry through products such as molasses, rum, ethanol, and electricity cogeneration, but this new report by Lazuli Consulting identifies that there are other opportunities for our industry. However, these opportunities may also face considerable challenges in becoming commercial reality."

Mr Fisher said the report was an initiative of the SRA Board and had also been identified as an industry need at a Futures Forum convened by SRA and industry in April 2018.

CANEGROWERS Chairman Mr Paul Schembri welcomed the report as a platform from which the industry can move forward.

"As farmers, we are proud of the crop that we produce and the significant amount of biomass it offers as feedstock to new ventures," Mr Schembri said. "This report is a good starting point for industry discussions around a more diversified future for the industry and the mechanisms by which all sectors can benefit from the rewards that new opportunities present."

Managing Director of Lazuli Consulting, Mr Eris O'Brien, said that the report identified the primary opportunities as electricity cogeneration, ethanol, food products and

densified biomass, and a secondary list of opportunities as chemicals from sugar and animal feed.

Mr O'Brien said that the report reinforced the view that Australia was heavily reliant on raw sugar production when compared with major competitors such as Thailand and Brazil.

"Construction costs in Australia are high compared to other sugar-producing countries, and financing projects is difficult without long-term, commercially priced off-take agreements," he said.

Despite these and other challenges, the report identified the importance of the Australian industry continuing to investigate new technologies and opportunities.

SRA currently invests in this research area through Key Focus Area six of its Strategic Plan: *Product Diversification and Value Addition*.

This includes a major research project supported by SRA through investment from the Australian Government Department of Agriculture as part of the Rural R&D for Profit program and by the Queensland Government Department of Agriculture and Fisheries.

"Lazuli Consulting's report is a timely and valuable input to the industry's thinking," said David Rynne, Director of Trade, Policy and Economics at the Australian Sugar Milling Council (ASMC).

"With world raw sugar prices returning less than the cost of production, and with margins being eroded, Australia needs to reassess its heavy reliance on raw sugar."

"ASMC is in the early stages of developing a revitalisation strategy for consideration by other industry stakeholders including government, and diversification is one of the key pillars of work."

"This report demonstrates the array of possibilities available - to add value and shore up the viability of the sugar industry while delivering substantial environmental objectives," said Mr Rynne.

"The report also demonstrates the array of obstacles our members face." ■

(Above left) Recommendations for SRA from the report. (Above right) The process for adoption of new technology.

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