PRIMARY INDUSTRIES AND RESOURCES COMMITTEE

Members present:
Mr SA Bennett MP—Chair
Mr NJ Dalton MP
Mr RI Katter MP
Mr GR Kelly MP
Mr JR Martin MP
Mr TJ Smith MP

Staff present:
Dr A Ward—Committee Secretary

PUBLIC HEARING—INQUIRY INTO SUGARCANE BIOENERGY OPPORTUNITIES IN QUEENSLAND

TRANSCRIPT OF PROCEEDINGS

Tuesday, 9 September 2025

Mackay

TUESDAY, 9 SEPTEMBER 2025

The committee met at 8.59 am.

CHAIR: Good morning. I declare open the public hearing for the committee's inquiry into sugarcane bioenergy opportunities in Queensland. My name is Steve Bennett. I am the member for Burnett and chair of the committee. Other committee members with me here today are: James Martin, the member for Stretton and the deputy chair; Nigel Dalton, the member for Mackay; Robbie Katter, the member for Traeger; Glen Kelly, the member for Mirani; and Tom Smith, the member for Bundaberg.

This hearing is a proceeding of the Queensland parliament and is subject to the parliament's standing rules and orders. Only the committee and invited witnesses may participate in the proceedings. Witnesses are not required to give evidence under oath or affirmation, but I remind witnesses that intentionally misleading the committee is a serious offence. I would also remind members of the public that they may be excluded from the hearing at the discretion of the committee. These proceedings are being transcribed by Hansard. Media may be present and are subject to the committee's media rules and chair's direction at all times. You may be filmed or photographed during the proceedings and images may also appear on the parliament's website or social media pages.

I just want to break from the script and say how excited we are to be in Mackay. This is a self-referred parliamentary inquiry. One of the first orders of business of the new committee was to talk about issues that may be of interest to this committee, and one of the first things we all agreed to do was a parliamentary inquiry into the future opportunities around sugar cane and other bioenergy opportunities. With that, I open the floor to Mr Nigel Dalton to welcome us to Mackay.

Mr DALTON: Thanks, Chair. Welcome to Mackay. This is the electorate of Mackay and I am really very blessed to represent not only the people here but also those who work in the city and live elsewhere. Sugar is a massive industry throughout the whole of Queensland. Along the east coast we see cane for miles and miles and a lot of us sometimes wonder how it all gets manufactured and exported, making our economy grow. This inquiry is to make sure that it grows further into the future and I am really excited to hear the evidence from the witnesses today and for the rest of the inquiry. Welcome to Mackay. Thank you very much.

CHAIR: Thanks, Nigel. He is pretty passionate about this subject and we thank him for his interest and guiding us through this. I ask you to please turn your mobile phones to silent.

PORTER, Ms Kylie, Chief Executive Officer, Greater Whitsunday Alliance

CHAIR: Good morning. I invite you to make an opening statement. Then the committee will have some questions.

Ms Porter: Good morning and thank you for the opportunity to present today. I really appreciate it. I am here representing the Greater Whitsunday Alliance, GW3. GW3 has been actively working hard to create a biomanufacturing sector in the Greater Whitsunday region since 2018. We have been successful in lobbying for the establishment of the Mackay State Development Area and attracting proponents to region. The role of existing cogeneration plants has been integral in building our biomanufacturing profile internationally. Put simply, we have proponents interested in our region because of our ability to produce large quantities of green energy. It is important to affirm our strong support for the role that the sugar industry can play in Queensland's clean energy future. With 28 per cent of Australia's sugar cane grown in our region and five operational sugar mills, we are already contributing meaningfully to the state's energy mix. Racecourse Mill's 38-megawatt cogeneration plant is a prime example, powering around 30 per cent of Mackay and cutting emissions by some 200,000 tonnes annually.

Our message today goes beyond cogeneration. GW3 sees sugar cane not just as a source of energy but as a gateway to broader biomanufacturing futures. Our region has been laying the groundwork for years through partnerships, infrastructure and strategic planning to become a national hub for industrial biotechnology. We have released our own biomanufacturing blueprint, we have welcomed investors and we have supported the development of facilities like the Mackay Renewable Biocommodities Pilot Plant, which I believe the committee is visiting later today so you will actually

get to see the benefits of a recent $16 million upgrade. Biomanufacturing offers Queensland the chance to produce not only clean energy but also future foods, biomaterials, personal care products and low-carbon fuels—all from the same paddock. It is a circular, scalable opportunity that aligns with global trends and regional strengths.

To make this happen, we require strategic investment in the sugar industry and biomanufacturing infrastructure, streamlined regulatory pathways and longer term policy settings. When we offer targeted support for biomanufacturing industries, we can diversify grower income and strengthen sovereign fuel and food security for Queensland and the nation. We urge the members of this inquiry to consider the full potential of biomanufacturing, not just in terms of energy and fuels but in future foods, biomaterials and wellness products. There has never been a more important time to be broader in our thinking to ensure Queensland benefits from the full spectrum that this opportunity has to offer. Thank you.

CHAIR: Thank you, Kylie.

Mr MARTIN: Thank you, Kylie. I wanted to kick off by asking a question about biomanufacturing—something that I think the committee would be very interested in. You mentioned in your submission, firstly, global trends and that for us to really get the maximum benefit out of biomanufacturing we need, I think you said, some sort of regulation changes and also strategic investments. For the committee's benefit, what is the scale of investment that you think the government should be offering and also specifically what is the regulatory change that would need to be made to give us that head start in biomanufacturing?

Ms Porter: If we are to talk about biomanufacturing in terms of future food production, Australia is already regarded as a world leader in the regulatory framework to manage that situation, which is fantastic. At the moment we are particularly focused around biomanufacturing through a future food lens. That is the type of proponent that is most beating down our door in region. The opportunities that that brings to this region are high-value, quality jobs and also some additional value-added opportunities that our growers can realise and benefit from.

In terms of the investment that is required, this is an industry that does not yet exist at scale. If we go back to any of the really large, catalytic industries that Queensland has been built upon, they have required government to come to the party and really offer some strategic investment to help those proponents get their commerciality across the line, and that is probably what we are missing in the mix at the moment. We are certainly seeing an appetite from government around sustainable aviation fuel investment and low-carbon liquid fuel investment. They are the big, juicy, sexy headlines at the moment, but we are not seeing that same level of commitment perhaps around other biomanufacturing opportunities and the creation of plant and infrastructure.

Mr MARTIN: So essentially it is about coordination at the early stages, before we even know what the industries might be?

Ms Porter: We know what the industries are. It is around making sure that government acknowledge the role they have to play in de-risking the environment for the commercial opportunities to really stack up at these early stages. These are emerging industries that have the potential to create thousands of high-value jobs across Queensland but also really underpin the future of the sugar industry.

Mr MARTIN: Thank you. I want to get down to regulation and barriers. Off the top of your head, are there specific barriers that are like roadblocks for this, or is it just about updating regulation?

Ms Porter: In terms of regulatory barriers, sustainable aviation fuels, cogeneration and energy production absolutely have some regulatory and policy barriers at the moment. There are mandates around biofuels and there is how the co-gen is fed back into the grid. They are really big barriers. In terms of other biomanufacturing opportunities, they are incredibly big water consumers and they are also incredibly big energy consumers, so making sure we bring online these opportunities at the same time that we invest in infrastructure to help get water to them and to help get the energy to these plants needs to be considered all at once. We cannot just go, 'Industry, this is all up to you.' We need to be able to de-risk the environment for them to get them started.

Mr DALTON: I understand that GWA is focused on harnessing the region's potential. Are you able to provide the committee with any examples of untapped opportunities in the region's sugarcane industry? What is untapped at the moment?

Ms Porter: I think it is the opportunity to really value-add into the industry. This is not downplaying the importance of sugar as an export commodity, and I do not think anybody in this room is saying that we should be talking about future opportunities at the expense of the current export

market, but there is definite opportunity to harness the entire value stream of sugar more effectively and I think that as an industry it has been talked about for decades. There would be many growers in this room sitting behind me who have had a long list of promises made to them over many decades about what the potential of their sector can be and can do. I think it is about actually realising those potential value opportunities but also making sure that we back them in adequately. We can talk about bioenergy production, biomanufacturing and biofuels, but at the end of the day we need to make sure we are investing in the industry that can drive those new value-adding sectors, so we have to start at the grassroots—excuse the pun—first.

Mr DALTON: Where would you put that investment as a priority?

Ms Porter: The list is long where we would put that investment as a priority. I think that we have to start with the fundamentals. For our mills to be operational and working to the best of their capacity we need more cane supply so, to me, our investment needs to start right back at the beginning and extend through the entire value chain. We cannot look at one end of the value chain without considering the other, but I think the very first port of call absolutely needs to be around how we invest at the farm to make sure supply is there, how we then invest in the mills to make sure we are maximising efficiencies and product output, and then how we de-risk the new and emerging sectors that can reap the benefits from those other value stream investments.

Mr SMITH: Just going back to biomanufacturing, in terms of the supply chain, how would that work? Obviously we have growers and the mills and then the mills would onsell to biomanufacturing facilities, or do you intend that the mills would then set up these biomanufacturing facilities and be co-ops? What would the structure look like along the chain?

Ms Porter: I think it looks completely different for every single operation. They could be a range of joint venture opportunities, they could be just offtakers directly from the mill or it could be a range or a combination of all of the above. How that works I think is for the market to decide and for the individual proponents to negotiate their way through those market settings with the particular miller.

Mr SMITH: In terms of where you say that the market will decide and the market will take that trend, I guess there could be an argument that here in Queensland that market is not taken down that trend, so what role does your organisation play in getting growers, millers and then potential investors into biomanufacturing to actually set forward a strategic plan, or is that very much the reliance of government and government needs to set forward the strategic plan so that we can have a set plan moving forward and not just allowing it through the market?

Ms Porter: The requirements of a biorefinery, for example, are vastly different from the requirements of a precision fermentation facility, so saying that there is one model that is going to fit every single proponent is not appropriate. Our organisation has assembled what we call a Biofutures Leaders Group which has representatives from millers, growers, ports and logistics as well as local councils and Trade and Investment Queensland. We bring together all parties of the ecosystem that work together collaboratively about how we create the right investment environment in the Greater Whitsundays to achieve our vision of being a globally recognised biomanufacturing hub. We understand that there is no perfect solution or easy solution. We are creating something that does not yet exist in this country. It is not easy, and we know that we are going to have to be incredibly agile and adapt to whatever is thrown at us.

Mr SMITH: You were saying that we want to kick off something that is not occurring in this country yet. Which high-level investors currently doing biomanufacturing globally are looking to invest in Australia? We are talking about taking enzymes and cells to ferment or create proteins to create a new product. In terms of confidence for our growers that they will be able to increase production or at least maintain it as urban encroachment continues, which investors are currently looking at doing biomanufacturing in Queensland—or more so the Greater Whitsunday region—in terms of setting up a biomanufacturing facility in the next 10 to 15 years?

Ms Porter: The world's largest beverage manufacturing company is interested in this region. We have smaller startups coming out of Silicon Valley that are looking to expand into the South-East Asian market. They are looking for transparency over the sugar supply chain. They want to be able to see how our growers produce sugar ethically. Queensland does that exceptionally well compared to some of the larger international competitors, which is why Australia is so attractive in this space. We can also offer some really big confidence around the protection of IP. When a company comes to this country with cutting-edge, world-breaking technology, they know that it can be protected and it is safe here as opposed to going to some other emerging markets internationally that are less secure.

The range of proponents is wide and varied. Trade and Investment Queensland—and we work very closely with them—act as our front door. We welcome them into the region. We have a number of Japanese groups at the moment that are interested in the region. We are just talking about greenfield sites so we are literally starting from scratch. The role of government is to help us de-risk this environment, to get them across the line.

Mr G KELLY: Kylie, how should we balance the consideration of food versus fuel when developing sugarcane-based biofuels at scale?

Ms Porter: That is a really good question. I think that is a really big issue that Australia is going to have to grapple with. I would contend that one of the best ways we deal with that is by increasing supply so it is less of a pointy issue in the future. If we can have confidence back in a system where growers are encouraged and are excited to invest in their operations then that issue becomes less of a concern.

There are many value streams that can be taken out of sugar and some are not necessarily food intended. Gas is a great example and fibre is a great example. I think there is still an opportunity for Australia to do both food as well as fibre for fuel. Getting that balance and those settings right will be challenging. However, let us create an industry where people are encouraged and excited about getting re-engaged in it, to increase supply.

Mr KATTER: That was an excellent question, member for Mirani. Kylie, you are talking about intervention. As I understood it, the industry, say, 10 years ago, was a big driver for this and it was all about the ethanol mandate to get the horsepower in the offtake setting so that there is a big offtake there for a commercial enterprise to come in and say, 'We have the guaranteed offtake.' That has fallen over. There was a four per cent put in. I think there was a government mandate on just government cars that drove usage to six per cent, which was the peak that we hit and now we are back wallowing in two or three per cent. We are not talking about ethanol, I know, but the second generation comes off the back of the core one. Do you feel that the ethanol space is still a big driver?

Ms Porter: I think the millers or the refinery guys are best positioned to answer that question. Certainly the uncertainty around the mandate has really halted their long-term investment and upgrade plans around refining opportunities. My observation is that the uncertainty around the progression of the mandates absolutely stymied investment and has probably held the industry back.

Mr KATTER: If you park in a mandate then you still see ethanol as a big driver. Ethanol and fuel are big drivers to get the rest of it going.

Ms Porter: Absolutely. It cannot just be one thing. It is about having numbers of strings to our bow, and ethanol production certainly is a part of that.

Mr KATTER: I am really interested in the space that the last question went to. We do hear from the growers and so on. How do you see that playing out with the supply if we want to gear up into large scale, because everything has to be done at scale? You then have that tension between sugar producer and food versus fuel and so on. How do you see that playing out? That supply was a good answer. How do government and advocacy groups interact with the industry to say, 'We need to really push into this space'?

Ms Porter: I think there are a number of issues at play here, particularly around feedstock. Queensland is currently involved in another feedstock study and not just around sugar. We have a very good handle on the volumes of sugar and all of the streams that come out of sugar, but they are looking at an all-of-Queensland feedstock analysis. Australia is also doing that. The federal government is doing that work as well.

We need to remember that this is not just around sugar. Sustainable aviation fuel has other opportunities and other feedstock sources not including sugar. In terms of global demand for sustainable aviation fuel and our current volumes of what we are growing in the sugar industry, those two things do not line up. It is likely that we will be having to import some ethanol—or probably a lot of ethanol—to really meet the sustainable aviation fuel requirements for outbound jets from the country.

CHAIR: Kylie, I know that you have looked at the committee's terms of reference. This is a self-referred inquiry and we have set those eight points. Without looking for criticism, with your experience is there anything that you think we have missed in our terms of reference, to try to make this tangible? I know your passion for your region and the industry. I am seeking an opinion.

Ms Porter: I am incredibly grateful for the opportunity to discuss the really rich potential that the sugar industry can deliver to Queensland. I think the scope of the inquiry was broad enough to allow a really rich and fulsome conversation. It is really exciting to see the sugar industry elevated to a point where we have a room full of people who are excited to talk about it. Well done to you all.

CHAIR: I think it is mainly because it is rainy that they are here today!

Mr MARTIN: I have a question on something that you touched on before about sustainable aviation fuel versus other options. Can I get your organisation's opinion or advice, if you have any, about SAF versus biomanufacturing? The committee is aware that there are issues with SAF and scale. We have all heard about what can be produced here and what cannot. If the committee is looking at what is a better option for investing state government money, what do you see has a bigger potential for Queensland: SAF or biomanufacturing?

Ms Porter: If we are to look at the focus areas for the Queensland government around investment and sovereign investment, it is defence, biomedical, sustainable aviation fuels and biofuels. Biomanufacturing, for a range of bioproducts, is kind of missing at the moment, yet the technology that they use and deploy for making a range of bioproducts is actually often the same as they would be deploying for biomedical or potentially some biofuel. You can ferment the biofuel drop-ins in the same sort of plant. I think there is just a bit more of a narrowing of focus, which is probably not super helpful for us at this stage. The technology is broadly the same and the feedstocks are the same. The opportunity is strongly linked to our regional skills and capability and workforce. That is in Mackay but we could also say that for all of regional Queensland that is sugar growing. I think it would be really disappointing if we were to put all of our eggs in a couple of baskets when the scale and scope of opportunity is so much richer.

Mr G KELLY: Where do you see the strategic growth corridors for the Mackay and Isaac region in terms of the land use by energy development? The Pioneer Valley is right here, and we know how important that valley is. We have corridors that could grow cane but is the water there? We have land that has the opportunity to grow cropping but obviously it is marginal land and with water it can develop. Where are your thoughts on those sorts of things when it comes to the Greater Whitsunday region?

Ms Porter: We have plenty of land opportunity to convert into high-value agriculture. Our water provision broadly overall for the region is still pretty strong. Some of the barriers attached around getting water are all emergency related and the costs of energy. It is about finding that balance between how we actually expand but pay for it.

We also need to consider that, particularly in our regions, we have high-value agriculture land butted right up to the edge of the city. There are challenges there in terms of how we strategically plan residential growth along with the demands of agriculture. That is particularly acute in some of our northern regions around the Whitsundays. It is the fastest growing regional LGA in the state at the moment so there are some really big challenges, particularly around the Whitsundays. We have to be able to find the balance between industry and population growth. I think we can do it. The planning tools are there to help us to do that.

Mr SMITH: That perfectly segues into my question. As you said, there is so much opportunity in biomanufacturing, biofuels and so forth, but you hit the nail on the head then in terms of urban encroachment. Appreciating you are not the council, what right-to-farm protections has council put in place for our growers in this region?

Ms Porter: From a local planning governance perspective, all of our councils are hyperaware of the importance of agriculture land. I think that is recognised across all of the planning instruments in this region. I am sure some of the growers may have some different experiences perhaps, but my observation is that our three councils are acutely aware of the value and the importance of agriculture to our economy, especially as our economy is going to continue to evolve and change in coming decades. We absolutely need to underpin and continue to support agriculture.

Mr DALTON: I have one question on jobs. Kylie, have you done any modelling on how, in the Mackay region, we can sustain these new industries with the workforce we have at the moment?

Ms Porter: Would I like a scenario whereby there were 2,000 extra highly skilled people in this region tomorrow? Absolutely. I think there is probably not a region in Australia not also asking for the same magic wand to find that. This region is particularly blessed with large amounts of highly skilled labour that are very attracted to the mining sector. In the coming decades, that is likely to change. There is an opportunity to link those highly skilled technicians and trade workers with the demands of a biomanufacturing industry that also requires highly skilled technicians and trade workers. We need

to be thinking that our economy is going to change. There is an opportunity for us to transfer some skills across to new industries and we should be 100 per cent focused on that. This is a region that makes an incredibly big contribution to the Australian economy, at around $79 billion. We need to be hyperfocused on what our regional economy is going to be in the future and how we protect our communities. Biomanufacturing is a way that we can capitalise on our strengths and transfer jobs and skills and at the same time protect our communities.

CHAIR: Thank you very much, Kylie, for your presentation and more importantly the mountain of work you have already done to support the committee and its work. We pass on our thanks to the Greater Whitsunday Alliance.

BORG, Mr Joseph, Chairman, Canegrowers Mackay

CLARKE, Mr Glenn, Chairman, Canegrowers Proserpine

LEACH, Mr Brett, Deputy Chairman, Canegrowers Mackay

CHAIR: Welcome. I invite you to make on opening statement and then the committee will have some questions for you.

Mr Borg: Thank you very much, everybody, for giving us the opportunity to speak here today. So that everybody knows, my name is Joseph Borg. I am Chairman of Canegrowers Mackay. Brett Leach is Deputy Chairman of Canegrowers Mackay and Glenn Clarke is Chairman of Canegrowers Proserpine. Mackay Canegrowers also covers Plane Creek and Sarina. We cover a significant footprint of the industry, and we represent about 80 per cent of growers in that area.

Needless to say, this inquiry is important to the future of the sugarcane industry. It is wonderfully ironic that the first hearing is held in the 'sugar city'. This is the home of the 'sugar city'. As I say to my constituents up and down the state, we are the centre of the universe when it comes to the sugar industry. Now, there are other arguments around that—Glenn, aren't there—but generally we claim the central region, and we will certainly continue to do so.

As to the importance of this inquiry, the sugar industry has been around for 100 years, and next year Canegrowers Mackay, which is the birthplace of Canegrowers in the state, is celebrating 100 years. We have had 100 years go by and hopefully we have another 100 years ahead of us in some shape or form. I think we are going to see a definite change in the dynamics of the sugar industry going forward.

Kylie has done a terrific job touching on all the different uses for sugar cane. We know we can make bioplastics and fake meat or replacement meat—it kills me to say that—fake eggs, fake milk, and all that sort of thing. It is limitless as to what we can do at this plant. However, for me personally and for Canegrowers Mackay, we would like to focus on one particular thing—and it is a local thing—and that is cogeneration. As far as we are concerned, it is proven and it is local. Of course, the Racecourse Mill has a cogeneration plant which has been operating for around 12 years. It was built at, I think, a cost of around $120 million at the time. Let's make no mistake, clean, green renewable energy is what the world wants. We know we have environmental challenges around the world and we know that that is the way to go forward.

As a matter of interest, I have come up with some figures that are around-about: Mackay Sugar produces around about 215,000 megawatts of electricity across its three mills, and of that about 115,000 is exported into grid, powering about 20,000 homes. That is across the two mill sites as well as the cogeneration plant. The cogeneration plant supplies around about 30 per cent of Mackay and districts' electricity. I think it is also interesting to note that compared to coal-fired power or whatever it may be, we are saving 1.5 million tonne of greenhouse gases. Since 2012, the sugar industry across the state now has invested over $500 million in cogeneration plants, and I think that has to be brought to everyone's attention. In regards to wind turbines—these are figures I have found online, so I am just going off what I have discovered—there are around about 72 wind turbines across Queensland. From my understanding, there are government subsidies of around about $500,000 each per year. So with $36 million in subsidies to the wind turbines, we can make some big inroads into cogeneration plants as well. Like I said, it is clean, green, renewable energy and they operate 12 months of the year rain, hail or shine. That is the way it goes.

However, cogeneration has its challenges as well as benefits. As feedstock producers, as a grower, it gets a bit frustrating when we are supplying feedstock to a cogeneration plant, which is doing all this, and we cannot access cheaper electricity for our irrigation pumps in order to do that. During the day, when the solar soaker at Harrup is at its premium, it is actually costing Mackay Sugar money to pump electricity into the grid, not making anything out of it, and then us as irrigators are actually paying through the nose for that. I just want to make some basic assumptions around where that has taken us.

Sugar cane is a circular economy. What we do reflects on the mills; what the mills do reflects on us, and it goes round and round. I will give you an example of what the inability to use the electricity that our mills are producing at a cheaper rate is costing us. Pioneer Valley Water is the largest irrigation scheme in the Mackay district. Last year, primarily because of higher energy prices, we used six per cent of our allocation. We have a full allocation; we used six per cent. Some quite simple figures are: if we were able to get that to 56 per cent—and again these are around-about figures—that would mean an extra 20,000 megalitres of water was applied. One megalitre is equivalent to

roughly eight tonnes of cane. That is 160,000 extra tonnes of cane to go through the mill rollers. At gross price at approximately $50 a tonne, that is about $8 million. We have independent financial advice which says that for every dollar at the farm gate, the flow-on effects to the wider community is $6.40. Work that out. That is an extra $51 million in lost opportunity for the wider Mackay community due to not being able to access the cheaper electricity.

Mr Chairman, I am not going to continue on. I think I have put my point. We know there is a legislative way. There are microgrids. We can work with virtual microgrids. There are ways of doing it. We just need legislative change to do this. The obvious thing is, too, we have one cogeneration plant and we have five mills in the area, so there is a lot of lost opportunity there. There is no reason that if another three were able to be put in, that improves milling capacity because it upgrades boilers and that sort of thing. So, it helps them and they make more money out of it. Of course there would have to be a revenue-sharing arrangement so the growers got something out of it as well, but that could be worked out down the track. At the end of the day, Mackay Sugar growers operated for 17 years on a cane payment formula that gave us that ability to access that revenue sharing. It is there; it can be done.

In closing, I would just like to say that I think we have a very exciting future, but this is something we can do here and now. If we can get this legislative change through, we can get the benefits tomorrow and Mackay Sugar and the wider community can get the benefits tomorrow. Thank you for the opportunity to present to you. Let's work together to try to get some changes through to secure the future of this wonderful industry.

CHAIR: Well said, Joe. Glenn, did you have anything you wanted to add to that?

Mr Clarke: Yes, I fully endorse Joseph's comments, but for me as a grower, I am more interested in how to get there. We understand there is a whole raft of products out there that we can make, but from the ground up and how to land there is what I really want to talk about. At the end of the day, there has been no really large-scale diversification project successful in the industry, and that mainly comes from the lack of not funding but government policy. This industry was built on the Queensland Sugar Industry Act where you simply gave the government the power to build mills, put railway infrastructure in place and develop the industry. It is a time for a biofuels act and really give it some teeth. I am not here to identify the product, rather how we get there.

We currently make raw sugar and we have to continue to make raw sugar. We cannot simply make a transition overnight and jump to a different product. In an ideal world, you would bolt something onto the back of a mill or around a mill because all railway lines lead to the mill. If you want to build a stand-alone factory somewhere, to put a lot of this freight on the road will be a major drama. So, you need to come to the industry and talk to us about what sort of capacity we have and what we can do. Once that aligns with government policy, if we want to go down the road of bioethanol or whatever that product is, you will have a handle on our capacity and where we can go. You then need to set legislation up or an act which has a long-term time frame of maybe 10, 15 years for this to happen. This will not happen overnight. It will be a long-process plan.

People are very much not willing to invest in the industry because of the change of policy. We talk about cogeneration. That was all the go 25 years ago. There was an investment of big dollars into cogeneration. Then the solar panels on houses deal came out which was basically subsidised by the Labor government. That threw a spanner in the works for cogeneration. Now they have too much power during the day and they do not want to pay us. That is a typical example of why investors do not want to invest in the industry, because the goal posts keep shifting down the track. That is what we need to iron out and get a clear view of where we want to go.

The other thing is payment for growers. We need to be in the room to talk to millers or the processors of whatever it is going to be about our product. We do not want to jump out of the fire into the frying pan or vice versa. That is important—we need to be in the room.

It is about choice. Perhaps down the track the sugar juice becomes the most valuable product. You can divert the sugar juice into that product, into sugar or to somewhere else, so that means revisiting the cane payment formula. There are lots of ways we can attack this beast, but it needs to be carefully planned and carefully set out as to how we get there.

The opportunity is probably getting closer. For 30 years we have heard of products that could be made, but with the greenhouse targets being now set, we have an opportunity to do something. Even from the federal government we get a very confusing picture. Is it battery powered? Is it hydrogen powered? We do not have a clear indication of where they want to land over the next 20, 30 years which puts a great cloud over where we are going to go. That is pretty much from me. I am happy to take questions.

Mr SMITH: You made some interesting points there about cogeneration and the future of cogeneration and maybe what legislation needs to come into play. In a couple of weeks, the energy minister will release the energy road map. Have any canegrower bodies been consulted by the Treasurer's office in regards to the energy road map and the role you can play?

Mr Borg: I cannot speak for certain, but I assume the Brisbane office would have been part of that because that is the head office of Canegrowers around the state. I would say they would have been involved in that. I was not personally, but I assume they would have been part of that, yes. They will be following the same lines as what I have basically stated here.

Mr SMITH: I found interesting the part where, Glenn, you spoke about perhaps the juice becomes of real value into the future and, especially with regards to the submission from our previous witness around bio-manufacturing, it is the juice that is the real quality in the bio-manufacturing. In what way does that change the way that growers are currently paid? Would you want payment upon delivery into the bins and then a percentage coming out? How does it change the structure for our growers?

Mr Clarke: We would probably have to change the structure a fair bit. At the moment, in reality, it is the mill's property. Once you dump it into that sugar bin—that mill bin; that cane bin—it is their property. We have only been able to get choice of marketing and recognition of our share in sugar the last probably six, seven years as a round figure so that whole payment formula needs to be rehashed to give growers a little bit more ownership of their product. The mill gets their cut out of it for the processing, but it needs a bit of a think tank, and whether the millers are whether to go down that track is a different story.

Mr SMITH: As much as government may plan for bio-manufacturing futures and bioenergy and so forth, at the end of the day the market is currently susceptible to the will of a foreign investor in terms of the millers. Have millers in this region given any insight into a future direction—whether it is co-gen or bio-manufacturing biofuels—or does it seem they are happy to continue to just produce sugar at this moment?

Mr Clarke: Wilmar is our miller, which is different to Mackay Sugar. They are very tight-lipped about where they want to go. In essence, they are sugar traders around the world. We have had conversations with them—what is your long-term plan; what is your vision? They are very tight-lipped. I am not too sure where they want to go. They have a co-gen plan in Proserpine, but, other than that, I am not too sure where they are heading.

CHAIR: We will probably direct those questions to the millers.

Mr DALTON: Joe, when I was elected last year, one of the first places I came was to visit you and my eyes lit up when you mentioned this microgrid system. I am very glad that we have been able to bring it to this point now. I am sorry it has taken a while but politics does. Are there any plans for pilot projects where this could possibly work? What are your feelings on that, and how would you like to be involved?

Mr Borg: Nigel, thank you very much for the question. The simple answer is we have already done the pilot projects. QFF did one in the Palmyra scheme, which is part of Pioneer Valley Water, about two or three years ago. I can dig up the information, it will be there somewhere. Basically it was a virtual microgrid where all the growers involved were provided with smart meters. Their account was sent with whatever the standard price was but they were also sent a phantom account which said, 'If a microgrid was set up this is what you would be paying.' Yes, it has absolutely been done. It has also been done in other areas around the state, but I am aware of that one because I was involved in it. I certainly would love to dig that information up—I am pretty sure it was QFF that did it. If there is anything going forward, of course, as canegrowers and as Pioneer Valley Water we would love to be involved.

Mr DALTON: Chair, would it be possibly to have that tabled at some point?

CHAIR: If you ask for it, yes.

Mr Borg: I do not think there would be a problem. It was QFF.

Mr MARTIN: Following on from the issue of energy, have you had any indication from your millers about where they are looking at going in terms of bioenergy sugarcane in the future?

Mr Borg: Yes, sure. Obviously, we are a part of Mackay Sugar which is a part of the north sugar group, a German company. As to the direction: they are claiming they are here for a long, long time and I truly believe that. Sugar is their primary source, but I can tell you that the hierarchy of Mackay Sugar, particularly locally, totally get this cogeneration situation. Our views are in full

alignment because ultimately if we get cheaper electricity out of their co-gen we grow more cane and that gives them more throughput, more money to put back into maintenance and into the system and the growers make more money. It is just a circular economy. I can tell you in regard to what we are talking about—the legislative change around cogeneration—we are in complete alignment.

Mr MARTIN: For the benefit of the committee, could you expand a bit more on essentially how the grower would benefit?

Mr Borg: Sure.

Mr MARTIN: From what I am hearing is it will not necessarily be higher prices or more offtake; it will be—

Mr Borg: More production.

Mr MARTIN: So there will be more production?

Mr Borg: Growers are not irrigating because of the restrictions on the cost of electricity.

Mr MARTIN: So cheaper energy will mean more production?

Mr Borg: We will need more irrigation, on average, which will grow more cane. As I said, one megalitre of water applied to the ground is roughly equivalent to eight tonnes of extra cane.

Mr MARTIN: Do you have an idea or an estimate on how much more production that means?

Mr Borg: I gave an example in my speech. If Pioneer Valley Water, which I am guessing is probably only 30 per cent of the area, used half of its water, there is an extra 160,000 tonnes which, as I said, is worth over $50 million to the wider community in flow-on effects. It is circular. If Mackay Sugar crush more cane, they make more money and that allows them to spend more on maintenance. That shortens their season up. Cane is a very interesting crop because the shorter the season in the optimum time, the more money you make as a grower and a miller because your sugar production is maximised. It curves off at the start and at the end. It is all circular. If we all work together it benefits everybody. At the end of the day, it is costing Mackay Sugar to put electricity in the grid when solar is at its premium. They could be making something, we could be utilising something at a lesser charge and we are both winning. Then, the government is winning through the flow-on effects through tax dollars to the wider community.

Mr G KELLY: Brett, I have known you for quite a while now, mate. There is something I have noticed about you—you are all about the next generation not the now, which is a great thing. We all respect that. What are the key roadblocks preventing the industry locally from expanding into bioenergy and attracting the next generation of growers into the cane farming industry?

Mr Leach: Thank you for your question. You are right. All of this is great but you are talking about building something off a shrinking base and not an expanding one. The sugar industry is shrinking. There is no better example than what we saw in Mossman. A tragedy struck up there and the government just walked away from the entire place—look after yourself, go and do something else. If that was any other industry, you would have gone in there and rebuilt that whole district and industry overnight. That did not happen.

My younger brother shares in the farm with me. He lives in Brisbane, he brings his boys who are now 14 and 12 up to ride motorbikes, drive tractors and chase around the farm. They tell me how I am destroying the reef and the damage I am doing to the environment because that is what they are taught in schools. If we do not go back and build our base and allow our footprint to be increased all of these things in 2040 and 2050 is an absolute waste of oxygen. We need to look after our industry here and now. We need to be able to set it up so that our next farmers come through. My son is 24 years old. He works out in the mines as a diesel fitter. He earns $206,000 a year. Why would he want to be a farmer? I would love to earn 200 grand a year, so how do we encourage him to come back and be involved in our industry and other younger generational farmers like them? We have to be able to show that there is a profitable, reliable and secure base for them to work off and for them to become farmers and enjoy that lifestyle now and into the future.

For me, it has to start right back at our schools. We have to start teaching children in our schools the importance of a good, solid, viable, economical agricultural industry. We need to encourage our young engineers to choose agriculture over mining, over medical and over renewable energy because that is not happening either. We have companies like SRA that are struggling to employ scientists to help us invent the next varieties and start to achieve some of these goals of biomass and the cogeneration and fuels. Unless this happens, it is not there. We are planting 20-year-old varieties. These are the issues that I believe the government can handle here and now to help us strengthen our base and our footprint so that our industry is growing. From that, a lot of

these questions can be answered and we can built that base up and out because at the moment you are trying to build a bigger footprint off a shrinking base. We all know what happens then—it will fall over. So the first thing government has to do now is build that base, build that footprint and encourage our next generation of farmers. You do that by showing them that in the future there will be a strong, economical and viable agricultural industry that is supported by all levels of government because that is not happening.

You asked the previous speaker about the urban footprint. We just addressed council two weeks ago, and there is no support from Mackay Regional Council to secure urban agriculture. My rates have gone up 305 per cent in five years. It used to be a budget item I barely even addressed; now it is third on the list behind harvesting and fertiliser, and it is growing every day. It cannot continue. It is driving us out of the industry. What the answer is I do not know but, again, it is just another problem that government has to help us address because unless we strengthen our base you will build a pyramid that will fall over.

CHAIR: Well said, Brett.

Mr KATTER: I have two questions. I had to recalibrate them based on what you just said because I would like to lead into that. If you go to Mulgrave in Cairns, you will scarcely find one person who is trying to stop the urban expansion that would destroy their cane production. All the council wants to talk about there is the expansion onto their cane production area. I am almost glad, in a way, to hear that is the same case here because my experience has been councils are not too focused on strategic agricultural land. I would see that as a requirement of the state policy wise to protect that because my experience with councils is they are not that invested in trying to reach the aspirations you are talking about here.

Mr Leach: No, they are not. As I said, we addressed council. Some councils are very supportive of us but some are not. If I can give you an example, Mr Katter, the land directly diagonally from you is 120 acres that just sold for $5.6 million, or $112,000 a hectare. This bloke sold a third of his business out to the mines. He was rolling in cash and needed to dump some money so he is dumping it in agricultural land. That will affect the value of my property for rates moving forward. Council has to be encouraged to come up with a system where that is, in particular, pulled out to say, 'That is ridiculous.' That comes back to the government's land valuations, too, because when we talk the land valuer he just says, 'Oh, we do not set the rates that is council's problem.' You go to council and they say, 'Go and see the land valuer. It is not our problem. Go and see government.' Everyone is passing the buck back to the boards and we are paying the price.

Mr KATTER: It makes a hell of a lot of sense that you would focus on co-gen here because there is that link with energy prices and feeding back in, but where you do not have the irrigated cane—moving up to the Herbert Valley and Cairns—they will not be as invested in co-gen and seeing that benefit. Kylie discussed having ethanol as a primary driver. I know a lot of your growers are agnostic or ambivalent about any aspirations in biofuels. I have always seen it as a live export to the cattle trade. Is there an aspiration there? You have to go big. If someone is going to build an ethanol plant they need a fair bit of supply which takes investment from the canegrowers' lead groups.

CHAIR: Do you want to put the question? We are going to run out of time otherwise.

Mr KATTER: It is a bit hard to condense it; you know what I am getting at. Is there an appetite there from canegrowers to look further into the future and say, 'Yes, we do want to build an industry here,' because I think it will require that?

Mr Borg: Absolutely and, yes, we are. I had a pretty good idea that Kylie was going to go over the wider view. In my eyes, the reason we chose co-gen was because it is here and now—it is something we can do—but absolutely, yes, we are involved in that sort of thing and all options are on the table. We are not putting anything off the table, Mr Katter.

CHAIR: With a couple of minutes to go: Kylie was asked about regulatory burdens, could you give the committee an example of the regulatory burdens that are currently in play?

Mr Borg: The previous speaker, Kylie, talked about the expansion of new land and everything like that, so certainly vegetation management definitely restricts that. The one for us—considering I am focusing on cogeneration—is that regulatory stopping of a power purchasing arrangement between Mackay Sugar and growers where it has to go through Ergon or whoever it is and they are clipping the ticket. That is the legislative burden that is directly hitting what we are trying to do. It is interesting. Back in 2017 I was given the opportunity to speak with Anthony Lynham, who was the then energy minister, and Anthony got it. He understood it totally; he was across it. His comment to me was, 'I understand where you are coming from. I think I can do something about this.' Then, unfortunately, his circumstances changed and a month later he resigned.

CHAIR: We did get some good tariffs out of that though.

Mr Borg: Anthony Lynham did a very good job because he understood it. He was across it and he knew the legislative barriers. If we can make that link with virtual microgrids to cogeneration to power purchasing arrangements, that will create some massive differences to our industry and flow on to the wider community.

CHAIR: Thank you for your time here this morning. It has been very informative. I encourage you to put in that submission before 8 October. While I have the chance, I would like to welcome a couple of local councillors to the hearing—Peter Sheedy and Nathenea MacRae.

COCCO, Mr Robert, Chief Executive Officer, Regional Development Australia—Greater Whitsundays Region

CUTTING, Mr Stephen, Deputy Chair, Regional Development Australia—Greater Whitsundays Region

SCHEMBRI, Mr Paul, Committee Member, Regional Development Australia—Greater Whitsundays Region

CHAIR: Welcome. I spent a fair bit of time talking to Stephen last night and that was very informative. Thank you for your time and energy. I invite you to make an opening statement.

Mr Cocco: Firstly, thank you for the opportunity to be here this morning and for the broader opportunity that the inquiry provides. I imagine previous speakers have covered a lot of the fundamental detail and other opportunities. From RDA's perspective, a couple of key opportunities that we would like to focus on revolve around bioenergy and the broader opportunity outside of bioenergy in terms of nutraceutical, pharmaceutical and other high-value products. We understand that the terms of this inquiry are very much around the bioenergy focus, but running concurrently and hand in hand with that are these other opportunities that broader bio-based products and their generation can provide.

The essence of that is trying to ensure we are focusing on those products that have the highest returns and highest opportunities in terms of development. Clearly, with biofutures and bioproducts, from my involvement in the industry—which stretches 35 or 40 years—a lot of this has been seen before so I suspect there is an opportunity to learn from what has been done in the past and then, moving forward, work out how we progress.

Undoubtedly, the focus is around a diversification of opportunities. That includes continuation of the role that sugar plays. Sugar has for eons been effectively a key product around the longevity of the shelf life of food products. In order to feed the world, we still require significant volumes of sugar from a preservative perspective. It is not a matter of all biofutures or all sugar; it is actually a diversity in terms of opportunities that we should look at.

Critically, as previous speakers have said, there are some key requirements around the opportunity to grow the industry concurrently with these discussions. In fact, that creates a positive environment in terms of industry growth—whether that be fundamental production growth out of more area under production or, directly from an RDA perspective, more production off given land. We only have to look historically at the yields in this district back in the 1970s, 1980s and early 1990s compared to what we see today and it showcases that there is capacity for additional vertical growth in terms of production rate. No-one is seeking to lay blame. There is an opportunity here to leverage off the good R and D and the knowledge the industry has and provide the right investment environment that gives confidence to producers and millers to invest.

There are a number of issues that we identify in regard to generally a change in fundamental arrangements around risk and reward that exist between growers and millers. There is an opportunity to have a more advanced set of risk-reward characteristics in regard to sugar arrangements, sugar payments and those sorts of things. In fact, Mackay in the past as a cooperative had explored those options and implemented some of those options around some of that shared risk.

The other activities obviously revolve around critical infrastructure to support bioindustries moving forward—whether that be enabling feedstock supply, water and base load energy provision to actually underpin some of those operations and the right sort of capital and risk investment environment to support those sorts of industries in their investment decisions as well.

We are happy to answer questions. We did submit an initial document to the committee. I am not sure if you had a chance to have a look at that. In due course, we will be providing a fuller submission by the due date.

CHAIR: Thank you. The protocol normally is that I hand over to the deputy chair, but I will just comment on your submission. We were talking last night and you are going to do another one. This is very high level and there is so much in this so we would love to hear more detail from you.

Mr SMITH: I will just note that Dr Anthony Lynham has texted me and said that Canegrowers are great to work with. He looks forward to your support in the future.

We are having discussions about the abundant opportunities from sugar cane—in terms of biomanufacturing, biofuels, SAF, feedlot production, cogeneration—but there are so many moving parts in the industry. We have so many different regions, we have our canegrowers and we have

different mills and those mills are owned by different foreign entities and so forth. Is there a need for a greater roundtable discussion where everyone is in the room and there is almost a drawing of the map where you say, 'You've got enough production here to do SAF so that is where you should be looking'? Do we need a statewide agreement or at least some sort of a roundtable agreement where there is a vision moving forward so that MPs do not keep having these inquiries every five to 10 years? Is there something bigger that needs to happen and maybe at a federal level as well?

Mr Schembri: I certainly think that is a great idea. One of the things I said when I left the role as chairman of Queensland Canegrowers is that we have been talking about these opportunities for 40 years. We have been talking about it ad nauseam and I cannot afford to wait another 40 years. The reality is that I like this format because not only can you hone in on the opportunity but you can identify and zero in on the roadblocks and the barriers.

In terms of the industry, it has this element of individuality amongst the regions and they have their own cane supply agreements, but it is an industry per se and it does operate by having general overarching cane payment systems and so forth. I think the real key to today and this inquiry is what happens after it. One of the options should be a round table between the state, the federal government and the industry because we are all in this together and everybody has to play their part.

If you look at some of the key roadblocks, for instance, you have got the need for government intervention. Robbie Katter knows all about ethanol; his family has pursued it vigorously for a long time. We have attempted to grow the ethanol industry in Australia. We tried at a state level and a federal level, but guess what. None of those mandates were ever enforceable. They were voluntary mandates so we have lagged well behind the rest of the world.

To answer your question: I think a round table would be excellent to bring everybody to the table. I know the industry and, despite the fact that we are all in regions, we do respond to an overall sort of universal approach.

Mr DALTON: Steve, this is probably for your area. Will our local water infrastructure be sufficient to support existing industries and the expansion of future bioenergy and biomanufacturing industries, alongside community demand?

Mr Cutting: I think the quantum in terms of irrigation versus what you need for potable water for domestic use is chalk and cheese—absolutely. It is like all of the trunk infrastructure and trying to get it to the source of where it is going on the field or getting it back to a water treatment plant. I guess that is stemming out of a few comments. In precision fermentation, the amount of water that is used is considerably higher. When you size it against the amount of water you would need for a METS type businesses, it is a quantum by 100. Sugar mills use and generate lots and lots of water. In this context it is really about who sets up the enabling infrastructure. If it is a state development area, it is in a particular location, but if the canegrowers want to get water to the back of Palmyra then, yes, there are opportunities to fund power from behind the meter but there are a whole heap of regulatory issues around the energy market.

If you want some reading, there is a book called *Blackout* that describes how AEMO has been set up incrementally over many years. As an example, if you had more than five megawatts of diesel power generation as an emergency backup at the hospital and you tried to stick that into the grid, AEMO would want you to have all of the same power quality requirements as a coal-fired power station. It is the same for Mackay Sugar or Wilmar who want to put into the grid. If they want to inject into the grid, then there are provisos on the size of that connection and there are fixed charges and energy charges, but they are not retailing power. At the moment, in the arrangements around who can retail and sell power, it is within your boundary.

There was a study that Eureka Energy did. They said that behind-the-meter poles and wires is cost effective at about 16 kilometres. They looked at getting that out—'Let's do a test case and see if we can get out to somewhere like Palmyra and power some of the irrigation pumps out of the river at Septimus or somewhere through there'—but it is the regulation. People keep asking, 'What is the regulation stopping a lot of cogeneration?' It is the ability to freewheel power purchase agreements to where the power is used. Technically, if you are a retailer, you can do that, but that is the problem. It costs a lot of money to do the quality assurance and power quality correction to be a retailer.

If there is one area you need to address in terms of growing cogeneration—which every sugar mill does in some form and has done for over 100 years—it is the regulation around the sale. Joe nailed it: if you want to set up a power purchase agreement with your own miller, there are regulations around once you go out of the boundary.

Mr MARTIN: I have a question about comparative advantage. Firstly, if the state government is looking at investing in a particular region to support bioenergy and sugar cane, why would it be this area and why not other areas? A previous submitter talked about Mossman so why invest here? A follow-up to that would be the international situation. What is Queensland's competitive advantage over Brazil or other countries that are way more down the track and advanced in this area?

Mr Cutting: In my day job, I do lots of feasibility studies and we have to do end to end. It is a whole value chain, from plate to gate or whichever way you want to look at it. In Queensland, the sites and locations that have the greatest values are where you have very short logistics chains. If you were at Mossman and you wanted to sell sustainable aviation fuel, there is no demand for product of any size there. You have to get it back to Cairns and then get it to where you want—so location, location, location matters.

The other thing that matters is a lot of the times you have to start at the market and work backwards. What is driving SAF is that the International Civil Aviation Organization made a statement 20 years ago that they did not want to have growth in carbon emissions past 2035. A lot of that was going to be taken up with engine efficiencies, but with all of the Boeing failures they cannot rely on that. There is a push from an international organisation to say there is a market for SAF if you can make it, but they have got no flowback all the way through to the feedstock. It is a market driven demand but the cost of production may outweigh the $6 a litre. You have to ask, 'What is the product we are trying to sell and can we do it better than the proponents?' and that is all about logistics. If you are making ethanol, 40 per cent of your input would be in getting sugars to the front gate. If you have to collect biomass from 200 kilometres away, you are not going to make ethanol at anything under $2 or $3 a litre in the cost of production.

All of these projects need that long value chain looked at. You start at the market and work backwards. There are a million things you can make. As Rob mentioned before, there is a great graph that shows you bioproducts versus volume of sales versus price. If you can get $1.50 a litre for ethanol you would be doing really well. They are selling kerosene-based aviation fuels for around a dollar, but if you made a precision fermentation—used raw sugar to make a milk replacement—you might get $20,000 to $30,000 a tonne. When the furfural project was kicking around it was $5,000 a tonne. When you are looking at $600 a tonne for raw sugar that is what it is. It is the value-add. Kylie hit on it; how do you ratchet that value. You are already going to make the raw sugar, stick it in a shed, so you can either take it out and sell it to Korea to make soft drink or you take it back and ratchet it up to high value. I think that is the problem. That is what we have always done. Where is the business case to get the benefit for everyone?

If it were a biomanufacturing process, you can make fuels out of precision fermentation but its cost of production would be much higher than just making ethanol. If you want to decarbonise you can put ethanol into all of our transport fuels in Australia. You do not have to go to SAF to decarbonise, but there is no market-willing people to use more green fuels. That is something the government can control. We have tried with mandates. If you look at the Minnesota model, in 1975 the US went from practically no ethanol to up to 60 billion gallons of ethanol today. It was done on the model of being able to set up a template of how to develop an ethanol co-op with farmers and then lend the money to get up-front construction and studies. Then you pay it back when you hit 85 per cent biomanufacturing. It is a totally different mechanism of support. As good as the mandate might be when you made a factory and you have produced the ethanol, it is not much good if you have no up-front capital to kick it off.

Mr G KELLY: How do de-risk early stage commercial development in the biomanufacturing sector to attract private and institutional investment, and could you expand on your recommendations?

Mr Cocco: I suppose there are multiple aspects to do de-risking fundamental investment, particularly from government, whether that be state or federal. As we said earlier, ensuring that the underlying trunk infrastructure and supportive mechanisms are in place and that the core enabling infrastructure is there. Do we have appropriate levels and supply of, for instance, underpinning energy and water. Obviously land site availability, one would assume, is not a critical problem. Then, as Steve said, the location of that supports effective freight and logistics and coming up with the right solution.

The role the government can potentially play there is based in early feasibility assessments, site characteristics determination, fundamental capability to underpin access to that enabling infrastructure, whether that be through structures like NAIF and other bits and pieces, for instance,

across northern Queensland. Additionally, the capacity to ensure that the proceeds or the returns that are being realised by some of these potential products need to be shared in a manner that is effectively commensurate or at least able to provide an enhanced level of economic incentive for particularly producers.

The reality is the current sugar price formula or system does not do that. It is effectively hardwired to sugar directly. Having said that, there also needs to be consideration of mechanisms by the producers. Just because you produced the product does not necessarily entitle you to an enhanced level of value return as well. There needs to be a co-investment set of relationships, we believe—one where growers have an opportunity and can create structures that allow them to potentially invest either en bloc or as individuals and the like. If we can align those risk-reward parameters I think it sets a base foundation from which I suspect there is more opportunity to grow collaboration and relationships across that.

Critically, there are other aspects such as fundamental digital communications which would be required to support new industries and their capacity and arrangements as well. As I said earlier, the other critical opportunity—it is also potentially a risk—is that if we try and do it with existing supply volumes. While there is opportunity, I am not sure whether we will create economies of scale in terms of being able to focus on being able to have a diversity of product. Just going from, for instance, all sugar to all biomanufacturing or bioenergy runs the same risk or the same challenges of being a more focused industry in terms of sugar as well.

Mr KATTER: If you had to box three policy positions or legislative tools for us to take away to kickstart the industry—you have made some really good points and I think I understand where you are going with all of that—what would you land on? We have to take something away from here and try and put something tangible into practice to roll this out. Where would you land?

Mr Cocco: It depends on what aspects of bioenergy you are looking at. From my perspective, in order to create the opportunity we need to create the underpinning market from a bioenergy—let's say a co-gen—perspective so those issues that Steve and Joe and others have raised are pertinent, being able to create the fundamental investment area or ecosystem that supports the interest of millers, growers or whoever. Basically creating and expending money into those assets relies on ensuring there are no regulations that are effectively stopping their interest and capability for that, so to me that would be one.

In terms of bio-based production opportunities, it is not necessarily just one single piece of legislation but undoubtedly the opportunity, as Steve said, to explore what is the right fit and what is the thing that is going to be basically highest return for lowest risk, which may or may not be directly bioenergy—it could be another biomanufacturing oriented product—understanding that feedback coming back from the market end and working your way right back to the farm gate end rather than just lobbing in to say, 'This is the one we're going to go with,' even though there is a whole range of other opportunities.

Mr KATTER: Would you still see ethanol as a big driver? That is probably the answer I was looking for.

Mr Cutting: Ethanol is the base chemical to do many things. SAF is 70 per cent yield from ethanol, so if you are going to manufacture SAF there is 30 per cent of decarbonisation you lose by converting ethanol to SAF as a minimum. In America, transport fuel emissions exceed power station emissions. If decarbonisation was on your agenda, then putting ethanol into transport fuels is an easy thing now. Robbie, ethanol is absolutely the base for so many different areas, but when people talk about SAF as the sexy, shiny thing, it is based on alcohol so you do not have the ethanol in that. I worked for five years at Sarina. You cannot make ethanol without doing something with, say, Bio Dunder. If you put four tonne of molasses in you will get one tonne of ethanol but you will get four tonnes of Bio Dunder. Wilmar has done a fantastic job—they are one of the largest liquid recycling industries in the country—to turn it into a value-added liquid fertiliser with sulphuric acid. It is NSPK, diammonium phosphate and urea, for nitrogen.

When people talk about how we are going to have this massive SAF industry and you are going to make ethanol from sugar cane in terms of juice, you then have to have a market. You can make quite good money replacing imported rock fertiliser. As Joe was saying about the circular economy, if you can then go to the Burdekin or somewhere where there is a massive fertiliser market, it is part of the revenue stream and you can also flow that on as the margin difference between providing cane and cheaper fertiliser. If you look at a simple block flow diagram of any of these bioprojects, every piece of input has to be used or tailored for as a waste, so that fundamental engineering you have to do in a feasibility study for any project has to happen. With ethanol, 101 per cent behind everything

there, but when we did the Biofutures Acceleration Program a few years ago it was trying to coax the new, shiny things—all the new technologies—and ethanol was considered to be tried and proven and did not need assistance.

The reality is we have not built an ethanol plant since Dalby, Sarina is 1927, and Bundaberg. This inability to project manage, come up with a business case that stacks up, build it, deliver it and run it for 20 years at a profit, that is the focus. Paul said we have been doing this for 40 years, and I have been doing this for 40 years, but it is really hard to get a business case that meets all the conditions. Sometimes it is your trade-off between the raw sugar price. If it is down at 20 cents a pound, 15 cents a pound or 30 cents a pound that makes all the difference for raw sugar projects. By the time you are stacking up the fuel equivalent it is off the world market fuel price, so if you want to get a good dollar for ethanol it is totally reliant on what is happening in the world of oil. Working back from the end of the market, that is the process for every district and, as Rob said, it is a bit different in each district.

Mr G KELLY: Looking at cogeneration specifically, what would it take to roll out sugarcane cogeneration technology across Queensland?

Mr Cocco: To give you an idea of some of the capacity, and stealing a bit of ASMC's information and data, collectively currently there is about 350 megawatts of cogeneration oriented power through Queensland predominantly. The estimate is it could be increased to over 1,000, so effectively a threefold increase in opportunity. The biggest limitations holding that back at the moment are the issues that Steve and Joe have highlighted with regard to AEMO's requirements around operations and that sort of thing. Off of the back of that, our existing mill locations—wherever that may be—ideally positioned to be close to supply where they can effectively process that from a co-gen perspective.

My reading from aspects of the Australian Sugar Milling Council based reports is that everything is well and truly potentially doable providing there is a market there and there is security in the market from their perspective. Because they are not effectively a retailer at the moment and all of those issues that have been mentioned before, it effectively makes it too risky to do anything more than what they are currently doing, understanding that the predominant need for co-gen is effectively running their own milling-based operations in the main. I do not know if that answers your question directly. To me, it would be picking up on particularly those requirements that are currently provided and required by the Australian Energy Market Operator in relation to supply.

Mr Cutting: There are two other things. Most Australian sugar mills have been doing cogeneration for over 100 years. It is how you get fibre from the gas and that is the energy. Most mills have, effectively, steam turbine generators that have pass outs. They pass out low-pressure steam at 100 to 150 kPa and they use that for boiling in the evaporators and the pans. The cogeneration units people talk about is where you have a condensing turbine. That heats all the feedwater in the boiler to create steam, the energy drives the turbine and then it condenses back to feedwater—it is in a big loop. A lot of the mills do not have a load in the non-crushing season to condense the water, so they have to buy a more expensive steam-generating turbine as a condensing unit, which is what Racecourse, Pioneer and Invicta have and Victoria Mill and Tableland.

The second thing is that when the mills were originally designed—some of them go back 50 years and a lot of upgrades were in the seventies and in 1995—every mill had an excess bagasse problem. You try to have a steam balance so you do not produce too much bagasse. Generally, mills run at, say, 50 per cent steam on cane. It means that if you want to crush 1,000 tonne an hour you will need 500 tonne an hour of steam at that efficiency. The best mills in the world are about 27 per cent steam on cane. If you wanted to create more fibre, if the bagasse was valuable for balance or for something else, the mills would have to take this step change of modernisation to replace all the 50-year-old boilers with state-of-the-art current technology, which we see in other industries like wind turbines, solar or other forms of energy, like hydrogen. If you are not spending a lot of your maintenance dollars fixing up old equipment, you could create the step change.

You will hear that electrification is the future for energy demand reduction. Most of the mills, like Pioneer and Racecourse, have started the process of electrification. If you replace small steam turbines that produce 1,000 to 2,000 horsepower with bigger electric motors and gear boxes so you only have one co-gen generation use, you drop all the energy demand by putting in high-efficiency electric motors. The sugar industry could double its generation capacity but it could also generate more bagasse to make either more power or other products that might be higher value right now. You could be making biomass pellets, like the Bundaberg region is doing. The Japanese are screaming for biomass pellets to blend at five or 10 per cent with coal.

Again, it is the circular economy and where do you get the most value? Until you can change the rules around power purchase agreements to be able to sell your own power to your own growers behind the meter as a retailer, you might be better off putting that bagasse into pellets, which may be an easy short-term transition, but it is not easy because they have to keep the moisture out and be at eight or 10 per cent moisture to get the money that Japan are offering. Again, if you starve the market and you work back to get the most out of the circular system, whether that be Bio Dunder liquid fertilisers to save imported rock fertilisers, you have to look at every input that goes into all those processes and account for them and then hopefully make money out of it. The opportunity then for the growers is to maybe co-invest in the fertiliser manufacturing, if the cane payment formula is going to take several years to come.

CHAIR: Thank you. Committee and everyone in the room, I am in your hands. There has been an airport closure which has meant our next witness is unable to be with us. Instead of shutting down the hearing, I will offer the committee the opportunity to ask questions of other individuals or anyone from the floor who has not made a statement the opportunity to jump up if they feel they want to. If you are not registered as a witness, make yourself known to Amanda. I am happy to hear other points of view on the run for the next 15 minutes or so. Paul, you wanted to say something?

Mr Schembri: Without repeating myself, other speakers today have outlined the opportunities. One of the terms of reference talked about understanding the international context of where we are at. If I could, I will give you some insight into the opportunity here. Putting India to one side, let's look at the three largest sugar cane industries in the world: Brazil, Australia and Thailand. For Brazil, 48 per cent of its total sugar cane industry revenue comes from sugar sales. Brazil has set the gold standard internationally. They bit the bullet in 1975 with an ethanol mandate and the rest is history.

If you look at Thailand's total revenue of income from the sugar cane industry, 64 per cent comes from sugar sales. They have geared up in the last 15 or 20 years in terms of value-adding and diversification. They are largely imitating the Brazilian model, and with great success. I have been to sugar mills in Thailand where they are producing six different products such as raw sugar, refined sugar, ethanol, bioplastics, biofeedstock et cetera. In Australia—and I stand to be corrected here—my understanding is 90 per cent of the total revenue in the sugar cane industry comes from sugar sales. The opportunity is there before us.

I just want to wind down by making a comment, and other speakers have talked about it as well. We would be fools not to capture this opportunity because, in large part—whether it is in Mackay, Townsville, Cairns, Bundaberg or wherever—the launch pad for the rocket is here. The infrastructure is here. The growers are here. The cane is here. The mills are here. The port and the terminals are here. The biosecurity arrangements are here. The research and development is here. The water schemes are here. The opportunities are basically unlimited. We are not building industries from the ground floor up. To a large extent, we are almost there.

I do want to address one point that Robbie Katter made. If I can be critical of Australians, we examine things to death and, ultimately, we do not have the courage to bite the bullet and take a step. If you go back to Brazil, in 1975 they bit the bullet overnight because of the oil shock and established a mandate and away they went.

If I can just wind down by saying that, ultimately, at some stage we have to stop talking about it and bite the bullet and have a crack at this because the opportunities are unlimited. If you look at the sugar industry, we are probably not that good at commercialisation at the higher end of the value chain. If you look at the sugar industry, we led the world in terms of mechanical cane harvesting, bulk sugar handling and the automation of sugar mills. I just cannot understand why we cannot take those next steps.

This is a huge positive in terms of having an inquiry where you can look at the roadblocks that are out there. People have talked about one of the roadblocks and that the farmers must be incentivised. If they are not incentivised, they have no incentive to increase their productivity and their production. One of the great aspects of this is you could actually grow the sugar industry. Our current footprint is 340,000 hectares—six per cent of the Queensland coastal plain. I am not saying that we grow cane everywhere, but the reality is that the opportunity is there.

CHAIR: Thank you, Paul, and thanks for your service over many years. Did anyone else want to speak?

Mr SMITH: Everyone wants to have a whinge at politicians or about politicians!

CHAIR: Does anyone from the floor have any questions? Did you want to bring anyone back?

Mr MARTIN: I had one question for the growers.

CHAIR: Joe, would you mind coming back to the table?

BORG, Mr Joseph, Chairman, Canegrowers—Mackay

Mr MARTIN: We did not have time before, but I have a quick question about planning. One of the interesting things that you were talking about was the shrinking amount of land that we have for growing sugar and the challenges that that brings. If the state were to say that we will have to lock in some land, which is done by council generally, my understanding is that might reduce your rates but it would also drastically reduce the price that you might get when you reached retirement age and wanted to sell or whatever. It would drastically reduce that price. My question is: would you support that kind of regulatory change? I would imagine some of your members might not be happy, especially if they are thinking about selling some time soon.

Mr Borg: That is a good question. Thanks, James. I probably need to explain the situation a little bit better. Of course, subdivision and urban encroachment is taking land off us. In the Mackay region, the biggest danger to cane land loss is not subdivisions. At the end of the day, if an 80-hectare cane farm gets subdivided, which is probably 400 or 500 homes, it is not that huge in the scheme of things. Our biggest threat is cashed up miners—I will use miners as an example, but I am certainly not targeting them—who are buying 100-acre cane farms to run 10 cows on because they like doing it. The value that they are paying for that land compared to the economic output that that land could yield as a cane farm does not add up. That is our biggest threat.

Subdivision is a minor issue; it is more the lifestyle buyers—the local term we use is 'blockies'—buying 100-acre farms to run five cows. They are not doing that for an income; it is a lifestyle thing. In this region, that is our biggest threat with regard to cane production.

CHAIR: Did anyone else have anything for Joe?

Mr G KELLY: Probably not.

CHAIR: I reckon we should get stuck into him! Here is your chance.

Mr G KELLY: He is not sweating yet!

CHAIR: Would anyone else from the floor like to say anything? I will open it up again. Yes, sir. Please come on down.

EVANS, Mr Austin, General Manager, Eton Irrigation

CHAIR: Welcome, Austin.

Mr Evans: I just want to back up what Joe said and throw some numbers at it. Eton Irrigation has a fairly tight footprint. PV Water is a lot bigger and a lot more spread out. Within the tight footprint that we have, nearly 100 of our 320 customers are lifestyle blocks. It is that fragmentation that occurs that is the big threat. We have good infrastructure. Like PV Water, as Joe said, we are not using it anywhere near the capacity that we can to deliver that water. The equations are there: deliver more water, use it on farm, grow more cane. There are production capabilities. We have been out there working on some plans to try to increase the water use, increase that production. In the last few years the mills have been a bit of a bottleneck, and they are working their butts off to try to change that. That is going to be the thing.

It is the fragmentation of the blockies. Like Joe said, there are 100-acre blocks that are just lifestyle blocks. Our infrastructure runs past the front door, the cane trains are there and the rail network is there—it is all running past the front door. We have the capacity to expand, and PV Water does as well. That increase in production would be fairly easy to get if we could handle the cane through the mills, and as several people have said there is a market for the product out the other end of the mills as well.

CHAIR: How are the water allocations this season? It has been a good season for the growers, has it not?

Mr Evans: Plenty of water.

Mr Borg: PV Water has had 100 per cent, but as I said we had six per cent usage last year.

Mr Evans: We have not gone above 30 or 40—I think it topped out in the low 50s in the last 20 years. The water is available. There is plenty. I come from southern New South Wales originally where water is gold and you pay a gold price for it. Here, people give it away because there is so much of it available, unless we hit a drought year. There are farmers around here who have a long enough memory to remember a low-allocation year, so they want it there as insurance. I look at it through a different lens because I come from an area where water was scarce, and there is water to burn here.

Also, we have the infrastructure and the capacity. Our system runs at probably five or 10 per cent of the physical capacity we could shift through the channels, pipelines and pump stations most of the time. We could ramp up. PV Water could do the same.

Mr Borg: Hundred per cent. And just to back up what Austin said, and it is probably not a good thing to say but it is the truth, in PV Water we actually have a foolscap page of people wanting to give away their allocation because it is almost considered a liability. That directly comes back to two things: electricity prices, and the situation where you have blockies buying irrigated farms to run five cows. What do they want irrigation for to run five cows on it?

Mr Evans: Several of you asked about legislative changes that could happen. It is probably a bridge too far and you perhaps do not want to go there, but New South Wales and other states have defragmentation laws where you cannot build a house on a property under a certain size in agricultural zones. I was amazed to find here in Queensland that if it is a separate title you can build a house on it. If there are four titles on a farm and someone buys that they can sell it off and build four houses. Then that disappears.

Mr KATTER: This is a bit of an open-ended question. When there have been pushes with regard to these things—and they are probably more aware of it down in that grain area around Dalby—you will have feedlotters saying they do not want it because it is then competition for the feedstock for them; they are buying the grain. There is always going to be pushback from other areas. The RACQ used to come out with fake campaigns about how it would damage your motor, but let us just stay on the feedstock one. Have you any ideas on how to address that or how you talk to your members where there are conflicts like that? I cannot think of any in cane. I thought I would grab you, because you are in cattle and you might understand that tension.

Mr Borg: I totally understand that, Mr Katter.

Mr KATTER: Molasses is probably another example.

Mr Borg: Yes, a perfect example. I guess the competition issue here is with the mills—with the milling companies. If diversification projects were to go ahead that basically pushed the mills to the side of course there would be a huge concern. My personal thoughts—and I think I am right in saying that that is the thoughts of canegrowers in Mackay—are with any diversification projects that may

come into this area Mackay Sugar and the other company Wilmar have to be part of it. I think it would be absolute suicide to try to work around the edge of the mills and try to isolate them because to me that would be absolutely crazy. Whether that be precision fragmentation, or whatever it is, and all that sort of thing, the milling companies can still be part of it and I believe they truly have to be, because as we all know, commodity markets are very corrupt and they can change in a flash. One minute sugar can be at five cents a pound and it can be at 25 cents a pound a week later. I have no doubt that all these other things will be in a similar situation. I think Paul Schembri talked about versatility and doing different things. I think that any diversification projects—co-gen is a bolt-on to the mills; it is just an extra—but anything working away, I think the mills have to be part of this otherwise it would be absolute suicide for our industry to go down that track.

Mr Evans: You would duplicate all the infrastructure and it is infrastructure that is underutilised now.

Mr Borg: Absolutely.

Mr DALTON: Gentlemen, both of you have mentioned water allocation. If you had the microgrids that you have been talking about, what would you anticipate the water allocation and the usage would go up to if you were the canefarmer with the unlimited amount of water that you are saying you have?

Mr Borg: At a reasonable price, yes, sure. I guess that is somewhat 'how long is a piece of string'. But one point I will make to you is that many years ago when electricity was cheap, when it was dry our pumps would go 24 hours a day, seven days a week. On an average size farm one man would be absolutely flat out just doing irrigation to keep the production going. Now we try to utilise cheaper tariffs such as tariff 22E which has cheaper periods throughout different times of the day. We are pumping in those periods to try to mitigate the excessive electricity charges. I would not like to put a figure on it, but I will say it is substantial because, as I said, when you go back to those years—and, Glenn, you are a perfect example of that—when it was dry your pumps never switched off.

COCCO, Mr Robert, Chief Executive Officer, Regional Development Australia—Greater Whitsundays Region

Mr Cocco: Probably just to support Joe a little bit in terms of the numbers, we have had a look, along with SRA, at 20-year averages and all that sort of thing. Across the Mackay and Whitsunday area you are probably looking at about 108,000 megalitres of allocated water that is not used annually. If you look at a conservative irrigation efficiency component to that of about 60 per cent, you are looking at about 560,000 tonnes per annum of lost production as a result of not using or not accessing that water for available irrigation.

Mr DALTON: Could you say that again?

Mr Cocco: About 560,000 tonnes. If you look at, once again not our data but SRA orientated data over many decades in terms of irrigation work and irrigation efficiency, for every one megalitre of water you are looking at, on average, anywhere between eight to 10 tonnes per megalitre of water additional benefit. It can be as high as 30 depending on the location and the state of the crop and all those sorts of things, but let us be really conservative and say eight to 10. That, from an economics perspective, and you can do the numbers yourself around current sugar price, but ballpark you are probably looking at a $40 million direct gross revenue return from that 560,000-odd tonnes. The multiplier effect in the regional economy is probably upwards of nearly $230 million of additional spend. Effectively for every dollar of gross revenue there is about $6 of economic spend within the regional economy. That is from, once again, not our work but independent economic analysis that has been done of that.

The only other comment I would make around water is outside of, obviously, the challenges around energy price and those things, right here, right now. If you are utilising water there is a positive return on investment from the utilisation of that water. So, yes, obviously if things are lower cost there is more profit, but there is profit to be made by using the water right now as well. That is current prices. There is a role and a job to be done around showcasing that value proposition back to producers so that they are using more of that allocation. Just on that, SRA and ourselves actually drafted a possible project proposal around that sort of initiative and we would be more than happy to share some of the aspects of that proposal.

CHAIR: Graham, would you like to make a comment?

TOWNSEND, Mr Graham, Managing Director, Minprovise

Mr Townsend: I will be very brief. It all comes back to one thing here that we have all been discussing today until the cows come home and it is all to do with money at the end of the day. These 100-acre blocks that these chaps are talking about, we all know about. The worst block of the whole lot is opposite Pleystowe mill where we have a place called Rosewood Plains. It covers 50 acres of the best cane land in the whole valley and it has four cows on it and a beautiful home owned by a miner. It is going on everywhere. We have to get to the root of the problem and the problem is that farmer sold it because he was not making enough money out of it. That is where we go downhill.

For the last 25 years we have been talking about this. There has been sugar inquiry after sugar inquiry, you name it—Sugar Plus; there was one last year, Sugar Q. The QCI did one 23 years ago. We have had inquiry after inquiry and nothing gets done. It is about this irrigation. I can take you down to Homebush Road and on the right-hand side of Bells Creek Road there is no sugarcane growing there now. You can actually turn on a valve and the water will run out. This chap from New South Wales said it is worth gold down there. We built these dams here over 50 years ago. We do not need one more kilometre of railway or tram line, we do not need one more gallon of water, we do not need one more tonne of fertiliser. As Paul said before, we have the industry here. All we need is somebody in your departments of the government to bite the bullet and let us change and there is only one way to do that and that is to value-add. We have to value-add. You will not grow sugarcane if you are not making any money out of it. Twenty years ago in 2000 Australia had 438,000 hectares of sugarcane growing. Today—Paul said the wrong figure, I think—it has actually gone down to 327,000. We have lost 111,000 hectares of caneland in Australia. You tell me if that is a going concern. We are going down the tube.

Gentlemen, it is up to you six here today. We have had all these inquiries. Everybody here today has heard them time after time. Nothing ever gets done. We must value-add to make a future for the young people. No way in the world does a young farmer want to buy a cane farm. The best way to get rid of your money if you win Gold Lotto is to buy a cane farm—you will get rid of it. It is shocking that we cannot afford to pump the water, we cannot afford to buy it, and yet we have the best irrigation system going. As I said, gentlemen, I would love to take the six of you and show you along Bells Creek Road where the cows rub up against all the valves. There is no sugarcane there, and it is getting less and less every day. That is all I would like to say. Thank you very much.

CHAIR: That concludes the hearing. Thank you to everyone who has participated today. I hope you continue to engage with our committee and let us know your thoughts. Thank you to our Hansard reporter. A transcript will be online in due course for anyone who was taking notes and did not keep up. Thank you, everyone, for coming today.

The committee adjourned at 10.36 am.