

Energy (Renewable Transformation and Jobs) Bill 2023

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Committee Secretary
Transport and Resources Committee
Parliament House
George Street
Brisbane Qld 4000

Sent via: trc@parliament.qld.gov.au

Dear Committee Secretary

Re: *Energy (Renewable Transformation and Jobs) Bill 2023*

The Australian Sugar Milling Council (ASMC) is pleased to provide this submission to the Committee's Inquiry into the *Energy (Renewable Transformation and Jobs) Bills 2023 (Bill)*.

The Bill seeks to enshrine the key commitments of the Queensland Energy & Jobs Plan (QEJP) including renewable energy targets, public ownership of generation assets, investment in transmission and the creation of Renewable Energy Zones (REZ's) - the latter being the ASMC's core interest and the focus of this submission.

The ASMC has consistently conveyed to Government the finely balanced financial position of the Queensland sugar industry and the need for policy settings that:

- Assist with maintaining and increasing Queensland cane supply to a consistent 34 million tonnes per annum (mtpa) (32 mtpa on average currently); and
- Incentivise value-add investments that utilise the various bi-products of the sugar manufacturing process.

To this end, increasing the sugar milling sector's cogeneration (renewable energy) capacity remains a strong opportunity and we support the policy direction of the QEJP and the Bill to drive investment in renewable energy.

However, and whilst the problems associated with ad hoc renewable energy development are well documented, and there is a need for improved coordination to promote efficiencies, ASMC remains concerned that State Planning Policy – designed to protect Important Agricultural Areas (IAA) from competing land uses – can at times be inadequate for this purpose. This inadequacy was demonstrated when approval was given to the Mirani and Clare solar farms to be developed on Good Quality Agricultural Land (GQAL) despite community, local government and industry objections and the threats posed by the developments and loss of cane supply to viability of neighbouring sugar mills.

Inadequate planning and protections for GQAL from significant expansion of solar farms along the Queensland coast line and on cane land, in combination with urban encroachment and substitution to other crops, could result in:

- Further mill closures from a lack of cane supply and the resultant loss of jobs;
- Lower economic activity in the regions as sugar production is far more input intensive than solar farms; and
- An inability to meet Government's own bio-fuel objectives that will require significant, consistent and reliable amounts of cane, bagasse and ethanol supply.

The Australian milling sector in 2022 had annual production of:

- 4.2 million tonnes of raw sugar at 22 mills from 32.4 million tonnes of cane received;
- 1 million MWh's of green co-generated electricity from 440MW's of installed co-generation capacity;
- 1 million tonnes of molasses; and
- 60 million litres of ethanol from the Sarina distillery for domestic E10 and other industrial usage consumption.

In 2023, sales of raw sugar, exported electricity, molasses and ethanol is expected to generate around AUD\$2.5 billion in revenue for the Australian milling sector with returns reinvested locally into the maintenance and upgrades of sugar mills.

In 2021, the Queensland sugar industry (cane growers and raw sugar millers) employed around 20,000 people and contributed around AUD\$4 billion in Queensland Gross State Product¹.

Data collected by the ASMC from Government's Queensland Globe website shows that there are currently 17 proposed solar farms (1.3GW's combined capacity) either on or adjacent to Queensland cane land with a land footprint of approximately 3,400 hectares. This loss of cane land would exacerbate the ongoing loss of cane land that is already occurring. For example, the area of cane harvested for milling in Queensland was 357,958 ha's in 2017 and only 317,805 hectares in 2022 (an 11% decrease).

Given the dependency of many Queensland regions on a prosperous sugar industry; the requirement to process harvested sugarcane ideally within 10 hours of harvest (thereby from land located close to sugar mills); and the vastness of the state and the high number of geographical options for REZ's (particularly compared to sugar milling), we encourage Government to continue to review and refine State planning frameworks to avoid land-use conflict between solar farms and GQAL/IAA.

Consistent with the recent National Farmers Federation sentiment survey², this view is also shared by canegrowers with mining and energy developments on cane land cited as the sector's most pressing issue.

¹ <https://asmc.com.au/sugar-industrys-economic-contribution-2020-21/>

² NFF's National Farmer Priorities Survey, 2023

In summary, we call for three substantive changes to the proposed REZ framework and accompanying planning frameworks, including:

(1) Integrated planning and REZ policies and approaches are required

At its core the REZ is a land use planning tool albeit with a focus on electricity infrastructure. It would be a retrograde step for this critical infrastructure to be planned outside of the regular land use planning process. The declaration of a REZ should be integrated with the State Planning Policy (SPP) and State Codes, acknowledging that 'upzoning' the REZ will promote the delivery of electricity generation projects in the designated land area.

There is an important weighing up activity that needs to be considered in the prioritisation of a REZ against other demands and constraints on land use – such as GQAL/IAA, areas of ecological significance, and areas serviced by infrastructure for other forms of development such as urban and industrial development.

Consideration should therefore be given to whether the declaration of a REZ bears upon the classification of the level of assessment within the *Planning Regulation 2017* (Qld) schedules. To ensure that GQAL and IAA are protected, the level of assessment for development for renewable energy could be utilised to encourage renewable energy on certain land and discourage it on other land. For example, schedule 10 of the *Planning Regulation 2017* (Qld) could be amended to provide that development for renewable energy on land identified within IAAs or on GQAL in a REZ is impact assessable or prohibited development, but is code or accepted development in other circumstances (e.g. underutilised or degraded land).

Furthermore, in reviewing the Bill, and the mechanisms proposed to implement REZ's, we believe that there is a potential for land-use conflict to be exacerbated. This is because the designation of a REZ could potentially make it easier for proposed renewable projects in that REZ (those without a Development Authority and those not yet subject to planning assessment) to achieve planning approval because being in a REZ will be used as a 'relevant matter' in the assessment of development applications.

Section 45(5)(b) of the *Planning Act 2016* (Qld) could therefore also be amended to provide that development being within a REZ is not a 'relevant matter' in assessing an impact assessable development application.

In any event, coordination between the planning process and the REZ process is essential, both for the protection of GQAL and also to facilitate the ultimate goal of the Bill to encourage renewable energy production.

(2) The REZ Roadmap requirements should be enshrined into law as critical considerations and requirements in REZ Assessment and REZ Management Plans

The draft 2023 REZ Roadmap states:

*To understand the opportunities and impacts of future REZ development, the Queensland Government has immediately allocated at least \$6 million to undertake a strategic assessment of the three regions. **These assessments will look at the potential implications for infrastructure, transport, housing and accommodation, workforce, supply chains, waste management, other land uses, and social infrastructure, as well as local industry and First Nations peoples' considerations** (page 8 draft REZ Roadmap).*

Whilst, positively, the bill compels the REZ delivery body to assess the impact of the REZ on 'infrastructure and land use' (Section 49(b)(i)) and Aboriginal and Torres Straight Islander peoples and other communities (Section 49(b)(ii)) at the REZ Assessment stage, the Bill does NOT explicitly compel the delivery body at this important stage to consider the other essential considerations outlined in the Roadmap policy being:

- Infrastructure
- Transport
- Housing and accommodation
- Workforce
- Supply chains
- Waste management
- Social infrastructure
- Local industry and additionally,
- Whether is likely to be NET economic benefits to that region.

Furthermore, ASMC also seeks insertion of all of these considerations in the legislative obligations when preparing REZ Management Plans. This acknowledges that the 'shape and form' of REZ's could change substantially after the REZ Assessment stage is undertaken and approved.

In summary, ASMC seeks insertion into the Bill all of the following considerations when the REZ Management and REZ Assessment Plans are developed:

- Infrastructure
- Land use
- Aboriginal and Torres Straight Islander peoples and other communities
- Transport
- Housing and accommodation
- Workforce
- Supply chains
- Waste management
- Social infrastructure
- Local industry and additionally,
- Whether is likely to be NET economic benefits to that region.

(3) *The Jobs Advocate should be an intermediary, and not a promotional role*

Our other substantial comment is in relation to the proposed Queensland Renewable Energy Jobs Advocate (Advocate) and its proposed function at Section 155(i)(i) to:

Promote to the community in which a particular electricity infrastructure project, that forms part of the optimal infrastructure pathway, is being carried out— (i)the benefits of the project for the community;

ASMC believes that the promotional functions of the Advocate should be further considered, and if supported, approached with caution. That is, it could be highly problematic for a state funded representative to be promoting the benefits of a project before listening to the community or industry, or addressing concerns about the potential detriments of electricity projects. A role of an intermediary between community and industry to work through

challenges or difficulties is a sensible idea, but it should be a genuine intermediary not a promotional role.

Further background and context on the Queensland sugar industry is contained overleaf.

[REDACTED]

Please don't hesitate to contact David Rynne [REDACTED] or Jim Crane [REDACTED] for further clarification on the issues raised in this submission.

Yours sincerely

[REDACTED]

David Rynne
Director Policy, Economics & Trade

Attachment: Background to the Queensland sugar industry

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Background ASMC

ASMC is the peak representative body for the sugar manufacturing sector, representing four companies that collectively produce approximately 81% of Australia's raw sugar at 13 sugar mills across Queensland. The Australian sugar industry – including millers and growers – is responsible for \$4 billion in annual economic activity and underpins 20,000 jobs in regional Queensland.

Sugar Industry milling operations

Sugar production is a unique form of agricultural production because of its specific locational requirements. Sugar cane is a ratooning crop, which is generally planted in one year and then it ratoons or 'regrows' for a further four or five seasons after when it is replanted. The cane is harvested and crushed generally over the period from late May to November each year.

Sugar cane must be milled as soon as possible after it is harvested to minimise deterioration and loss of sugar content. A 'cut to crushing' time of 16 hours is an accepted maximum time. Cane which is over 24 hours old has significant deterioration, meaning less and poorer quality sugar can ultimately be recovered from the cane to the detriment of farmers and millers.

A consequence of this rapid deterioration is that sugar mills need to be as close to cane fields as possible to limit the time taken to transport harvested cane. To accommodate the need to get cane rapidly from field to mill, the sugar industry is comprised of multiple mills located strategically close to the sugarcane growing areas rather than large, consolidated mills servicing entire regions. The inability to consolidate processing capacity distinguishes sugar production from other agricultural products (and other manufacturing industries generally).

To allow for the most rapid transportation of cane to a mill, their cane supply areas have sophisticated infrastructure including cane railways. This infrastructure has been developed over many years at a high capital cost.

Sugar mills as renewable energy producers

One of the by-products of sugar milling is 'bagasse' or sugarcane pulp – a dry fibrous material left over after the juice of sugar cane is extracted in the milling process. Australian sugar mill co-generation plants utilise bagasse as fuel to generate steam that is used to power internal processes and for electricity generation. From 438 megawatts (MW) of installed capacity, our sector currently generates almost 1 million MW hours (MWh) of electricity per annum, with approximately half being used internally and half exported to the grid.

This electricity is renewable and synchronous and can assist with the reliability and security problems of the grid caused by wind and solar intermittency. Furthermore, given its baseload

characteristics it is a viable alternative to coal-fired generation when these assets are retired. Indeed, the power generated from the industry helped fill the electricity deficit immediately following and ongoing from the failure of the Callide C power station in May 2021 and the more recent capacity shortages in Queensland from heatwave conditions (Feb 2022).

ASMC, with member companies, are currently pursuing pre-feasibility work to understand the commercial potential of increasing this 438 MW of co-generation capacity to in excess of 1GW.

Efficiencies in location exist because sugar mills, as historically large importers and exporters of electricity, are already connected to the electricity grid and are typically close to transmission infrastructure and substations. Furthermore, the generation is disbursed along the Queensland coast because, as explained above, multiple mills close to their cane supply areas are a characteristic of the sugar industry. Positively, disbursed generation can assist in minimising the loss factors of the power generated and can serve to mitigate the risks associated with concentrated generation such as severe weather impacting transmission assets close to concentrated generation.

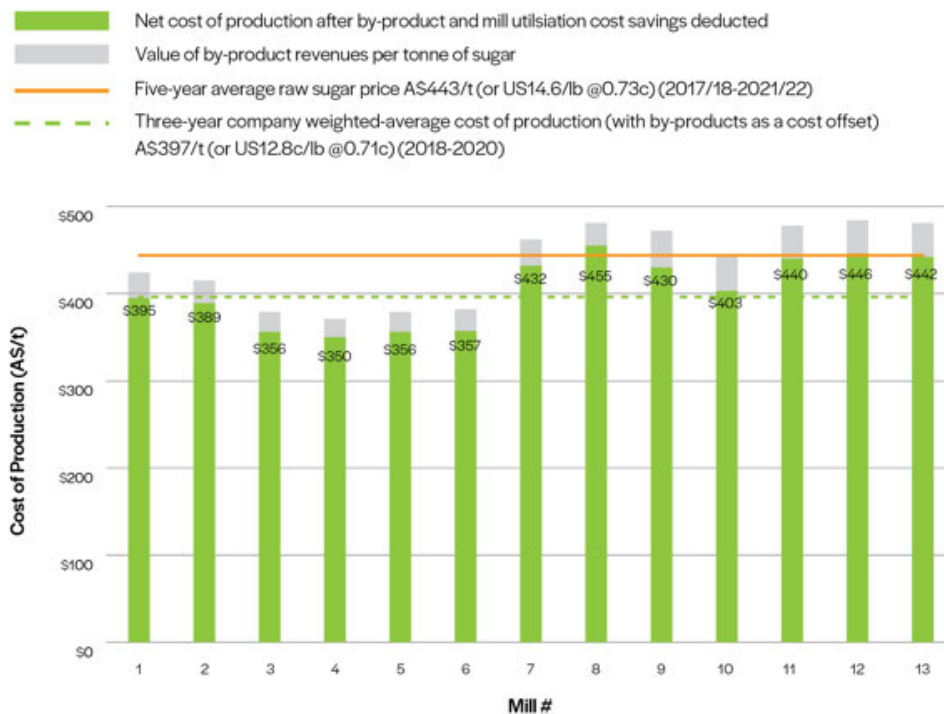
Sugar industry economics

Queensland sugar mills export around 80% of the raw sugar that is produced and are price takers in a fiercely competitive global market. The industry competes against nations who often provide assistance to their mills and growers resulting in distorted global prices. Apart from matching R&D funding, the industry receives no ongoing financial support from any Australian government.

Taken from recent work (2021) completed by BDO for the ASMC³, **Chart 1** compares the actual production costs of QLD mills to the current five-year average global sugar price. The chart shows that half of the industry (mills 7-13) have costs close to this five-year average raw sugar price of A\$443/t and are highly susceptible to prolonged downturns in sugar prices. In particular, mills 7-13 (approximately 33% of the sugar production capacity of the industry), are smaller, have un-utilised mill capacity and are susceptible to falling cane volumes and cost increases.

³ BDO report for the ASMC, Queensland raw sugar cost of production report, July 2022

Chart 1: Raw sugar production costs by Queensland mill



*Reserve Bank of Australia website and the average AUD: USD rate for the three years 2018-2020
Source: BDO data

Consequence of high-fixed cost milling and falling cane supply

The most significant consequence of the disbursed nature of sugar milling is that fixed costs associated with milling are comparatively higher than the fixed costs of other agricultural production processes. Each mill necessarily has a number of fixed costs, including levies, maintenance, administration and overheads, and depreciation. This requirement to have multiple mills unavoidably duplicates the fixed costs of crushing cane.

As a consequence of having high fixed costs and low variable costs, the more throughput of cane a mill can achieve, the more financially viable a mill will be.

The need for as short a cut-to-crush time as possible, and the high fixed costs of operating mills, creates an intertwined economic relationship between growers and millers. Growers need a mill as close as possible to their farms so that the maximum amount of sugar from their sugar cane can be recovered. Millers need sufficient cane farmers around a mill to produce sufficient cane to cover the costs of running the mill.

If there are insufficient cane growers in the vicinity of a mill, a mill becomes economically unviable and may have to close. If a mill closes, remaining growers in the vicinity of the mill are left stranded and unable to have their sugar cane processed, so they typically become unviable too.

As cane volumes for a particular mill decrease, it will eventually reach a 'tipping point' where the mill becomes economically unviable.

BDO for the ASMC⁴ found that almost 70 percent of all (non-cane) mill costs are fixed meaning small reductions in cane volume and increasing under-utilisation of the mill can have significant impacts on earnings (EBIT). For example, a 5% loss in cane area (typically around 775 hectares for an average sized QLD mill, or the equivalent of approximately two solar farms) could reduce the mill's earnings by around 20%⁵.

The most recent mills to close in Queensland were the Bingera Mill at Bundaberg and the Maryborough Mill, both of which were closed as a result of their cane supply falling to below viable levels to support the continued operation of those mills. In both these instances, some but not all, of the remaining cane has been diverted to neighbouring sugar mills, although in the case of the Maryborough closure, the cane is needing to be transported between 60 to 100 kilometres north to the Isis Mill near Childers - a distance that is at the limit of transport viability.

Effect of a mill closure

A mill closure can be devastating for a local community through direct and indirect impacts. Directly, a mill closure results in lost jobs at the mill and those supporting a mill (e.g. contractors and tradesmen) and as explained above, can result in farmers losing their livelihood. Indirectly, it impacts a community as a whole through:

- (a) Population loss, as those connected to the sugar industry may have to leave an area to find other opportunities;
- (b) Second round economic losses (e.g. lost trade by local businesses reliant on spending from farmers or those employed by the mill); and
- (c) Loss of identity for communities tied to the sugar industry.

Table 1 provides a summary of the economic contribution of the Queensland sugar industry.

⁴ BDO report for the ASMC, Queensland raw sugar cost of production report, July 2022

⁵ This assumes an average sized Queensland sugar mill purchasing 1,550,000 tonnes of cane per annum from 1,550 hectares of land, with 70% (non-cane fixed) operating costs, and total operating costs of \$451/t. It is also assumes a solar development of 128 MW capacity on 300 ha of land.

Table 1: Total employment of the QLD sugar industry by mill and LGA

Local Government Area	Contributing mills	Total employment
Mareeba	Tableland	153
Cairns	Mulgrave	1,083
Cassowary Coast	Tully, South Johnstone	1,651
Hinchinbrook	Victoria, Macknade	1,299
Burdekin	Pioneer, Inkerman, Kalamia, Invicta	2,342
Mackay	Farleigh, Marian, Plane Creek, Racecourse	4,327
Bundaberg	Isis Central, Millaquin,	2,660
Fraser Coast		290
Other (Brisbane, Townsville, Tableland, Whitsunday, Isaac, Douglas)		3,618
Total		19,673

Source: Lawrence Consulting analysis for the ASMC, 2021/22.

Relationship between renewable energy and the sugar industry

ASMC's submission is informed by the three relationships the sugar industry has with renewable energy:

- (a) Sugar millers as *producers* of renewable energy;
- (b) Sugar millers as *consumers* of renewable energy; and
- (c) Sugar millers as *competitors* of renewable energy for land.

The primary purpose of this submission is to address the potential impacts of the Bill on the sugar industry from the land competition perspective. However, it is important to acknowledge that:

- (a) ASMC welcomes the transition to renewable energy and believes it is vitally important from an environmental, social and economic perspective;
- (b) ASMC anticipates the sugar industry playing a continuing role in the production of renewable energy, but notes that the sugar industry is not, nor will ever be, close to being able to completely fulfil the need for renewable energy, and so in principle welcomes wind and solar energy production, subject to the comments in these submissions;
- (c) ASMC recognises that in the long run, plentiful, well managed renewable energy production will drive down the cost of electricity for the benefit of all; and
- (d) Ultimately, the goals of the Bill and the policy objective behind it are laudable and supported by ASMC.

While the transition to renewable energy is no doubt positive and is supported by ASMC, it does not mean that renewable energy is without potential negative impacts which need to be considered in policy formation.

Impact of solar farms and now REZ's

Whilst the problems associated with ad hoc renewable energy development are well documented, and there is a need for improved planning to promote efficiencies, ASMC remains concerned that State Planning Policy – designed to protect Important Agricultural Areas (IAA) from competing land uses – can at times be inadequate.

This experience has been borne out repeatedly in recent years, including for example:

- (a) The Mirani Solar Farm⁶ covering an area of approximately 165 hectares, as considered and approved by the Planning and Environment Court in *Mirani Solar Farm Pty Ltd v Mackay Regional Council & Anor* [2018] QPEC 38, over the opposition of Mackay Sugar and the Council. This project was approved to proceed despite alternative and suitable land being available 5-10 kilometres away; and
- (b) The Clare Solar Farm⁷ covering an area of 300 hectares. In this example the Queensland Planning Minister overturned the Local Council's rejection of the Clare solar farm proposal and supported the development application on the grounds of land compatibility, renewable energy and job creation.

A REZ, if managed appropriately, will establish an attractive location for renewable energy producers to set up and operate. Indeed, the explanatory document accompanying the Bill details that a REZ will be '*an area with excellent characteristics for renewable energy that is developed in a coordinated way to lower costs.*'⁸

ASMC's concern is that REZs will be declared in IAAs, areas with GQAL and a high percentage of land under cane, leading to renewable energy producers, particularly solar farms, competing with sugar mills' traditional cane supply areas for land.

ASMC's experience is that solar farms tend to value land with similar characteristics to land best suited to produce sugarcane. From the perspective of a solar farm operator, land under cane is an attractive site for a solar farm because:

- (a) It is typically in a latitude optimal for solar production;
- (b) It is flat and cleared of vegetation;
- (c) Cane farms often comprise large parcels of land; and
- (d) It typically has some existing infrastructure (e.g. internal roads and connection to external roads, power lines and substations).

Conversely, wind farms tend not to directly compete with cane land because wind farms seek elevated sites and do not need large footprints.

⁶ <https://www.escopacific.com.au/projects/mirani-solar-farm>

⁷ <https://frv.com/en/projects/clare/>

⁸ Energy (Renewable Transformation and Jobs) Bill 2023 | Exposure Draft Consultation p 20.

While competition for land use is not particularly unusual (indeed, seeking a higher value land use suggests a more efficient allocation of the land), the sugar industry is uniquely vulnerable to loss of land because, as detailed above:

- (a) If a mill does not receive enough cane, it becomes unviable and shuts down, impacting any other remaining growers that rely on that mill;
- (b) Because of the sugar mills' need to have sufficient throughput of cane, mills and their cane supply are located around areas of GQAL/IAA;
- (c) Sugar cane growing and milling cannot relocate because of this need to cluster and avoid fragmentation; and
- (d) Unlike other industries, the need for sophisticated infrastructure (including cane railways) also makes relocating prohibitively expensive or logistically impossible.

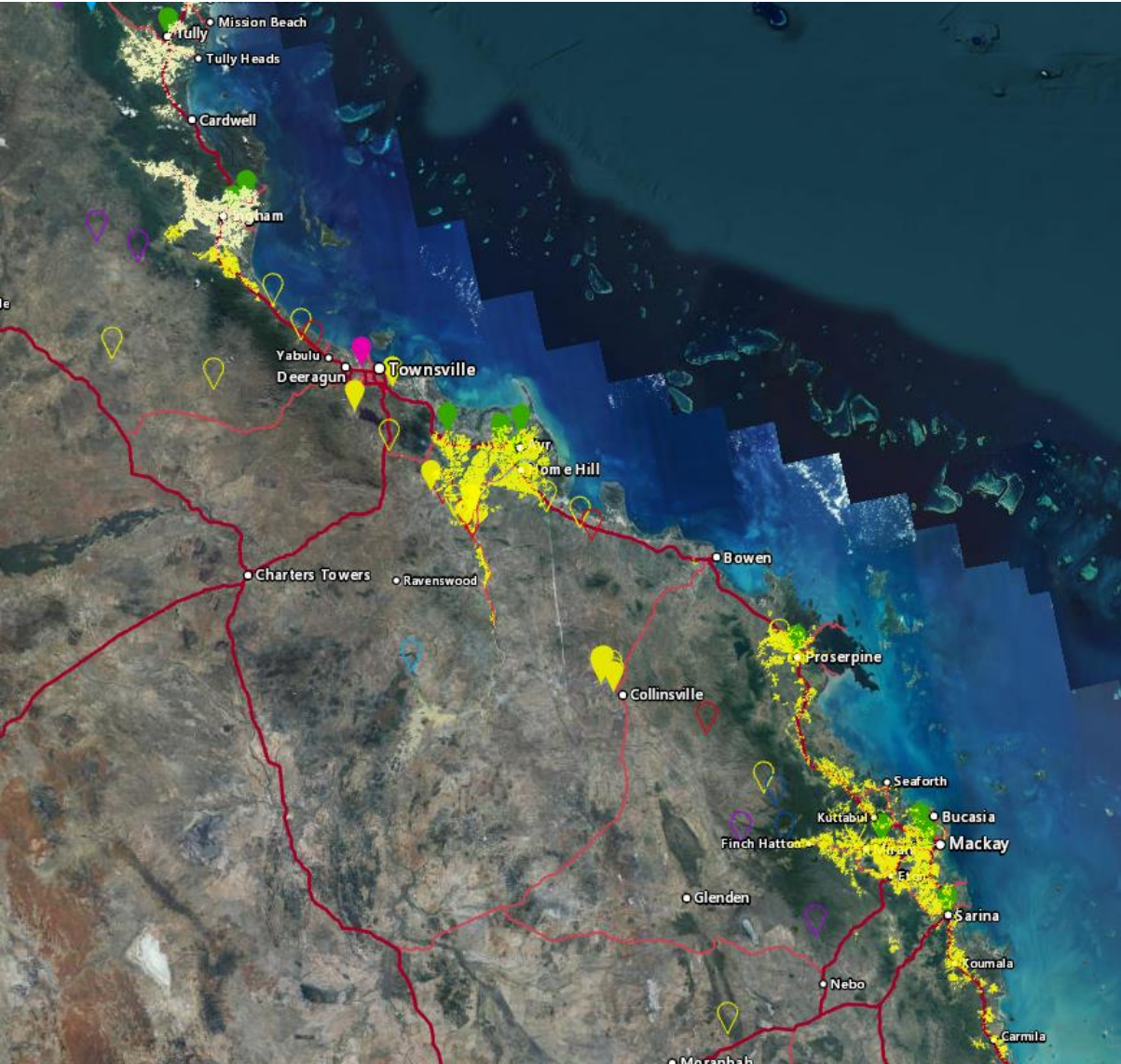
The areas already identified as potential areas for solar farms and REZs exacerbates ASMC's concerns as these projects are either on or adjacent to IAA's. Utilising data on the Queensland Government's Queensland Globe website, **Table 2** summarises the REZ's and solar projects that are proposed on or adjacent to IAA. In summary, there are currently 17 proposed solar farms and one REZ (Northern) proposed.

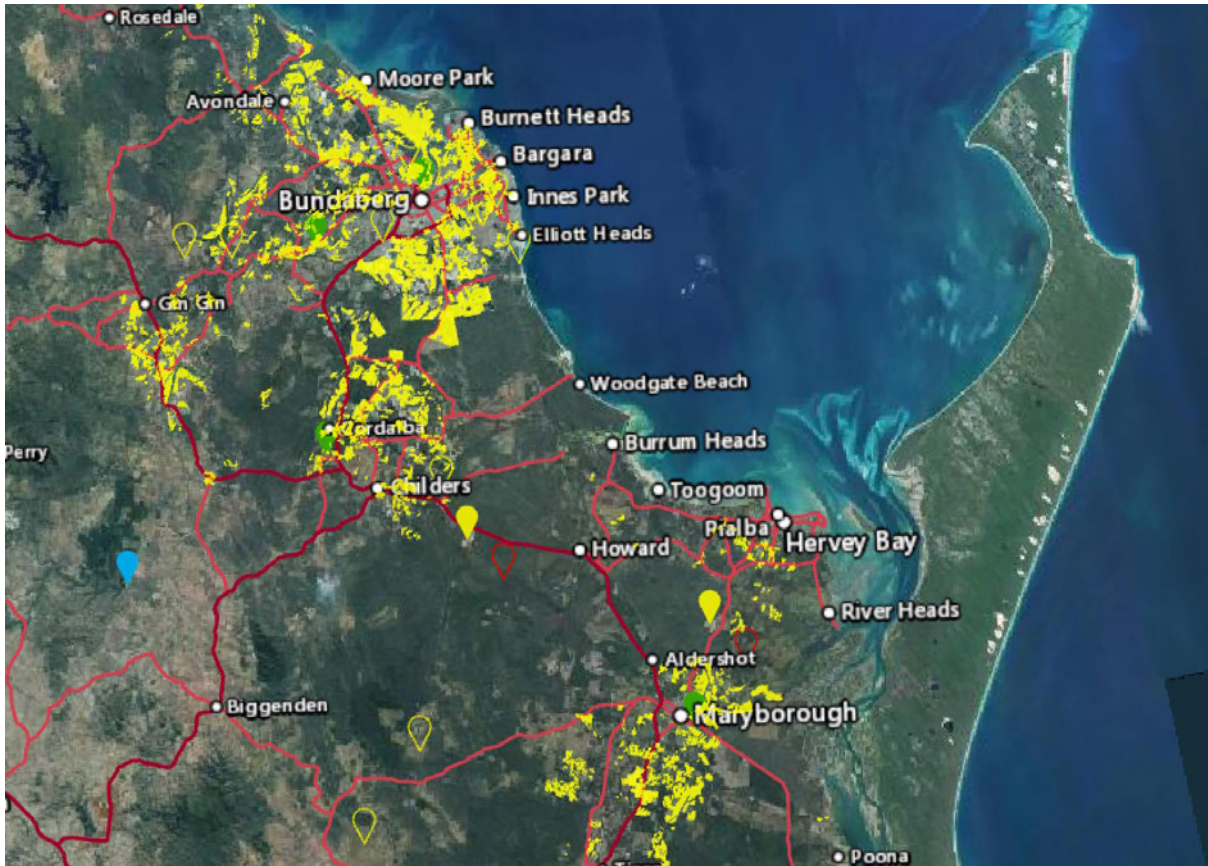
Table 2: Proposed REZ and solar farm on cane IAA by mill area

Mill area	Any proposed or under construction renewable projects or any REZ on or close to cane land?	Description
Mossman	No	
Tableland	Yes – 2 solar	75 MW Chewko solar farm (proposed) and 60MW Mareeba solar farm (proposed)
Mulgrave	No	
South Johnstone	Yes	North QLD REZ is adjacent to cane land
Tully	No	
Macknade and Victoria mills	Yes – 2 solar	110 MW Rollingstone solar farm and 102 MW Bluewater solar farm (both proposed)
Pioneer, Inkerman, Kalamia and Invicta mills	Yes – 4 solar	400 MW Haughton solar farm, 55MW Koberinga solar farm, 108MW Burdekin solar farm and 60MW and Gumlu solar farm (all proposed)
Proserpine	Yes – 1 solar	50MW Kelsey solar farm (proposed)
3x Mackay mills	Yes – 2 solar	60 MW Mirani solar farm and 20MW Paget solar farm (both proposed)
Plane Creek	No	
Bundaberg	Yes – 6 solar	109 MW Bulyard solar farm, 42 MW Childers solar farm, 58MW Bundaberg solar farm, 40MW Three Chain solar farm (Stage 1), 25MW Inness Park solar farm and 36MW Three Chain solar farm (Stage 2) (all proposed)
Isis	No	
TOTAL	17 solar farms	1.3 GW's (~3,400 ha's)









Source: Queensland Government Queensland Globe website

These proposed and under construction projects are illustrated in the two maps below. These maps show the cane areas of the state with the renewable projects overlaid.


















Renewable energy sites - existing

-  Battery storage
-  Bioenergy
-  Hydro
-  Pumped hydro
-  Solar
-  Solar thermal
-  Wind
-  Other

Renewable energy sites - under construction

-  Battery storage
-  Bioenergy
-  Hydro
-  Pumped hydro
-  Solar
-  Solar thermal
-  Wind
-  Other

Renewable energy sites - proposed

-  Battery storage
-  Bioenergy
-  Hydro
-  Pumped hydro
-  Solar
-  Solar thermal
-  Wind

End.