



Australian Sugar Milling Council submission to the Climate Change Authority

National Greenhouse and Energy Reporting Legislation

September 2018

Contact:

David Rynne

Director, Policy, Economics & Trade

ASMC

Email: david.rynne@asmc.com.au

Phone: 0431 729 509

Executive summary

The ASMC is the peak body for the sugar milling sector. We represent six sugar milling companies who collectively produce approximately 95% of Australia's raw sugar at their 20 sugar mills in Queensland. Over 85% of Australia's raw sugar production is exported.

Whilst the sector has complex energy processes, the sector is not a significant contributor to Australia's energy consumption and production or carbon emissions profiles. The sector's consumption of bagasse as the main fuel for bio-mass cogeneration constitutes around 1.68% of Australia's energy consumption¹ and the sector's emissions account for approximately 0.05% of Australia's carbon emissions². Whilst supportive of the legislative objectives of the National Greenhouse and Energy Reporting (NGER) legislation, the ASMC believes that the energy related legislation and reporting requirements place a significant compliance burden on the sector for no demonstrable benefit.

The Australian Sugar Milling Council (ASMC) seeks a number of changes to the NGER legislation to lower compliance costs and better align reporting requirements with operational practices.

The ASMC supports:

- alternative thresholds for energy production, energy consumption and emission reporting whereby the initial focus is on the highest producing/consuming and carbon emitting industry sectors (say top 90% coverage) and on capturing accurate data from the highest emitting individual facilities within these priority sectors (say 90% coverage).
- a review with industry collaboration to ensure that the NGER legislation and processes clearly cater for biomass cogeneration systems including sugar mills. Agreement to continue with the use of the LGC calculator fraction is also required.
- an option of either calendar year or financial year NGER reporting to allow the sector to align with aligned LGC calculator and NGER reporting periods. Annual reporting should also be maintained.
- a change in the legislation so that draft audit reports of compliance with NGER processes are delivered within one month, and the final report within three months.
- a review of the validation of wood waste methodology.

Background on the sugar industry and bio-mass co-generation is also detailed below.

¹ Page 15, <https://www.energy.gov.au/sites/g/files/net3411/f/energy-update-report-2017.pdf>.

² 260,000 tonnes divided by 555.3 MT (12 months ending Dec 2017 – see <http://www.environment.gov.au/system/files/resources/7b9824b8-49cc-4c96-b5d6-f03911e9a01d/files/nggi-quarterly-update-dec-2017-revised.pdf>)

1 Background to the sugar industry's energy consumption and production and greenhouse gas emissions

Relative to Australian totals, Australia's 24 sugar mills have complex but low energy production and consumption and low greenhouse gas emissions. The sector's consumption of bagasse constitutes around 1.68% of Australia's energy consumption³ and the sector's emissions account for around 0.05% of Australia's carbon emissions⁴.

Steam is produced from almost 500 MW of collective co-generation capacity. This steam is predominantly used for internal production processes (heating etc) and to make electricity that is also consumed on-site. Excess electricity is exported to the grid. The production of electricity from the steam is a secondary use compared to the use of steam for internal production processes.

The predominant fuel is the fibrous bagasse from the sugarcane crushing process. Coal, dry wood, agricultural residue, green waste, diesel, gas and oil can also be utilised from time to time based on (cane) availability and relative costs. These fuels' properties can at times be ill-defined and variable. The current NGER method 1 for a standard accepted default fuel value is sensible for such low value fuels.

The vast majority of the energy produced by a sugar mill is consumed internally. Energy consumption increases when gasoline and diesel oil are consumed in the transportation of cane to and raw sugar from the mills. Generally speaking the sector's energy consumption equals its energy production.

Most mills report low greenhouse gas emissions due to the reliance on bagasse as the predominant fuel source. The only mill who has a relatively large amount of emissions (eg greater than 100,000 tonnes) is required to burn coal in its boilers to support, through integrated cogeneration processes, a sugar mill, (Australia's largest) sugar refinery and a small power plant. Even in this situation the company stockpiles large amounts of bagasse for boiler fuel to power the sugar refinery when the mill crushing season is finished. The use of high emissions fuels is very infrequent and is often because alternative renewable fuels (other than bagasse) are not available in commercial quantities

2 Response to consultation paper questions

Question 1 – should reporting thresholds be changed?

ASMC response: Yes – reporting requirements should focus on the main highest emitting, consuming and producing sectors and associated individual facilities

The current facility reporting threshold under NGER is production or consumption of 100 TJ or more of energy or 25,000 tonnes or more of greenhouse gas (GHG) emissions (scope 1 and 2).

In 2017, almost all Australian mills exceeded the energy production (and consumption) facility threshold of 100 TJ and were obliged to report emission and energy data. Most mills do not get near

³ Page 15, <https://www.energy.gov.au/sites/g/files/net3411/f/energy-update-report-2017.pdf>.

⁴ 260,000 tonnes divided by 555.3 MT (12 months ending Dec 2017 – see <http://www.environment.gov.au/system/files/resources/7b9824b8-49cc-4c96-b5d6-f03911e9a01d/files/nggi-quarterly-update-dec-2017-revised.pdf>)

the 25,000 tonnes emissions threshold (except for when coal is burnt which is not common or by choice).

Whilst supportive of the objectives of the NGER legislation, the sugar milling sector seeks a more efficient (targeted) reporting regime with revised thresholds to ensure the collective benefits outweigh the significant costs (i.e industry compliance and government processing etc). The sugar milling sector's concerns with the NGER legislation include:

- The compliance costs are high relative to benefits and utility of information (the Australian raw sugar industry exports 85% of its sugar production and additional costs not borne by competitors imposes a commercial disadvantage).
- It is not clear how the energy data is being used for improved public policy or program delivery - especially to the milling sector (emissions data less so – for example the Safeguard Mechanism and proposed National Energy Guarantee [NEG] does and would have utilised emissions intensity data).
- There are sufficient commercial (cost) incentives to voluntarily benchmark emissions and energy data consumption.
- The NGER reports have limited value for year on year reporting due to impacts of cane crop size, the complexity and integration of mill energy systems and weather conditions.
- There are likely diminishing returns to government in accepting, processing, reviewing and auditing the milling sector's energy information as bagasse constitutes only 1.68% of all Australian energy consumption and emissions 0.05%⁵.

There should be a closer alignment between those industry sectors that have the largest energy and emissions outputs and those sectors and associated facilities which are obliged to provide emissions and energy data.

The ASMC supports alternative thresholds for energy production, energy consumption and emission reporting whereby the initial focus is on the highest producing, consuming and emitting industry sectors (say top 90% coverage – covering electricity supply, transport, manufacturing, mining and commercial per **Table 1**) and on capturing accurate data from the highest emitting individual facilities within these priority sectors (say 90% coverage). At the moment the reporting obligation is on the high emission and/or energy consuming and producing facilities but not necessarily those in the most important sectors or those highest energy consumers on non-renewable fuel sources. This approach will be more:

- Effective as the coverage will increase to 80% (0.9 x 0.9) (current coverage is 61%) and will provide a more representative sample
- Efficient as it will capture almost all data in those sectors likely to be subject to government interventions (thereby generating improved policy outcomes) and likely to capture the highest energy consumers of non-renewable fuel sources
- Equitable as it will lower the transaction costs on those sectors (i.e agriculture) and facilities that have a lower capacity to absorb compliance costs.

⁵ Page 15, <https://www.energy.gov.au/sites/g/files/net3411/f/energy-update-report-2017.pdf>.

Table 1: Australian energy consumption by industry

	2015–16		Average annual growth	
	PJ	share (per cent)	2015–16 (per cent)	10 years (per cent)
Electricity supply	1,755.7	28.5	3.4	-0.5
Transport	1,642.8	27.1	1.7	1.6
Manufacturing	1,114.4	18.4	-1.8	-1.3
Mining	610.0	10.1	14.2	7.2
Residential	457.4	7.5	0.3	0.8
Commercial	321.5	5.6	1.0	2.0
Agriculture	110.3	1.8	5.6	1.8
Construction	23.4	0.4	-8.6	-1.3
Other	30.5	0.7	-18.4	-6.3
Total	6,065.9	100.0	2.3	0.6

Source: Department of the Environment and Energy (2017) *Australian Energy Statistics*, Table E

Figure 1xxx

Source: Dept of the Environment and Energy, Australian Energy Update, 2017

Question 4: Are methods for reporting fit for purpose?

ASMC response: No.

ASMC observed that under the proposed NEG, NGER data would have been the primary source of data for retailers to understand the emissions intensity of generator’s and to meet its substantial compliance obligations. Whilst the future of the NEG and carbon policies that place a significant onus on the accurate reporting of emission intensities is unclear, ASMC supports a number of changes to NGER reporting to ensure emissions and emissions intensity reporting is more accurate.

In the case of sugar mill cogeneration (and most likely any cogenerator), carbon emissions from the combustion of fuels need to be allocated between the end users of this combustion energy which are generated electrical energy, and steam or thermal energy used elsewhere on the site. Annual

NGER reporting does not specifically report these relative allocation figures, and a summary report would need to be included to provide the correct emission intensity data for electricity generation.

In the case of sugar mills which report using the Clean Energy Regulator’s (CER) Large-scale generation certificate (LGC) calculator spreadsheet “Renewable Electricity Eligibility Compliance for Bagasse Generators”, the calculated “Fraction of steam energy apportioned to power generation” figure would need to be applied to the site combustion carbon emissions, prior to dividing by total site electricity generation, to calculate the correct electricity emission intensity. This process is complicated by the different reporting years of NGER (financial year) and LGC Calculator (typically calendar year).

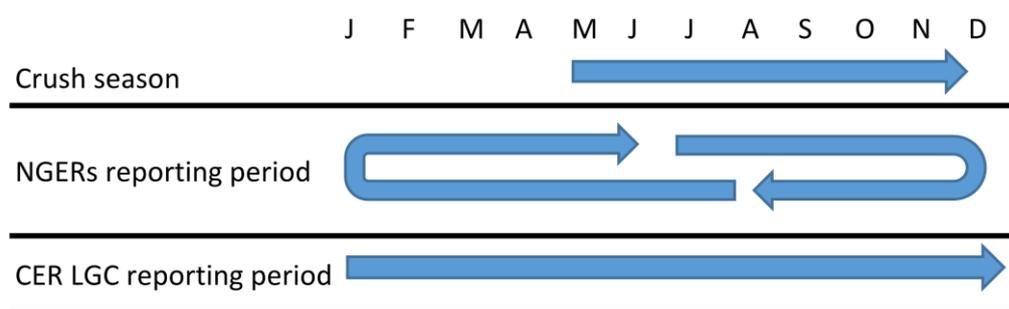
ASMC supports a review with industry collaboration to ensure that the NGERs legislation and processes clearly cater for sugar mill and other biomass cogeneration systems. Agreement to continue with the use of the LGC calculator fraction is also required.

Question 5: Is the frequency and timing of reporting right?

ASMC response: No.

There is a timing misalignment between the CER LGC spreadsheet (calendar year), NGER reporting requirements (financial year) (of which the LGC calculator is an input) and the milling sector’s crushing season (May to December) which complicates reporting (**Figure 1**).

Figure 1: Operational and reporting overlaps



Source: ASMC

There are two issues at play. The misalignment between the LGC calculator and the NGER reporting may be an issue if its acceptance is no longer supported by the CER.

The misalignment (overlap) between the crushing season and the NGER reporting reduces the accuracy of the individual site emissions for any particular year, to the extent of the differences between years. For mills who only use bagasse as fuel, then the effect is immaterial in terms of emissions intensity calculations. For mills who operate a co-located refinery or distillery which requires fossil fuel supplements, then seasonal variations do significantly change the site emissions intensity from year to year.

The ASMC supports an option to use Calendar Year of Financial Year NGER reporting to allow the sector’s operational processes to align with both LGC calculator and NGER reporting requirements (which is also required). Annual reporting should also be maintained.

Questions 12 and 13: Is the safeguard mechanism delivering its objectives and fit for purpose and are the thresholds efficient and effective?

ASMC response: No.

The mechanism works by requiring facilities with greater than 100,000 tonnes of emissions to keep emissions within baseline levels. A range of options are available to emitters to meet their obligations.

Presently, only one sugar mill is captured by the safeguard mechanism (Racecourse Mill with 102,528 t CO₂-e). Mackay Sugar as the owner of this mill is required to purchase ACCUs in difficult market conditions to offset emissions above the baseline.

Mackay Sugar have advised that it had adopted the default baseline of 100,000 t CO₂-e because of seasonal variations over the (five) years the reported baselines were determined and its forecast of future seasonal variability in load profiles and refinery international customer requirements. It therefore assesses and incorporates a carbon cost in future energy demand increases, where the energy cannot be met by bagasse stockpiles.

Notwithstanding that the Australian Government is currently consulting on exposure draft amendments to the *National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015* to streamline the program further, the considered view of Mackay Sugar is that the mechanism does not incentivise implementation of efficient abatement strategies. This is because there are limited viable commercial options to abate the emissions. In this instance, coal is the only available low cost fuel (i.e other renewable fuels are not available in the required commercial quantities) to the co-generation boilers to maintain the ongoing operations of the mill and refinery.

The sugar industry may be unique in that increases in production variables may not necessarily lead to an increase in emission intensities and emissions (a core tenet of the program). In the case of sugar milling, and the multiple products that are produced – raw sugar, molasses, refined sugar, electricity and ethanol – these will have variable emissions intensities each year depending on the cane fibre and fuel balance of the site. As such, the factors that cause the lower production of one variable (raw sugar) and its emission intensity, will likely increase the emissions intensity of the other products, all other factors staying stable.

Furthermore, the use of absolute, facility based triggers could lead to the undesirable scenario where industry limits production, or establishes multiple smaller and less efficient facilities to avoid thresholds and compliance obligations. In the context of sugar milling, increases in production can achieve improved environmental benefits as generally increased sugarcane crops (and increased sugar production), will increase the availability of renewable fuels, reduce the need for coal and decrease carbon emissions.

Question 24: How should NGERs reporting evolve over time?

ASMC response:

As options become available, the NGER data across years should become available in a tabular format, with all past data available to facility owners (only) from the NGER database. Current report formats are clunky textual files which is appropriate for reporting purposes and clarity, but is a

barrier to a facility efficiently using their own NGER data for benchmarking. This barrier is multiplied for organisations with more than one facility to benchmark between facilities over multiple years.

The ASMC supports a move towards more tables based, facility level reporting that captures all past data.

Question 25: Is the audit framework efficient?

ASMC response: No.

Feedback from ASMC members is that audits are not efficient given the long period of time to provide draft and final reports. Industry experience has included reports arriving more than one month after the audit process.

The ASMC supports a change in the guidelines so that draft audit reports are delivered within a month, and the final report within three months.

Question 33: Are the CER's compliance activities efficient?

ASMC response: No.

The compliance requirements to meet the reporting requirements for validation of wood waste have become uneconomical and are not fit for purpose. Currently, wood waste is being burnt inefficiently in stockpiles at the sawmill instead of being transported to sugar mill boilers for positive environmental use as a coal replacement fuel.

The CER current wood waste methodology requires that a saw miller provide documentation to the biomass boiler operator that it is selling sawdust or chip residues for less than \$10 per m³. This includes defining dates and times for every delivery of a bulk product. In reality a saw milling company will want to sell its waste sawdust stockpile for a defined unit price per m³, and want nothing more to do with it.

The ASMC supports a review of the validation of wood waste methodology to reflect the commercial realities.

End.