

Review of Renewable Energy (Electricity) Act Submission by Bundaberg Sugar Ltd

Bundaberg Sugar is a grower, miller, refiner, and marketer of sugar and related products in Australia. The company is Queensland's largest cane grower and owns and operates eight sugar mills and a sugar refining and packaging operation in Queensland.

Bundaberg Sugar participates in all levels of the raw sugar industry in the districts in which it operates. The company's activities span the full sugar processing cycle including cane growing, milling, refining, packaging and distributing sugar products to retail, industrial and export customers.

The company's other value adding operations include Bundaberg Foundry Engineers, one of Australia's longest established, heavy engineering and foundry enterprises; and Bundaberg Molasses which supplies molasses and related products to industrial and rural markets.

Bundaberg Sugar employs approximately 1000 persons year round, and approximately 1400 persons during the crushing season throughout its operations, with most employed in the sugar cane growing and milling areas of the business.

A raw sugar factory uses bagasse, the fibrous biomass by-product of the cane crushing process, as fuel in boilers to produce steam for use as heat energy within the factory process and to produce electricity also used in the process. Historically the steam efficiency levels of raw sugar factories have been selected to give a balance between bagasse available and the steam demand. This is because the low bulk density and fibrous nature of bagasse means it is costly to store and handle and deteriorates over time.

However with the creation of a value for new renewable electricity, through the Renewable Energy (Electricity) Act electricity beyond that previously produced now has additional value. This has been of benefit to Bundaberg Sugar Ltd, in particular within a number of our mills where excess bagasse, unused boiler steam capacity and unused steam turbine generator capacity is available and could be exploited to produce additional electricity beyond that generated previously. This additional electricity has a value for its energy and also for its renewable value ie Renewable Energy Certificates (RECs).

Projects based upon improved steam efficiencies within raw sugar factories, the replacement of relatively low pressure steam boilers with high pressure units and/or the replacement of back pressure steam turbine generators with condensing sets have been looked at, but have not been proceeded with by Bundaberg Sugar because of insufficient return on investment and the risk associated with a contracting cane supply due to low international sugar price and recent drought conditions. Only one such project has proceeded within the Australian sugar industry, the Stanwell project at Rocky Point sugar mill south of Brisbane, while all others similar mooted projects have been placed on hold.

To realise the potential of renewable energy from bagasse biomass will require a recognition that the Renewable Energy (Electricity) Act should be retained and amended to encourage further bagasse fired generation of electricity.

In support of this general position, the following review against selected items from the Review Panel's Terms of Reference is presented for your consideration.

a. Extent to which the Act has:

- i. contributed to reducing green house gas emissions; and**
- ii. encouraged additional generation of electricity from renewable energy sources**

Bundaberg Sugar Ltd in particular through three of its sugar mills in North Queensland (Tableland, South Johnstone and Babinda), has generated additional electricity beyond their baseline generation levels in both 2001 and 2002.

The extent of this additional generation is tabulated below. This generation resulted in an equivalent number of RECs which along with the additional export energy sales earned the Company additional revenues not previously available. In addition this renewable electricity generated and sold onto the electricity market would have displaced electricity which would have otherwise been generated using fossil fuels, so saving green house gas emissions, approximately as estimated.

Year	Additional electricity generated MWh	RECs	Displaced Greenhouse Gas Emissions - tonnes
2001	38,651	38,651	36,718
2002	53,218	53,218	50,557
Total	91,869	91,869	87,275

While the legislation has encouraged Bundaberg Sugar to exploit unused capacity in its power facilities in some mills where an excess of fuel also existed, it has not provided sufficient incentive to install new plant to take generation beyond these levels.

b. the level of penalties provided under this Act

While the penalty level of \$40 per MWh has not yet been reached, it is anticipated that it will be at this level within 1 to 2 years as the price was about \$35 in 2001 and the current market price is about \$37.50. For the sugar industry the penalty level of \$40 per MWh is TOO LOW.

Australian sugar mills by world standards have a relatively short season length varying from about 16 to 24 weeks depending upon location and crop. The season length is very much dependent upon the local climatic conditions, particularly min/max temperature profile, available sunshine, available water (either rainfall or irrigation) and its distribution. In eastern Australia the climatic conditions dictate the length of the season at around 20 to 23 weeks from mid June to late November / early December, which corresponds with the drier period of the year and optimal cane maturity.

The duration of the crushing season necessitates high capital input for high throughput rates for a relatively short period to handle an annual crop of cane. The capital required to install new high-pressure boilers and condensing/pass-out steam turbine generators to produce additional electricity for just 20 to 23 weeks per year has not been sufficient to drive this investment.

As the length of crushing seasons may not significantly change due to climatic and crop constraints, the investment in additional co-generation plants in sugar mills requires a higher price for the energy produced. As the price received for new renewable electricity is now made up of two components, energy and REC, one or both of these need to increase.

With regard to RECs the penalty level needs to be increased to beyond \$40 per MWh. A figure of \$100 per MWh would not be unreasonable as such a price should provide plenty of latitude for the market to find its own value within this upper limit and it is unlikely to be reached unless the growth of renewable energy plants stalls badly, in which case such a price should provide adequate incentive.

The other issue is the price of coal generated electricity which in eastern Australia is cheap by world standards. While it remains low it is an impediment to the development of alternative electricity generation. An inducement is provided to the renewable energy industry through RECs, but no complementary penalty scheme applies to fossil fuel electricity producers. This should be considered.

e. the need for indexation of the renewable energy shortfall charge to the Consumer Price Index to maintain the real value of the charge and the associated penalty charge

Historically the face value of money has continually eroded over time. As a consequence the time value of the fixed shortfall charge and the penalty charge in the legislation will also erode.

It is accepted that the national base rate of change of the value of money is nominally equal to the Consumer Price Index. It seems reasonable then to inflate annually the charges in the legislation by at least this value. Without this adjustment the rate of return calculated for a renewable energy project will reduce over time by this amount and the same project will be less attractive in the future, than it is now, all else being equal. That is, without indexation the charges will likely work as a disincentive to further investment.

It may be desirable to index them at a higher rate, say two times the annual CPI change. By this mechanism the ceiling price of the charges will automatically be revised upwards. This may be an alternative to setting a new fixed price for the charges.

f. ..., including the extent to which non-plantation forest waste has been utilised

Within Queensland some sawmills have access to native forest timber under forestry agreements, issued by the State Government. Where sawmills use the logs for producing sawn timbers, a considerable quantity of waste is generated as sawdust, shavings and chip.

Bundaberg Sugar Ltd sees this woodwaste as a source of alternative fuel for bagasse fired boilers capable of displacing fossil fuels which are currently used as supplementary fuels to bagasse. Supplementary fuels are required by many sugar mills because of the possibility of occasional shortages of bagasse and periods of high moisture in bagasse. Woodwaste may also provide the opportunity to extend the period for renewable electricity generation beyond the current constraints of relatively short crushing seasons.

Woodwaste from sawmills that produce sawn timber from logs sourced from native forests covered by state government approved forestry agreements is seen by Bundaberg Sugar Ltd as a fuel acceptable for the generation of electricity as renewable energy. We support the continued inclusion of such fuels as allowable fuels under the Renewable Energy (Electricity) Act.

Without outlets like sugar mills to consume sawmill woodwastes, particularly in country and regional areas, the majority of the woodwaste would likely go to land fill or be incinerated (if allowed). Apart from the potential environmental problems arising from woodwaste in long term land fill this material would be both a wasted resource and degenerate into a greenhouse gas generator. Such an outcome would waste the potential to generate renewable electricity and displace greenhouse gas that would otherwise be emitted by a fossil fuel electricity generator.

h. the level of the overall target and interim targets

Currently the overall and interim targets are not an issue for Bundaberg Sugar Ltd. Provided the targets are such that the renewable energy we generate and the RECs we produce are readily sought within the market, we perceive no problem disposing of either at an acceptable price.

The targets will be an issue if they prove to be too low and the market is oversupplied such that the price for renewable energy or RECs diminishes. This will stall all our renewable energy activities both current and into the future.

Hence we request that the targets not be renewed downwards and if anything be renewed upwards in support of encouraging renewable generation.

i. ii scheduled end-date of 2020

The scheduled end date of 2020 being a fixed date means that for each year that passes one year less of certainty in relation to REC pricing is available for determination of anticipated project returns. That is for a particular project proposal, all else being equal, the period of certainty for REC returns diminishes by one year for each year that the project is delayed so effectively reducing the potential return on investment and rendering the project less attractive over time.

This makes it potentially more difficult for companies like Bundaberg Sugar Ltd who are looking to invest in renewable energy but require a higher return on investment than currently indicated. Putting a project on hold for a year diminishes the certain returns from RECs by one year and requires projected prices to increase sufficiently to offset the diminishing return period while also increasing overall returns for the project, for the project outcome to become more favourable.

Bundaberg Sugar Ltd would support the scheduled end date being moved out to beyond 2020 to possibly 2030, as a 20 to 25 year timeframe is sought for many projects of this nature and REC prices may not reach an acceptable level for favourable economic return for another few years.

j. ii relevant economic and social impacts that have resulted from the implementation of the provisions of this Act

The Australian Sugar industry has for the past few years been undergoing significant hardship due to drought and low raw sugar price. The plight of the industry has been well reported in the media. Much press has been directed at the plight of cane growers, but it is equally applicable to sugar millers. Any diversity of activity within the milling sector can only be a positive contribution to the milling sector in its endeavour to maintain its future.

The more efficient use of steam within a sugar mill in conjunction with high-pressure steam boilers and condensing/pass-out steam turbine generators is the most direct way that sugar mills can contribute in a significant way to renewable energy supply. Such developments will add some diversity to sugar milling and provide an additional source of revenue. Gasification of bagasse is currently being researched by the milling industry research organisation. This technology will offer increased renewable energy output and revenues for the same quantity of bagasse, although at a higher capital cost, but commercial units are some way off yet.

As most sugar mills are in regional centres, their continued existence and prosperity is important for the local community. Without sugar cane growing and sugar milling many regional centres would diminish and some would die. The social fabric of many small and medium sized towns in sugar districts is dependent upon sugar cane farming and the local sugar mill, it is either the principal industry or a significant one within such districts. Without these activities, the social fabric of such districts will be dramatically altered, to the detriment of the Australian economy.

Bundaberg Sugar Ltd.
2 May, 2003.