

ENERGY EFFICIENCY OPPORTUNITIES PUBLIC REPORT - 2008

COMPANY DETAILS

Company	The Mulgrave Central Mill Company Limited*
Address	Gordon St, Gordonvale. QLD. 4865

*During 2008 The Mulgrave Central Mill Co Ltd became a wholly owned subsidiary of Maryborough Sugar Factory Limited

PERIOD OVER WHICH THE REPORT RELATES

Start	1 January, 2005	Finish	31 December, 2005
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ENERGY USE

Period assessed	Energy use per annum (GJ)	Energy use as an indicator (GJ/tonne cane crushed)	
1 January, 2005 – 31 December 2005	3,379,409		2.660

SUMMARY OF ASSESSMENTS UNDERTAKEN

Energy usage assessments were undertaken covering the 2005 calendar year in accordance with the key requirements of the energy efficiency opportunities legislation, and as per the company's Assessment and Reporting Schedule. This involved the following.

- Data on energy purchased for the period examined were extracted from financial records. All energy data used, had an accuracy of within +/-5%.
- Data on energy available from processing operations and variables affecting energy usage for the period examined were extracted from manufacture computer records. All energy data used, had an accuracy of within +/-5%.
- Measurements were made on electricity usage in different areas during operation.
- A computer model was written that took input of all energy use and process variable data, and disaggregated energy usage for different factory areas. Disaggregation of energy flows around the factory is considered to have an accuracy of better than +/-20 as per the company's Assessment and Reporting Schedule.

Options for energy usage reduction were examined. The primary focus of these was on options to export additional electricity, as this is the major option for energy usage reduction (see contextual information below). Additional secondary energy efficiency options were identified that would support and enhance the implementation of electricity export initiatives, but which could not achieve an energy usage reduction in their own right (see contextual information below). These were only examined in detail where a potentially viable option for electricity export was identified as per the company's Assessment and Reporting Schedule.

Nineteen options for energy usage reduction were examined.

- One of these has been implemented
- One was found to not be viable in the form assessed
- Eighteen others are under periodic review to ensure that opportunities arising through changes in equipment availability and/or price, electricity income, and/or changes in government policies and legislation are appropriately evaluated.

SUMMARY OF ENERGY USAGE

Business Unit	Energy usage for the year of assessment	Data accuracy
The Mulgrave Central Mill Co Ltd	3,379,409GJ	Within +/-5%
Total energy usage	3,379,409GJ	
Total energy usage as percentage of business unit covered by this report	100%	

SUMMARY OF ENERGY USAGE BY TYPE

Date	Energy usage by fuel type (GJ)					Total energy
	Bagasse	Boiler oil (recycled)	Diesel	Petrol	Mains electricity	
1 January, 2005 – 31 December 2005	3,342,796	12,588	16,982	222	6,821	3,379,409

ASSESSMENT AND BUSINESS RESPONSE

Opportunities	Number of Opportunities	0 - <2 years	2 - <4 years	Annual energy savings (GJ)	Accuracy Range (%)
Identified (accuracy $\leq \pm 30\%$)	1	0	0	2,056	+/-5
Identified (accuracy $> \pm 30\%$)	17	0	0	assessment ongoing	assessment ongoing
Total identified	18	0	0	assessment ongoing	assessment ongoing
Under investigation	17	0	0	assessment ongoing	assessment ongoing
To be implemented	0	0	0	-	-
Implementation commenced	0	0	0	-	-
Implemented	1	0	0	2,056	+/-5
Not to be implemented	0	0	0	-	-

ENERGY EFFICIENCY OPPORTUNITIES IDENTIFIED

Upgrade of control equipment on steam turbine generators (STGs)

Only one energy efficiency opportunity was identified that returned a payback period of four years or less, and in this case the four year payback was only achieved because half the costs were contributed by the Commonwealth under a finding arrangement related to another programme. The total cost of the project was \$180 000.

The project involved an upgrade to control equipment on two STGs to allow them to supply the factory and export electricity in parallel. Previous arrangements had one machine on export, and the other supplying the factory. The project was completed in 2008. It is estimated that implementation will result in the additional export of around 570MWh of electricity generated from a renewable resource each year. Assuming an electricity price of \$40 per MWh, then the project should return around \$23,000 per annum.

This project may also facilitate other works to further increase export potential.

Upgrade of transformers for export of electricity

Currently the potential to export electricity is restricted to the capacity of transformers connecting the factory to the electricity grid. Increasing the capacity of these has the potential to increase export capability by up to 1.25MW, or up to 3,600MWh of electricity generated from a renewable resource each year. Assuming an electricity price of \$40 per MWh, the return would be up to around \$143,000 per annum.

Efforts to secure quotations on the supply of suitable transformers have failed to elicit a response thus far. Efforts will continue, including trying to source prices on second hand components.

Increases to electricity export capability

Other options to increase electricity generation and export potential are under regular review. To date no cost effective options have been identified, however options are regularly re-assessed to ensure that opportunities arising through changes in equipment availability and/or price, electricity income, and/or changes in government policies and legislation are appropriately evaluated.

CONTEXTUAL INFORMATION

For the period assessed in this report, over 98.9% of the energy needed for the company's operation was supplied from renewable resources. This occurs through the use of bagasse (cane plant fibre after separation of juice) as a fuel. Bagasse is burned in the boilers and the heat used to generate steam which drives processing equipment, generators, and is used for process heating. Carbon dioxide is absorbed by the following year's crop, offsetting emissions from the burning of this material.


Electricity in excess of factory needs is generated, and for the 2005 calendar year 5,689MWh of electricity from a renewable resource was exported into the electricity grid.

The usage of non-renewable resources by the company is relatively small. Usage includes diesel (440kl or 0.5% of total energy usage), petrol (6.5kl, or 0.007% of total energy usage), recycled oil used as supplementary boiler fuel (317kl, or 0.37% of total energy usage) and imported electricity (1,895MWh, or 0.2% of total energy usage).

It is not currently practical for the company to dispose of bagasse by any other method apart from burning. With bagasse generation beyond the control of the company, there are limited opportunities to reduce energy usage as defined under the Energy Efficiency Opportunities legislation apart from export of electricity. Options for enhanced generation are regularly assessed in an effort to identify viable opportunities.

DECLARATION

The information included in this report has been reviewed and noted by the board of directors and is to the best of my knowledge, correct and in accordance with the *Energy Efficiency Opportunities Act 2006* and *Energy Efficiency Opportunities Regulations 2006*.


for MJ Barry
(Chief Executive Officer)