

PUBLIC REPORT TEMPLATE 2010

Please consult the explanatory document when completing this template

Controlling Corporation

Mackay Sugar Limited

Period to which this report relates

Start 1 July 2006

End

30 June 2010

(eg. for a Corporate Group with the trigger-year 2005-06, the report will cover the period 1.7.2006-30.6.2010)

Part 1 – Information on assessments completed to date

Table 1.1 – Description of the way in which the Corporate Group (or part of it) has carried out its assessments

The timing of assessments carried out by Mackay Sugar Ltd is continuing as planned under the approved Assessment and Reporting Schedule. During this reporting period 10 opportunities applicable to Farleigh Mill were assessed and six of these have been implemented. The energy assessments performed have been thorough and comprehensive. Key personnel from Mackay Sugar are involved in the assessments and some external consultants have been used to provide specialist expertise at various times where required. The assessments have complied with the intent and key requirements of the EEO program with those which had been carried out in the previous reporting periods useful for identifying and prioritising opportunities at other sites.

As indicated in the previous reports, greater than 90% of energy generated and used across Mackay Sugar's is renewable as it is obtained from combustion of bagasse. Electricity is generated on-site at Farleigh whilst crushing and any excess to the site requirements can be exported into the grid but the rate at which this excess electricity can be fed into the grid is a limiting factor. Benefits of energy efficiency (bagasse energy) are lost once this export limit is reached and no large scale bagasse storage is available. However, with boilers operating year round for the Refinery at Racecourse, the excess bagasse can be transported and stockpiled there to offset the use of coal in the non-crush period. There are also limits to the amount of bagasse that may be stored under regulatory approvals so for the most part the energy efficiency opportunities assessed and implemented at Farleigh Mill have been associated with projects which demonstrate benefits across the organisation. One such large project presently being implemented should support more projects at other mills as increasing cogeneration capacity at Racecourse Mill. However this project cannot be included as a significant opportunity for Racecourse Mill under this Energy Efficiencies Opportunities program as it does not meet the criteria for providing payback within 4 years. Each of the projects requiring capital goes to the Board for sign off and approval and updates are provided through various reports submitted to the Board throughout the year.

Assessment of the yearly energy usage for MSL mills has shown that the reported energy use and efficiencies achieved can vary substantially from year to year due to many factors including the season length, cane characteristics, cane tonnage and cane quality (eg. Dirt loadings) most of which are beyond the control of the mill but which impact on cane processing. The total energy use reported in this period was down substantially from the previous report due to a reduced harvest. Playstowe Mill has been permanently closed and hence no energy assessments will be carried out for Playstowe with site energy use well below the trigger thresholds. There has been a significant increase in coal costs over the last year but this has not significantly altered the payback for projects reported in previous years.

Part 1 – Information on assessments completed to date (continued)

Table 1.2 – Energy use assessed

Group member and/or business unit and/or key activity and/or site (or part thereof) that has had an assessment completed by 30 June 2010 (include all assessments completed to date for the current 5 year cycle).	Period over which assessment was undertaken ¹	Energy use for the period 1.7.2009 to 30 June 2010 of the assessed entity (or part thereof) expressed in GJ ²
Racecourse Mill	1/7/2006 to 30/6/2008	4,462,094
Marian Mill	1/7/2007 to 30/6/2009	4,715,275
Farleigh Mill	1/7/2008 to 30/6/2010	3,901,372
Total energy use of assessed entities (or part thereof)		13,078,741
Total energy use of the whole corporate group in the period 1.7.2009 to 30 June 2010		13,163,673
Total energy use of assessed entities (or part thereof) for the period 1.7.2009 to 30.6.2010 expressed as a percentage of total energy use for the period 1.7.2009 to 30.6.2010		99.35%

1. This should be the start and finish date (month and year) for the assessment (planned assessment dates were nominated in Table 3.1 of the approved ARS).

2. Energy Bandwidth may only be used if approved in the Assessment and Reporting Schedule.

Table 1.3 – Accuracy of energy use assessed data

Entity	% achieved	Reasons for not achieving data accuracy to within ±5%
Racecourse, Marian & Farleigh Mills	+/- 10%	There are limitations on the level of accuracy concerning bagasse quantities produced that can be practically obtained.
		There is an accumulation of errors from the following sources: <ul style="list-style-type: none"> Incoming fibre analyses Bagasse fibre analyses (errors for analyses of Brix in bagasse & Water in bagasse) Correction for fibre lost to mud system (errors for analyses of mud % cane, MS % mud & fibre % mud) Bagasse transport is via nominal weights for each type of truck (weighted periodically)

Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

Part 2A - New assessments completed or not reported since your last Public Report

Name of Group member or business unit or key activity or site: Farleigh Mill

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

3,901,372	GJ
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Table 2.1 – Opportunities assessed to an accuracy of better than or equal to (\leq) $\pm 30\%$

Status of opportunities identified		Total Number of opportunities	Estimated energy savings per annum by payback period (GJ)						Total estimated energy savings per annum (GJ)
			0 – < 2 years		2 – ≤4 years		> 4 years		
			No of Opps	GJ	No of Opps	GJ	No of Opps	GJ	
Business Response	Under Investigation	3	1	82,000	1	13,000	1	511,000	606,000
	To be Implemented	0							
	Implementation Commenced	0							
	Implemented	6	4	140,808			2	553	141,361
	Not to be Implemented	1	1	457,000					457,000
Outcomes of assessment	Total Identified	10	6	679,808	1	13,000	3	511,553	1,204,361

Part 2A - New assessments completed during the reporting period (continued)

Name of Group member or business unit or key activity or site: _____

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

	GJ
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Table 2.2 – Opportunities assessed to an accuracy of worse than (>) ±30%

Status of opportunities identified		Total Number of opportunities	Estimated energy savings per annum by payback period (GJ)						Total estimated energy savings per annum (GJ)
			0 – < 2 years		2 – ≤4 years		> 4 years		
			No of Opps	GJ	No of Opps	GJ	No of Opps	GJ	
Business Response	Under Investigation								
	To be Implemented								
	Implementation Commenced								
	Implemented								
	Not to be Implemented								
Outcomes of assessment	Total Identified								

Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

Part 2B - Update of assessments reported in previous Public Reports

Name of Group member or business unit or key activity or site: _____ Racecourse Mill _____

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

4,462,094	GJ
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Table 2.3 – Opportunities assessed to an accuracy of better than or equal to (\leq) $\pm 30\%$

Status of opportunities identified	Total Number of opportunities	Estimated energy savings per annum by payback period (GJ)						Total estimated energy savings per annum (GJ)
		0 – < 2 years		2 – ≤4 years		> 4 years		
		No of Opps	GJ	No of Opps	GJ	No of Opps	GJ	
Business Response	Under Investigation	3		2	136,000	1	8,000	144,000
	To be Implemented	0						
	Implementation Commenced	1				1	756,000	756,000
	Implemented	3		3	415,000			415,000
	Not to be Implemented	1		1	54,000			54,000
Outcomes of assessment	Total Identified	8		6	605,000	2	764,000	1,369,000

Note: One less "Under Investigation" opportunity has been reported from previous years as it has yet to be costed.

Part 2B - Update of assessments reported in previous Public Reports

Name of Group member or business unit or key activity or site: _____ Marian Mill _____

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

4,715,275	GJ
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Table 2.3 – Opportunities assessed to an accuracy of better than or equal to (\leq) $\pm 30\%$

Status of opportunities identified	Total Number of opportunities	Estimated energy savings per annum by payback period (GJ)						Total estimated energy savings per annum (GJ)	
		0 – < 2 years		2 – ≤4 years		> 4 years			
		No of Opps	GJ	No of Opps	GJ	No of Opps	GJ		
Business Response	Under Investigation	5		4	452,000	1	7,000	459,000	
	To be Implemented	0							
	Implementation Commenced	0							
	Implemented	2	718,000					718,000	
	Not to be Implemented	0							
Outcomes of assessment	Total Identified	7	2	718,000	4	452,000	1	7,000	1,177,000

Note : One extra "Under Investigation" opportunity added from previous year due to investigation of bagasse storage options for co-generation.

Part 2B - Update of assessments originally reported in previous Public Reports (continued)

Name of Group member or business unit or key activity or site: _____

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

	GJ
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Table 2.4 – Opportunities assessed to an accuracy of worse than (>) ±30%

Status of opportunities identified		Total Number of opportunities	Estimated energy savings per annum by payback period (GJ)						Total estimated energy savings per annum (GJ)
			0 – < 2 years		2 – ≤4 years		> 4 years		
			No of Opps	GJ	No of Opps	GJ	No of Opps	GJ	
Business Response	Under Investigation								
	To be Implemented								
	Implementation Commenced								
	Implemented								
	Not to be Implemented								
Outcomes of assessment	Total Identified								

Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

Part 2C - Details of at least three significant opportunities found through EEO assessments

Table 2.5 – Description of 3 significant opportunities

Opportunity 1

#3 Boiler Air Heater refurbishment: A boiler air heater is a gas to air heat exchanger that pre-heats boiler combustion air using the heat in the flue gas exiting the boiler. The benefits of such a system are to improve the overall heat recovery of the combustion process and hence reduce fuel consumption.

The condition of the #3 boiler air heater had deteriorated to a point where it was discovered that the tubes were corroded and leaking caused by poor flue gas and air distribution. Low flue gas flows lead to dew point corrosion of the air heater tubes. Modelling was performed by SRI to determine suitable air flow turning vanes to correct these issues and calculate a change in boiler efficiency corresponding to a reduction in bagasse usage rate of 3.5 tph for #3 boiler.

In 2006 some of the tubes were replaced and then in 2007 the remaining tubes were replaced and the air turning vanes installed at a cost of around \$487,000. The benefits of higher boiler efficiency and increased bagasse stored at Racecourse, to offset coal usage in the non-crush, leads to an estimated payback of 1.41 years.

Opportunity 2

Re-arrange juice flow path for #4 Effets: The majority of the water in the cane juice is removed in a multiple effect evaporation system. A series of evaporators (effets) progressively boil off the water whilst the pressure in each evaporator is progressively lowered to improve evaporation and save energy. Low pressure (LP) steam is used as the heating medium in the first evaporator and the vapour produced is used to boil the juice in the next evaporator. A vacuum pump connected to the final evaporator provides the temperature differences required across all the evaporators. The benefits of such a system is that one tonne of LP steam can evaporate up to 5 tonne of water in quintuple (5 evaporators) arrangement.

Farleigh has a quintuple evaporator stage. Unfortunately over the years changes have meant that the juice flow path is not always series flow and the #4 B & C effets were fed in a parallel arrangement. These vessels also have differing heating tube levels and hence less than optimal boiling conditions occur. The project was to re-arrange the juice flow path for #4 B & C vessels to series flow.

Modelling was done to predict the effects of the juice flow re-arrangement and the predicted benefits include low LP steam consumption and a higher crushing rate. The installation was completed prior to the 2009 crushing season at a cost of \$43,000. The predicted benefits indicated that the payback for this was 0.3 years.

Opportunity 3

Automate LP steam make-up valve: Periodically the evaporator tubes become scaled up, leading to reduced heat transfer across the tube, and the tubes need to be chemically cleaned. In the case of #1 effat at Farleigh this causes problems with disrupting the vapour flow to the primary heaters. The primary heaters use #1 vapour as their heating source rather than LP steam in order to assist the evaporation process and allow further steam efficiency. The factory cannot operate correctly without primary heating of the juice.

When #1 vessel is being taken off-line or put on-line there is a period of change over where no #1 vapour is available for the primary heaters and this causes a stop in the crushing rate so as to minimise the effects on the process. It has been estimated that approximately 1 hour per clean for #1 effat could be saved by addition of an automated LP steam valve to the primary heaters and allow for continued supply of heating source whilst #1 effat in coming on and off line.

The LP steam valving was installed in 2009 at a cost of \$19,000 and with the predicted benefits of reduced season length and LP steam consumption the payback is expected to be 0.7 years.

Opportunity 4

Part 3 - Voluntary Contextual Information

Table 3.1 – Contextual Information

Table 3.2 – Energy use expressed in Greenhouse Gas emissions and as an energy use indicator

Period of energy use _____ to _____		Energy use pa (GJ)	Energy use pa (GGE)	Energy use as an indicator*
Name of group member/ business unit/ key activity/site				
Total				

Table 3.3 - Opportunities assessed to an accuracy of better than or equal to (<=) ±30% (\$ value)

Status of opportunities identified	Number of opportunities	Estimated energy savings per annum by payback period (\$)			Total estimated energy savings per annum (\$)
		0 – < 2 years	2 – ≤4 years	> 4 years	
Business Response*	Under Investigation				
	To be Implemented				
	Implementation Commenced				
	Implemented				
	Not to be Implemented				
Outcomes of assessment*	Total Identified				

Part 3 - Voluntary Contextual Information (continued)

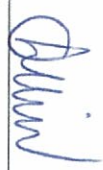
Table 3.4 – Changes in energy use as an indicator

Name of group member/ business unit/ key activity/site	Current energy use as an indicator	Previous energy use as an indicator	Reasons for change
Total			

Part 4 - Declaration

Table 4.1 - Declaration of accuracy and compliance (mandatory information)

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*.


Insert Name and Title (Chair of the Board, CEO, or Managing Director) of Signatory here
Quinton LANCE MILODANOV, CEO
Date 20/12/2010