

FIRST PUBLIC REPORT TEMPLATE

Controlling Corporation

CSR Limited

Period to which this report relates

Start

1st July 06

End

30th June 2008

Part 1 - Summary of assessments conducted thus far

Table 1.1 - Description of the way in which the corporation has carried out its assessments and over what period was each assessment taken. A statement saying that the intent and key requirements of the Energy Efficiency Opportunities legislation have been met must be made.

The assessments were carried out in line with the approved Assessment and Reporting Schedule, the assessment framework and relevant regulations. The sites assessed were all sites greater than 0.5 petajoules. The period of energy use to which the assessments relate is 1st July 2007 to 30th June 2008 with the total energy use of 7,577,012 GJ of energy, or 12.5% of CSR's total energy use.

The assessment periods were:

- Building Products, Cecil Park, October 2007 – June 2008.
- Sugar, Kalamia Mill, September 2007 – March 2008. This assessment process was conducted with the Department of Resources, Energy and Tourism (previously Industry, Tourism and Resources) as part of a trial for the sugar milling industry.
- Sugar Australia, Yarraville Refinery and Mackay Racecourse Refineries. Project plans outlining how the regulations would be met were completed in consultation with the executive senior leadership and relevant site personnel in November 2007 and January 2008 respectively. An independent consultant was employed to conduct the energy assessment at both refineries. Draft assessment reports were received in May 2008, with the final energy assessment reports received from the consultants in early September, although opportunities were identified and agreed with senior management within Sugar Australia in July/August 2008.

Activities at the sites vary. Cecil Park manufactures clay bricks and pavers; Kalamia Mill manufactures raw sugar with by products of mill mud and ash, used as a soil conditioner on neighbouring farms. Yarraville and Mackay Racecourse Refineries refine raw sugar, producing food grade refined sugar.

CSR believe the intent and key requirements of the Energy Efficiency Opportunities Legislation have been met.

Table 1.2 - Group member/business unit/key activity/site that have been assessed	Energy use per annum in the year the assessment is completed	Energy data accuracy (if not within $\pm 5\%$)	Reasons for not achieving data accuracy to within $\pm 5\%$
Building Products – Cecil Park	548,483 GJ	$\pm 5\%$	
Sugar – Kalamia Mill	4,654,441 GJ*	$\pm 20\%$	In the Sugar Mills the accuracy of data reflects two aspects. The first is that the heating value per tonne of cane varies due to the natural variation in the cane. The second related to the percentage of fibre in the cane. It is not possible to sample every tonne of cane, therefore a representative sample is taken, which leads to a representative analysis of the % of fibre in the cane. Both of these aspects increase the error in data accuracy.
Sugar Australia – Yarraville	1,114,569 GJ	$\pm 5\%$	
Sugar Australia – Mackay Racecourse	1,259,519 GJ		
Total	7,577,012 GJ		
Total as a percentage of total energy use of the group covered by this report	12.5% (rounded)		

*Includes the consumption of bagasse, a renewable fuel.

Part 2 - Outcomes of and business response to opportunities that have been identified and evaluated for each group member, business unit, key activity or site assessed

Group member/business unit/key activity/site >0.5 PJ name: Building Products – Cecil Park

Table 1.3 Status of Opportunities		Number of Opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)	Accuracy range (%)
			0 – < 2 years	2 – ≤ 4 years		
Outcomes of assessment	Identified (accuracy ≤ ±30%)	46	113,017	16,789	129,806	10-30%
	Identified (accuracy > ±30%)	0	0	0	0	N/A
	Total Identified	46	113,017	16,789	129,806	10-30%
Business Response	Under Investigation	13	0	6,840	6,840	10-30%
	To be Implemented*	10	108,961	6,600	115,561	10-20%
	Implementation Commenced	4	–	–	0***	N/A
	Implemented	8	4,056	3,349	7,405	10-15%
	Not to be Implemented	11**	0	0	4,134	10-30%

* Subject to the CSR capital expenditure approval process. In some cases initiatives have commenced implementation which were implemented for operational reasons and may have energy savings, however these savings have not yet been quantified.

** Greater than 4 year payback and therefore GJ not included in overall total.

*** Zero savings indicates negative return.

Group member/business unit/key activity/site >0.5 PJ name: Sugar – Kalamia Mill

Table 1.3 Status of Opportunities		Number of Opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)	Accuracy range (%)
			0 – < 2 years	2 – ≤ 4 years		
Outcomes of assessment	Identified (accuracy ≤ ±30%)	4	61,000	4,304	65,304	20-30%
	Identified (accuracy > ±30%)	30	0	0	0	0
	Total Identified	34	61,000	4,304	65,304	20-30%
Business Response	Under Investigation	3	61,000	2,984	63,984	±30
	To be Implemented*	0	0	0	0	0
	Implementation Commenced	0	0	0	0	0
	Implemented	1	0	1,320 (5 year payback)	1,320	20%
	Not to be Implemented**	30	0	0	0	0

*Subject to the CSR capital expenditure process.

** Opportunities to be further developed.

Part 2 - Outcomes of and business response to opportunities that have been identified and evaluated for each group member, business unit, key activity or site assessed

Group member/business unit/key activity/site >0.5 PJ name: Sugar Australia – Yarraville Sugar Refinery

Table 1.3 Status of Opportunities		Number of Opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)	Accuracy range (%)
			0 – < 2 years	2 – ≤ 4 years		
Outcomes of assessment	Identified (accuracy ≤ ±30%)	67	39,063	46,843	85,906	0-30%
	Identified (accuracy > ±30%)	21	0	0	0	>30%
	Total Identified	88	39,063	46,843	85,906	0-30%
Business Response	Under Investigation	48	30	23,980	24,010	<30%
	To be Implemented*	21	1,761	927	2,688	<30%
	Implementation Commenced	5	23,872	0	23,872	<30%
	Implemented	1	0	933	933	<30%
	Not to be Implemented**	13	13,400	21,003	34,403	<30%

*Subject to the CSR capital expenditure process.

**Opportunities are not implemented for a number of reasons including, payback is greater than 4 years; product quality and process issues would need to be first addressed; and the opportunities identified may have already been addressed through other projects.

Part 2 - Outcomes of and business response to opportunities that have been identified and evaluated for each group member, business unit, key activity or site assessed

Group member/business unit/key activity/site >0.5 PJ name: Sugar Australia – Mackay Sugar Refinery

Table 1.3 Status of Opportunities		Number of Opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)	Accuracy range (%)
			0 – < 2 years	2 – ≤ 4 years		
Outcomes of assessment	Identified (accuracy ≤ ±30%)	34	69,107	4,646	73,753	0-30%
	Identified (accuracy > ±30%)	30	0	151,062	151,062	>30%
	Total Identified	64	69,107	155,708	224,814	0 - >30%
Business Response	Under Investigation	37	396	155,632	156,028	<30%
	To be Implemented*	22	47,795	76	47,871	<30%
	Implementation Commenced	1	20,172	0	20,172	<30%
	Implemented	0	0	0	0	<30%
	Not to be Implemented**	4	744	0	744	<30%

*Subject to the CSR capital expenditure process.

** Opportunities are not to be implemented as the payback is greater than 4 years or opportunities cannot be implemented due to operational licensing requirements.

Details of at least three significant opportunities found through EEO assessments

Details must include a brief description of the opportunity and may optionally include details of the costs of implementation, energy/dollar savings and any other benefits (such as greenhouse reductions).

Table 1.4
Opportunity 1
<p>Kalamia Sugar Mill: The significant opportunity identified involves the change in operation of the batch crystallization pans. Batch pans are large vessels (containing up to 220 tonnes of product) in which the sugar crystals grow in solution. Steam is used to boil off the water, leaving behind the sugar crystals in a thick sugar syrup. These vessels use a large proportion of the available factory steam supply. This project looks at evening out the start and stop sequencing of the vessels. This in turn will mean a more even steam use by the collective pans. When more than one of these large pans stops using steam simultaneously, steam may be vented to control the pressure in the steam supply. Evening out the steam flow to the pans, will potentially reduce the steam that is vented to atmosphere. As a result, less bagasse will be consumed at Kalamia Mill. The excess will be transferred to Pioneer Mill for the generation of an increased amount of the renewable electricity. If the change in timing mentioned above is possible, savings of up to 61,000 GJ per year of steam may be achieved. Trials are to be undertaken to determine if this rescheduling can be accommodated in a sustainable manner.</p>
Opportunity 2
<p>Mackay Sugar Refinery: A significant opportunity was identified in optimizing the use of the crystallisation pans. Sugar boiling is the highest energy use process in the refinery. Boiling the sugar is necessary to remove water thereby achieving the optimal sugar concentration in the pans for crystallization. Efficient pan operation depends on a number of factors including density of feed supply; available steam; maximum heat transfer; and particular operator skill. This project requires staff training and the improvement of standard operating procedures and control systems. If successful it may save some 20,172 GJ of energy per annum.</p>
Opportunity 3
<p>Cecil Park Brick Factory: A significant opportunity was identified to preheat the combustion air that is supplied to the burners within the kiln, with waste heat drawn from the kiln. This is essentially a waste heat recovery process. By preheating the combustion air, the waste heat from the kiln will be utilized, instead of going to atmosphere, and the gas consumption will be reduced as the burner air is hotter. If successful, an estimated saving of 9,900 GJ of energy per annum may be achieved.</p>

Note: All opportunities identified are subject to the CSR capital expenditure approval process.

Part 3 - Voluntary Contextual Information

Reporting corporations may supply additional information that provides more context to the public report. Such information may include:

CSR has reported additional information in its Sustainability report which is available at www.csr.com.au

Part 4 - Declaration

(See paragraph 8 of Schedule 4 of the Regulations and paragraph 22(4)(c) of the Act)

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*.



Managing Director