

FIRST PUBLIC REPORT TEMPLATE

Controlling Corporation

Brickworks Limited

Period to which this report relates

Start 1/7/2006

End 30/6/2008

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.

Brickworks Limited senior management established an EEO Steering Committee to assist the organisation meet its obligations under the EEO legislation. The primary role of the Committee is to ensure that the organisation meets the 6 key elements of the EEO Assessments. The commitment by senior management in forming this committee forms the basis of meeting the “leadership element”.

Under the guidance of the Steering Committee Brickworks Limited has undertaken Energy Efficiency Opportunities assessments of its three brick manufacturing plants at Horsley Park (NSW), the brick manufacturing plant at Scoresby (Vic) and its tile manufacturing plant in Ballarat (Vic). The assessment represents a review of approximately 17% of the organisation’s total energy consumption.

Brickworks initially undertook a review of the Corporate Car policy, however, during the review process it was identified that a more comprehensive review of the Truck and Car fleets across all business units and the associated on-site and on-road fuel contracts and energy usage reporting should be undertaken. These initiatives have been recently implemented and the results will be published in the 2008/2009 EEO Public Report.

Brickworks Limited used the Energy Savings Action Plan (ESAP) methodology developed by the NSW Government, as the basis of the assessment for plants 1 & 3 at Horsley Park. As part of the ESAP a substantial audit based assessment complying with Australian standard AS/ANZ 3598:2000 was undertaken. The plan focuses on opportunity identification and evaluation, element 4 of the EEO requirements.

The ESAP methodology included the following process steps:

- Identifying an energy and production baseline;
- Conducting a site management review to identify current energy management policies and procedures;
- Conducting a site technical review to calculate an energy mass balance, energy use by sub-activity specific energy indexes by main energy use and efficiency and savings opportunities.
- The audit and management reviews were undertaken in August 2006, with annual management reviews in 2007 & 2008.

During 2007/2008 an assessment of Plant 2 at Horsley Park was undertaken during a period of substantial downturn in the building industry. A portfolio review identified that maintaining Plant 1, operating Plant 3 on one kiln (50%) and closing production at Plant 2 during this downturn was the optimal energy and cost efficiency mix to maintain product supply into weak market.

Audit assessments were also undertaken for the Austral Bricks Scorseby plant. The Assessment highlighted plant inefficiencies, including energy inefficiencies. The outcome of this assessment prompted the closure of the plant and replacement with a modern more fuel-efficient plant at Wollert.

These reviews provided feedback and efficiency opportunities from both a management and technical perspective. Brickworks Limited has set up a Cross Functional Team to address energy efficiency matters. This team incorporates managerial staff, operational managers, environmental managers, engineers and technical managers with appropriate skills and expertise to analyse energy and process data. This team meets the “people element” required under EEO regulations. The team interacts with Brickworks Limited’s alliance partners and onsite contractors.

The Cross Functional Team followed up on the recommendations made in the audit. The Team relied on the hurdle rates established for efficiency projects and took into account the EEO Legislative requirements. Projects were ranked according to payback period and projects with an internal rate of return were analysed in detail to ensure that management have sufficient information at hand to make informed decisions as to whether or not a project has or will be implemented. The team also monitored the progress of the energy savings initiatives and also undertook a formal review process to evaluate projects post implementation. The team continually seeks energy efficiency ideas from the site to ensure the process is on going. The outcomes of its findings are reported to the EEO Steering Committee.

The EEO Steering Committee disseminates EEO and Energy information to senior management and to the sites, with the aim of increasing energy efficiency awareness, across the organisation. (Key element 6 of the program).

The outcomes of these assessments and review process can be found below in table 1.3.

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 $\pm 5\%$ **
Austral Bricks Scoreseby (VIC)	12,054 GJ	+/-5%	
Austral Bricks Plant 1 Horsley Park (NSW)	315,877 GJ	+/-5%	
Austral Bricks Plant 2 Horsley Park (NSW)	147,369 GJ	+/-5%	
Austral Bricks Plant 3 Horsley Park (NSW)	486,646 GJ	+/-5%	
Eureka Tiles Victoria	93,548 GJ	+/-5%	
Total	1,055,494 GJ		
Total as a percentage of total energy use of the group covered by this report	16.7%		

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 name: **Brickworks Limited Austral Bricks Plant 1 Horsley 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	>4 years		
Outcomes of assessment	Identified (accuracy ≤ ±30%)	6	0	1303	0	1303	± 5%
	Identified (accuracy > ±30%)	0	0	0	0	0	0
	**Total Identified	6	0	1303	0	1303	± 5%
***Business Response	Under Investigation	1	0	0	0	0	± 5%
	To be Implemented	0	0	0	0	0	± 1%
	Implementation Commenced	2	0	774	0	774	± 1%
	Implemented	2	0	173	0	173	± 1%
	Not to be Implemented	1	0	356	0	356	± 1%

Group member/business unit/key activity/site name: **Brickworks Limited Austral Bricks Plant 2 Horsley 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%)	1	162,913	0	162,913	+/- 1 %
	Identified (accuracy > ±30%)	0	0	0	0	0
	**Total Identified	1	162,913	0	162,913	+/- 1 %
***Business Response	Under Investigation	0	0	0	0	0
	To be Implemented	0	0	0	0	0
	Implementation Commenced	0	0	0	0	0
	Implemented	1	162,913	0	162,913	+/- 1 %
	Not to be Implemented	0	0	0	0	0

Payback has been placed in the 0-2 year area. The net financial benefits included the plant shut down. Energy savings have been immediate.

Group member/business unit/key activity/site name: **Brickworks Limited Austral Bricks Plant 3 Horsley 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	>4 years		
Outcomes of assessment	Identified (accuracy ≤ ±30%)	6	456	929	152	1,537	± 5%
	Identified (accuracy > ±30%)	0	0	0	0	0	0
	**Total Identified	6	456	929	152	1,537	± 5%
***Business Response	Under Investigation	2	0	929	0	929	± 5%
	To be Implemented	0	0	0	0	0	± 1%
	Implementation Commenced	2	424	0	0	424	± 1%
	Implemented	1	32	0	0	32	± 1%
	Not to be Implemented	1	0	0	152	152	± 1%

Group member/business unit/key activity/site name: **Brickworks Limited Eureka Tiles**

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	>4 years		
Outcomes of assessment	Identified (accuracy ≤ ±30%)	1	0	0	60,263	60,263	± 1%
	Identified (accuracy > ±30%)	0	0	0	0	0	0
	**Total Identified	1	0	0	60,263	60,263	± 1%
***Business Response	Under Investigation	0	0	0	0	0	0
	To be Implemented	0	0	0	0	0	0
	Implementation Commenced	0	0	0	0	0	0
	Implemented	1	0	0	60,263	60,263	± 1%
	Not to be Implemented	0	0	0	0	0	0

Group member/business unit/key activity/site name: **Brickworks Limited Austral Bricks Scoreby Plant**

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%)	1	555,558	0	555,558	± 1%
	Identified (accuracy > ±30%)	0	0	0	0	0
	**Total Identified	1	555,558	0	555,558	± 1%
***Business Response	Under Investigation	0	0	0	0	0
	To be Implemented	0	0	0	0	0
	Implementation Commenced	0	0	0	0	0
	Implemented	1	555,558	0	555,558	± 1%
	Not to be Implemented	0	0	0	0	0

Payback has been placed in the 0-2 year area. The net financial benefits included the plant shut down. Energy savings have been immediate.

Details of at least three significant opportunities found through EEO assessments

Table 1.4

Opportunity 1

Brickworks conducted an audit of their compressed air use for plants for all NSW plants. Leak and flow tests were conducted at the site and repairs to the system are currently being undertaken. Plant 1 at Horsley Park anticipates total energy use per annum will fall by 1,365 GJ. Plant 3 at Horsley Park anticipates total energy use per annum will fall by 448 GJ. CO₂e emissions for these sites are expected to fall by approximately 500 tonnes per annum.

Opportunity 2 *

In February 2008 Brickworks moved to cease production at Plant 2 at Horsley Park to optimize NSW production against a weak demand for building products. The plant is over 30 years old with the most recent kiln upgrade 15 years ago and although well maintained it was unlikely to ever be a low cost producer due to the high energy use in the kilns. Advances in kiln technology meant that newer kilns were far more energy efficient. Brickworks calculated that of GJ of energy (electricity and natural gas) per thousand bricks manufactured was highest at this plant, relative to other manufacturing facilities in NSW.

Brickworks were able redirect production into other plants and achieve greater energy efficiency in the production process. On a "Per Thousand Single Brick Equivalent" basis, Natural Gas efficiency improved by 5.6GJ and Electricity efficiency improved by 70 KWh's.

Opportunity 3 **

Brickworks closed brick production at the Scoresby plant in Victoria and opened the energy efficient plant at Wollert. Whilst the plant has not been in operation for a full year, initial monthly figures show energy consumption for the same levels of production has improved by 37%.

Part 4 - 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*.



Lindsay Partridge
Managing Director
Brickworks Limited