

SECOND PUBLIC REPORT

Controlling Corporation

BGC (Australia) Pty Ltd

Period to which this report relates*

Start 1 July 2008

* Energy use relates to period 1 July 2008 to 30 June 2009

End

30 December 2009

* Energy Efficiency Opportunity Assessments refers to period November 2008 to December 2009

Part 1 – Information on assessments completed to date

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

BGC (Australia) Pty Ltd completed a further three Energy Efficiency Opportunity (EEO) Assessments by the end of 2009. A total of five EEO assessments have been conducted thus far, accounting for 50% of its 2006/07 baseline energy use. BGC has elected to continue its assessments based on energy used instead of energy under its 'operational control' given the progress already achieved under its Assessment and Reporting Schedule.

Summary of new assessments

Division: Asphalt

Production facility

Period of assessment: November 2008 to December 2009

BGC Asphalt manufactures asphalt used for highways, freeways, car park and suburban road surfaces from its production plant in Hazelimere and from a mobile facility which operates throughout Western Australia. The EEO assessment was conducted over a thirteen month period using thirty months of available energy and production records. It centred on the stationary production plant which accounts for 84% of total energy use.

Division: Cement

Production facilities

Period of assessment: February 2009 to December 2009

BGC Cement manufactures general purpose and special cements from milling plants located in Canning Vale and Naval Base, Western Australia. The EEO assessment was conducted over an eleven month period using three years of available energy, operation and production records. It centred on the milling and drying processes which accounts for 95% of total energy use. An independent cement industry specialist was engaged to assist with both the analytical and opportunity generating processes.

**Division: Contracting
Long haul trucks**

Period of assessment: March 2009 to December 2009

BGC Contracting provides services to plant and major civil and mining projects predominantly in Western Australia and Queensland. The EEO Assessment was conducted over a 10 month period using two years of available energy, operation and production records. A sample of long haul vehicles which performed different tasks at different locations was assessed as representative of the broader population of long haul vehicles.

Progress from the previous reporting period

Assessments from the 2008 reporting period have progressed as summarised in Part 2B. BGC Plasterboard implemented three opportunities that were previously discounted, one of which was not assessed according to the EEO process and therefore not reported. BGC Contracting discounted two opportunities previously intended to be implemented due to a re-evaluation of priorities following several mining site closures.

Changes in the Corporate group

BGC's new *Brikmakers* clay brick manufacturing facility was commissioned during the reporting period and was added to the Assessment and Reporting Schedule. The Schedule was updated in March 2009 to better reflect timeframes involved from experience to date. The updated Schedule results in an overall assessment of more than 90% of total group energy use in the first five year cycle.

All five assessments have applied the process outlined in the EEO Assessment Handbook (2006) and Energy Savings and Measurement Guide (2008) along with advice from external consultants. To the best of BGC's knowledge the intent and requirements of the six key elements of the Energy Efficiency Opportunities Program have been met.

Energy use assessed

Group members that have been assessed.	Period over which assessment was undertaken	Energy use assessed in PJ in the current reporting year	Accuracy of energy use data (%)
Plasterboard	Jan 2008 – Dec 2008	0.30 – 0.36	± 5%
Contracting (Dump Trucks)	Apr 2008 – Dec 2008	0.72 – 0.86	± 5%
Asphalt	Nov 2008 – Dec 2009	0.04 – 0.05	± 5%
Cement	Feb 2009 – Dec 2009	0.11 – 0.13	± 5%
Contracting (Long Haul Trucks)	Mar 2009 – Dec 2009	0.27 – 0.33	± 5%
Total energy assessed		1.44 – 1.73	± 5%
Total energy use of the group in the current reporting year		3.74 – 4.51	± 5%
Total energy assessed expressed as a percentage of total current energy use		37% - 45%	± 5%

Note: Energy is reported as 'used' and not under BGC's 'operational control'

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

Part 2A - New Assessments completed during the reporting period

Group member: Asphalt

Opportunities assessed to an accuracy of $\pm 30\%$ or better						
Status of opportunities identified	Number of opportunities	Estimated energy savings per annum by payback period (GJ)			Total estimated energy savings per annum (GJ)	
		0 - < 2 years	2 - \leq 4 years	> 4 years		
Outcomes of assessment						
Business Response						
Total Identified	9	75	2,950	3,400	6,425	
Under Investigation	3	0	750	1,420	2,170	
To be Implemented	4	70	2,200	0	2,270	
Implementation Commenced	0	0	0	0	0	
Implemented	1	5	0	0	5	
Not to be Implemented	1	0	0	1,980	1,980	

Opportunities assessed to an accuracy of less than $\pm 30\%$						
Status of opportunities identified	Number of opportunities	Estimated energy savings per annum by payback period (GJ)			Total estimated energy savings per annum (GJ)	
		0 - < 2 years	2 - \leq 4 years	> 4 years		
Outcomes of assessment						
Business Response						
Total Identified	1	0	1,430	0	1,430	
Under Investigation	1	0	1,430	0	1,430	
To be Implemented	0	0	0	0	0	
Implementation Commenced	0	0	0	0	0	
Implemented	0	0	0	0	0	
Not to be Implemented	0	0	0	0	0	

Description of 3 significant opportunities**Opportunity 1: Moisture management of aggregate**

Increase the efficiency of natural gas use through enhanced management of the moisture content of input materials. The moisture content of aggregate and fine material significantly affects the quantity of fuel required to dry and heat the material. By covering the fine aggregate stockpiles it prevents the accumulation of additional moisture during periods of wet weather and promotes the drying of the stockpile through evaporation.

Opportunity 2: Drum flight replacement and design modification

Replace worn drum flights and install additional drying flights. As wear increases flights lose their "veiling efficiency" meaning that the aggregate will not spread evenly as it falls across the drum to be dried. Hot natural gas flows out of the asphalt production drum through the path of least resistance, being the area of the drum with least aggregate falling across it. Consequently some heat from the burner is not transferred to the aggregate, rather it's escaping as a result of the reduced veiling effect.

Opportunity 3: Electric motor re-wiring

Re-configure the plant electronics so that the electric motors which drive large fans can be switched on or off when required. All electric motors are currently shut down at the same time since the electrical system is wired in parallel, however not all motors are required to be operating after a shutdown. Numerous shutdowns can occur in a single day, therefore an opportunity exists to save electrical energy by only running the required electric motors following a shutdown.

Group member: Cement

Opportunities assessed to an accuracy of $\pm 30\%$ or better					
Status of opportunities identified	Number of opportunities	Estimated energy savings per annum by payback period (GJ)			Total estimated energy savings per annum (GJ)
		0 – < 2 years	2 – \leq 4 years	> 4 years	
Outcomes of assessment	Total Identified	140	150	0	290
Business Response	Under Investigation	0	150	0	150
	To be Implemented	140	0	0	140
	Implementation Commenced	0	0	0	0
	Implemented	0	0	0	0
	Not to be Implemented	0	0	0	0

Opportunities assessed to an accuracy of less than $\pm 30\%$					
Status of opportunities identified	Number of opportunities	Estimated energy savings per annum by payback period (GJ)			Total estimated energy savings per annum (GJ)
		0 – < 2 years	2 – \leq 4 years	> 4 years	
Outcomes of assessment	Total Identified	75	0	1,390	1,465
Business Response	Under Investigation	0	0	0	0
	To be Implemented	75	0	0	75
	Implementation Commenced	0	0	1,390	1,390
	Implemented	0	0	0	0
	Not to be Implemented	0	0	0	0

Note: Consultant undertaking further evaluation at time of publication, figures to be confirmed.

Description of 3 significant opportunities

Opportunity 1: Optimising cement mill throughput

Optimise cement mill throughput via a three-stage program geared to: assess circuit performance relative to international benchmarks; optimise the current state of process equipment; and develop periodic process inspection test and analysis procedures to ensure milling performance is maintained relative to baseline. It was revealed mill production:energy consumption varied up to 13% despite similar technologies and processes. Through process recalibration and optimisation, the program should result in more production for the same amount of energy used, or less energy for the same production.

Opportunity 2: Reducing natural gas usage in the loesche mill furnace

Reduce gas usage by recycling hot air from the ball mill to the vertical mill furnace. The loesche mill's gas fired furnace has a primary air fan that draws cold atmospheric air from the mill building and mixes it with fuel at the burner nozzle. 15 meters from the fan is a duct used to recirculate some of the hot air exiting the mill through the ball mill; the balance is lost, being vented to atmosphere. By fitting a new duct, some of this wasted hot air can be re-channelled to the loesche mill fan inlet.

Opportunity 3: Reducing Electricity Usage by Minimising Unnecessary Belt Conveyor Run Time

Implement a system that detects whether there is any material within the conveyor series and stops it if the belts run unloaded for more than a few minutes. It currently takes more than five minutes to check that there is no material on any of the belts and sequentially restart all of the conveyors following a stoppage. Added benefits include that the conveyor series can be restarted without checking and it should also help avoid delays in ship unloading and associated demurrage fees.

Group member: Contracting (Long Haul Vehicles)

Opportunities assessed to an accuracy of ±30% or better					
Status of opportunities identified	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	
Outcomes of assessment	3	48,765	0	0	48,765
Business Response	1	21,340	0	0	21,340
	2	27,425	0	0	27,425
Under Investigation	0	0	0	0	0
To be Implemented	0	0	0	0	0
Implementation Commenced	0	0	0	0	0
Implemented	0	0	0	0	0
Not to be Implemented	0	0	0	0	0

Description of 3 significant opportunities**Opportunity 1: Power-Take-Off (PTO) air compressors.**

Replace the stand alone diesel powered air compressor (for ancillary pump) on service trucks with a PTO item that utilises engine power to drive the compressor. This reduces diesel use, tail-pipe emissions and associated costs of operating and maintaining an additional engine. PTO air compressors will be retro-fitted when service trucks are due for major service or major repairs.

Opportunity 2: Fuel additives

Trial a fuel additive in long haul vehicles. By incorporating a burn-rate modifier into the diesel injected into the combustion chamber, the efficiency of heat release by the chemical reaction can be increased. The additive assists in maintaining the release of heat during the late stages of combustion, resulting in greater fuel economy and also reduces the products of incomplete combustion.

Opportunity 3: Operator training

The employee induction process will include training of long haul truck drivers on operating techniques to reduce diesel consumption. This opportunity extends from the previously reported training of dump truck operators and will now be adopted across all driver training modules for all vehicle operators.

Part 2B - Update of assessments reported in previous reporting periods: Plasterboard

Opportunities assessed to an accuracy of $\pm 30\%$ or better				
Status of opportunities identified	Number of opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)
		0 – < 2 years	2 – \leq 4 years	
Outcomes of assessment				
Total Identified	21 (19)	6,780 (6,780) ¹	1,540 (1,540)	8,320 (8,320)
Business Response				
Under Investigation	4 (4)	0 (0)	1,540 (1,540)	1,540 (1,540)
To be Implemented	3 (14)	2,725 (4,690)	0 (0)	2,725 (4,690)
Implementation Commenced	5 (1)	1,955 (2,085)	0 (0)	1,955 (2,085)
Implemented	8 (0)	2,100 (0)	0 (0)	2,100 (0)
Not to be Implemented	1 (0)	0 (0)	0 (0)	0 (0)

Opportunities assessed to an accuracy of less than $\pm 30\%$				
Status of opportunities identified	Number of opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)
		0 – < 2 years	2 – \leq 4 years	
Outcomes of assessment				
Total Identified	2 (2)	29,015 (29,015)	0 (0)	29,015 (29,015)
Business Response				
Under Investigation	0 (0)	0 (0)	0 (0)	0 (0)
To be Implemented	0 (0)	0 (0)	0 (0)	0 (0)
Implementation Commenced	1 (2)	29,010 (29,015)	0 (0)	29,010 (29,015)
Implemented	1 (0)	5 (0)	0 (0)	5 (0)
Not to be Implemented	0 (0)	0 (0)	0 (0)	0 (0)

(#) denotes opportunity reported in 2008

¹ Results from rounding of data

² Metering project, hence zero (direct) energy savings.

Part 2B - Update of assessments originally reported in previous reporting periods: Contracting

Opportunities assessed to an accuracy of $\pm 30\%$ or better				
Status of opportunities identified	Number of opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)
		0 - < 2 years	2 - \leq 4 years	
Outcomes of assessment	5 (5)	84,575 ² (84,595)	0 (0)	84,575 (84,595)
Business Response	0 (1)	0 (5,530)	0 (0)	0 (5,530)
	1 (3)	5,530 (42,815)	0 (0)	5,530 (42,815)
	1 (1)	36,250 (36,250)	0 (0)	36,250 (36,250)
	1 (0)	25,375 (0)	0 (0)	25,375 (0)
	2 (0)	17,420 (0)	0 (0)	17,420 (0)

Opportunities assessed to an accuracy of less than $\pm 30\%$				
Status of opportunities identified	Number of opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)
		0 - < 2 years	2 - \leq 4 years	
Outcomes of assessment	1 (1)	42,760 (42,760)	0 (0)	42,760 (42,760)
Business Response	0 (0)	0 (0)	0 (0)	0 (0)
	0 (0)	0 (0)	0 (0)	0 (0)
	0 (0)	0 (0)	0 (0)	0 (0)
	0 (0)	0 (0)	0 (0)	0 (0)
	0 (0)	0 (0)	0 (0)	0 (0)
	1 (1)	42,760 (42,760)	0 (0)	42,760 (42,760)

(#) denotes opportunity reported in 2008

¹ Two projects originally intended as 'to be implemented' in 2008 were subsequently discounted in 2009 owing to a re-evaluation of priorities following mine closures.

² Corrected for 20GJ rounding error in 2008 report

Declaration

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*.



Sam Buckeridge
MANAGING DIRECTOR