



BARRICK (PD) AUSTRALIA LTD

PUBLIC REPORT
FOR THE
ENERGY EFFICIENCY
OPPORTUNITIES ACT

DECEMBER 2010



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Introduction

Barrick (PD) Australia Ltd is a wholly owned subsidiary of Barrick Gold Corporation (**Barrick**), a leading international gold mining company with operations and projects on five continents as well as exploration activities worldwide. The company's head office is in Toronto, Canada. Barrick's goal is to minimise its environmental footprint and safeguard the environment, now and for future generations. Responsible environmental management is central to its success as a leading gold mining company and it seeks to continually improve its performance.

Barrick has a global climate change program with key stakeholders in all countries and representation from key business units. As a part of this program there is a drive to improve energy efficiency and to minimise greenhouse gas emissions. Responsible energy use benefits Barrick's bottom line, the environment and the communities where we operate.

Barrick has appointed energy champions and energy committees at all operations, whose purpose is to promote energy efficiency projects and programs. The programs include energy awareness education, the use of solar water heating, high efficiency lighting, processing improvements and fuel management programs.

The contents of this report will demonstrate Barrick's continued commitment to the Australian Government's Energy Efficiency Opportunities (EEO) Act through investing money, people and time to continually improve its business which complies with Barrick's vision and values in addition to the EEO program.

This EEO Public Report pertains to Barrick (PD) Australia Ltd and relates to the following period:

Start	1 January 2009	End	31 June 2010
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The energy use has been split into two reporting periods being 1 January to 30 June 2009 and 1 July 2009 to 30 June 2010 (the Australian financial year). The 18 month energy reporting window used for this public report reflects Barrick's change from calendar year reporting to Australian financial year reporting, to align with the *National Greenhouse and Energy Reporting Act 2007* (Australian Commonwealth) (**NGER**).



Part 1 – Information on assessments completed to date

Barrick Gold's Methodology for carrying out its assessments

Table 1.1 - Description of the way in which Barrick Gold has carried out its assessments

This report is the third public report for Barrick (PD) Australia Ltd as required under the Australian Federal Government Energy Efficiency Opportunities Legislation. The second public report, published last year, relates to the period 01 January 2008 to 31 December 2008. This report relates to the period 01 January 2009 to 31 June 2010.

Barrick (Australia Pacific) Ltd, manager of the two reporting corporations Barrick (PD) Australia Ltd and Barrick (Australia Pacific Holdings) Pty Ltd, conducted preliminary energy efficiency assessments across all of the Australian operations during the previous reporting period.

Barrick (PD) Australia Ltd continues to incorporate business improvement practises with energy management and energy efficiency. As an example of this, in 2010, the following actions were carried out:

- Existing opportunities across all Barrick sites were reviewed.
- Sites were provided with an updated opportunity list including key learnings from all sites.
- Site interviews and reviews were internally by corporate and regional personal to identify the status of existing opportunities.
- Opportunities were analysed to identify their status and new opportunities were identified.
- Barrick's Business Improvement processes were aligned with site energy teams to better integrate EEO principles with Barrick internal business processes.

The Barrick regional office in Cairns in Queensland was not assessed.

In the Australian financial year 2009-2010 Barrick (PD) Australia Limited had a total energy use 2.86 PJ or 41% of Barrick Australian Operations (7.04 PJ). During the first six months of calendar year 2009, Barrick (PD) Australia Ltd had a total energy use of 1.64 PJ. This is equivalent to 42% of the energy consumption of Barrick Australian Operations (3.99 PJ).

The 18 month energy reporting window used for this public report reflects Barrick's change from calendar year reporting to Australian financial year reporting, to align with NGER.

Energy Use Assessed

Name of Group member: **Barrick (PD) Australia Ltd**

Table 1.2a – 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	Energy use for the period 1 July 2009 to 30 June 2010 of the assessed entity (or part thereof) expressed in GJ
Granny Smith Operations	January – December 2007	1,157,690
Kanowna Operations	January – December 2007	847,118
Osborne Operations	January – December 2007	854,464
Henty Operations	January – December 2007	0 ¹ .
Total energy use of assessed entities (or part thereof)		2,859,272
Total energy use of the whole corporate group in the period 1 July 2009 to 30 June 2010		2,859,272
Total energy use of assessed entities (or part thereof) for the period 1 July 2009 to 30 June 2010 expressed as a percentage of total energy use for the period 1 July 2009 to 30 June 2010		100%

1. Henty Operations (Barrick (Henty) Limited) was sold on the 10 July 2009 to Bendigo Mining Limited, (now known as Unity Mining Limited). Unity Mining Limited will be responsible for any reporting requirements from 1 July 2009 onwards.

Table 1.2b – Energy use assessed		
Group member and/or business unit and/or key activity and/or site (or part thereof) that has had an assessment	Period over which assessment was undertaken¹	Energy use for the period 1 January 2009 to 30 June 2009

completed by 30 June 2009 (Include all assessments completed to date for the current 5 year cycle).		of the assessed entity (or part thereof) expressed in GJ²
Granny Smith Operations	January – December 2007	512,980
Kanowna Operations	January – December 2007	479,063
Osborne Operations	January – December 2007	587,923
Henty Operations	January – December 2007	59,669
Total energy use of assessed entities (or part thereof)		1639,635
Total energy use of the whole corporate group in the period 1 January 2009 to 30 June 2009		
		1,639,635
Total energy use of assessed entities (or part thereof) for the period 1 January 2009 to 30 June 2009 expressed as a percentage of total energy use for the period 1 January 2009 to 30 June 2009		
		100%

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.
3. This energy consumption figure is reflective of only the first 6 months of energy consumption for Barrick (PD) Australia Limited as the company has changed reporting dates from calendar year reporting to a financial year reporting schedule.

Accuracy of Energy Use Data

Table 1.3 – Accuracy of energy use assessed data		
Entity	% achieved	Reasons for not achieving data accuracy to within ±5%
Granny Smith Operations	5%	
Kanowna Operations	5%	
Osborne Operations	5%	
Henty Operations	5%	

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

Part 2A - New Assessments completed during the reporting period

Name of Group member: **Barrick (PD) Australia Ltd**

All site assessments took place in the last reporting period, and therefore were not required for the current reporting period. There is a continuous process of identifying new opportunities and progressing opportunities already identified.

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

Name of Group member or business unit or key activity or site: Barrick (PD) Australia Limited

Total energy use for the period 1 January 2009 to 30 June 2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

4,498,907	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 – \leq 4 years		> 4 years		
			No of Opps	GJ	No of Opps	GJ	No of Opps	GJ	
Business Response	Under Investigation	1 (-)	1	2,047 (-)	-	- (-)	-	- (-)	2,047 (-)
	To be Implemented	-	-	-	-	-	-	-	-
	Implementation Commenced	-	-	-	-	-	-	-	-
	Implemented	8 (3)	5	58,545 (29,697)	2	6,129 (6,129)	1	439	65,113 (35,827)
	Not to be Implemented	-	-	-	-	-	-	-	-
Outcomes of assessment	Total Identified	9 (3)	6	60,592 (29,697)	2	6,129 (6,129)	1	439 (-)	67,160 (35,827)

X - the bold number represents the total figure for the current reporting period

(Y) - the number in brackets is the figure for the last reporting period

Name of Group member or business unit or key activity or site: Barrick (PD) Australia Limited

Total energy use for the period 1 January 2009 to 30 June 2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

4,498,907	GJ
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Table 2.2 – Opportunities assessed to an accuracy of worse than ($>$) $\pm 30\%$			
Status of opportunities identified	Total Number of	Estimated energy savings per annum by payback period (GJ)	Total estimated energy savings per annum

		opportunities	0 – < 2 years		2 – ≤ 4 years		> 4 years		(GJ)
			No of Opps	GJ	No of Opps	GJ	No of Opps	GJ	
Business Response	Under Investigation	2 (3)	2	4,999 (7,046)	-	-	-	-	4,999 (7,046)
	To be Implemented	-	-	-	-	-	-	-	-
	Implementation Commenced	-	-	-	-	-	-	-	-
	Implemented	9 (9)	7	406,386 (360,037)	2	113 (113)	-	-	406,499 (360,150)
	Not to be Implemented	4 (2)	2	2,594 (2,594)	-	-	2	522 (-)	3,115 (2,594)
Outcomes of assessment	Total Identified	15 (14)	11	413,987 (369,677)	2	113 (113)	2	522 (-)	414,613 (369,790)

X - the bold number represents the total figure for the current reporting period

(Y) - the number in brackets is the figure for the last reporting period

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

Name of Group member: **Barrick (PD) Australia Ltd**

Table 2.3 – Description of 3 significant opportunities
Opportunity 1
Generator Schedule Optimisation The acceleration of the mine hoist was reduced as a means of reducing the peak load of the system and operating the power plant to more closely follow the system demand. The major advantage of this is that spinning reserve is reduced allowing one of the diesel generators to be switched off. The base load provided by the diesel generator that was shutdown was made up by the gas engine on site. Energy Savings: 66,602 GJ/ annum Payback Period: < 2 years
Opportunity 2
Magazine Ventilation The magazine is required to be ventilated at all times. In underground mines, this is typically achieved using a dedicated fan. In this project, the magazine ventilation was achieved by piping directly to the exhaust/vent decline using poly ducting. This has saved the installation of a 37 kW fan that would be running 24 hours a day. Energy Savings: 1,167 GJ/ annum Payback Period: < 2 years
Opportunity 3
SAG and Ball Mill Optimisation A reduction in ball charge for the ball mill has increased the overall efficiency of the grinding circuit. Energy savings are achieved through reducing the total weight of the mills (reduction in charge), therefore less energy is required for mineral processing and milling specific power (kWh/t) has also been decreased, without sacrificing production. The ball charge reduction came about as a result of computer simulation and grinding surveys. Energy Savings: 3,644 GJ/ annum Payback Period: < 2 years

Part 3 - Voluntary Contextual Information

Table 3.1 – Contextual Information

Barrick incorporates business improvement practises around carbon intensity and energy efficiency that contribute to the spirit of the EEO legislation. These practises include:

- Carbon Working Group – The committee meets regularly to strategise how Barrick can mitigate its carbon footprint
- Energy Continuous Improvement Handbook – The handbook was developed in 2008 to assist sites in the identification and assessment of energy efficiency and greenhouse gas emission reduction opportunities. This handbook was rolled out to all sites
- Energy and Mass Balance Tool – A Barrick site has developed an energy mass balance tracking and reporting tool that utilises metered energy data. This allows sites to see how their energy is consumed throughout the process and tracks all key energy waste streams.
- Renewable Energy Options – Renewable energy options are being reviewed on Barrick sites.
- Carbon Abatement Curves – there is an intention to develop carbon abatement curves for all sites in order to quantify the costs and carbon abatement potential of carbon abatement projects on sites.
- Other Activities – There are many activities which Barrick initiates which contribute to improvements in energy efficiency. Examples include:
 - *Optimisation of Pebble Crusher* – The pebble crusher consumes significant amounts of energy. Optimisation of the crusher to consume less energy has commenced. This includes optimising the gap adjustment/kW ratio, analysing liner profiles and ensuring it is choke fed at all times to ensure maximum throughput.
 - *Research and development* – Through research & development, Barrick intends to actively seek to modify its current processes with a goal of reducing energy consumption and greenhouse gas emissions, and developing lower cost, highly energy efficient, “low-carbon mines.”
 - *Energy Awareness Programs* – Creating an energy efficient culture can be developed through awareness programs. An awareness program at a mine site is to be revitalised through campaign which will involve publishing energy initiatives, having suggestion boxes, and monitoring and publishing electricity usage and targets in each area.

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*.



Regional President
24 December 2010