

MINARA RESOURCES LIMITED

Energy Efficiency Opportunities Public Report (2010 – 2011)

Part 1 - Corporation Details

Controlling Corporation

Minara Resources Limited

Period to which this report relates

From

1 July 2006

To

30 June 2011

Table 1.1 - Major Changes to Corporate Group Structure or Operations

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Minara Resources Limited advises that between 24 August 2011 and 22 November 2011, Glencore Investment Pty Ltd acquired approximately 27% of the shares in Minara Resources Limited. Glencore International AG holds the remaining 73% of the shares in Minara Resources Limited.

Minara Resources Limited remains the Controlling Corporation.

Table 1.2 – Aggregate energy assessed covered in this report

Total energy use covered by all assessments in this report	10,314,772	GJ
Total energy assessed as percentage of total energy use of the corporate group	90	%



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Declaration

Declaration of accuracy and compliance

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*.

Peter Johnston
Chief Executive Officer

A handwritten signature in black ink that reads "P. B. Johnston".

23.12.11

Part 2 - Assessment Outcomes

Table 2.1 – Assessment Details

Name of group member or business unit or key activity	Minara Resources Limited			
Total energy use in the 2010/2011 financial year	11,460,858	GJ		
Energy use assessed in this entity as a percentage of total entity energy use	90	%		
Energy use assessed in this entity as a percentage of total corporate energy use	90	%		
Accuracy of above estimates related to energy use assessed - <u>only required if not $\pm 5\%$ or better</u>		%		
Period over which assessment was undertaken	December 2007	June 2008		
Description of the way in which the entity carried out its assessment	<p>Minara Resources conducted Energy Efficiency Opportunities (EEO) assessments from December 2007 to June 2008. During this time, approximately 90% of the corporation's energy use was assessed.</p> <p>During the assessment process, workshops were conducted in all departments across the organisation. Personnel that had the ability to influence energy usage attended these. The workshops resulted in a number of energy efficiency opportunities being identified within each area. Opportunities were then recorded and prioritised, taking into account factors such as payback period, energy savings and implementation costs. Once this process was completed the appropriate business response could be enacted.</p> <p>Progress on opportunities identified during the assessment period is shown in Table 2.3.</p> <p>Minara Resources has continued to identify and implement new energy efficiency opportunities during the 2010-2011 reporting period. A summary of these is shown in Table 2.2. The majority of projects are directed at higher throughput which results in improved energy efficiency rather than reduced energy consumption. Generally, any increases in production throughput result in a sizable reduction in the energy consumption per unit of metal produced.</p> <p>Outcomes of the assessments are communicated to employees and progress of the EEO program is presented at management meetings. A summary of the information is also presented to the Board during board meetings and is included in the Minara Resources Limited Annual Report.</p>			

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Table 2.4 - Details of significant opportunities identified in the assessment

Description of Opportunity	Voluntary Information	
	<u>Bypassing the Final Control Valve in the Sulfide Precipitation Circuit</u> One of the major constraints on flow through the sulfide precipitation circuit is the flow capacity limitation through the piping and final control valve system feeding the last precipitation vessel. This flow limit can be overcome by installing a bypass line around the control valve. The installation of a bypass line around the final control valve to increase flow through the circuit has the potential to improve energy efficiency by about 64,400 GJ per annum.	Business Response
Energy Savings		64,400 GJ/yr
Greenhouse Gas Abated		3305 t CO ₂ -e
Financial Savings		Approximately \$2M
Payback Period		0 – < 2 years

Description of Opportunity	Voluntary Information	
	<u>Installing Larger Diameter Inter-Precipitation Vessel Piping in the Sulfide Precipitation Circuit</u> During operation of the sulfide precipitation circuit, scale develops within the pipework between the precipitation vessels. As this forms, it provides increased back pressure against the precipitation feed pumps which in turn reduces the capacity of these pumps over time. Increasing the pipe diameter allows higher flows to be maintained for longer, which in turn increases the nickel and cobalt recovery by reducing losses to the Tailings circuit. This project has the potential to improve energy efficiency by around 64,400 GJ per annum.	Business Response
Energy Savings		64,400 GJ/yr
Greenhouse Gas Abated		3305 t CO ₂ -e
Financial Savings		Approximately \$2M
Payback Period		0 – < 2 years



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Description of Opportunity	Voluntary Information	
<p><u>Expansion and Improvement of the Tailings Seepage Recovery System</u></p> <p>During the reporting period, the existing seepage recovery system around the Tailings facility was expanded to include an additional 30 bores. These bores were equipped with solar-panel operated pumps to reduce diesel consumption. Additionally, the pre-existing power set up consisting of three diesel-air compressors (after-cooled) was replaced with two electric compressors.</p> <p>It is estimated that this project will result in a reduction in diesel usage of approximately 262 kL per annum.</p>	Business Response	Implemented
	Energy Savings	10,144 GJ/yr
	Greenhouse Gas Abated	705 t CO ₂ -e
	Financial Savings	Approximately \$289,000
	Payback Period	2 – 4 years