Australian Government
Department of Industry

Energy Efficiency Opportunities

PUBLIC REPORT

Part 1 - Corporation details

Period to which the report relates

Start Period: 01 July 2011

End Period: 30 June 2013

Controlling corporation

Newmont Australia Pty Ltd

Table 1.1 - Major changes to corporate group structure or operations

Table 1.1 – Major changes to corporate group structure or operations in the last 12 months
None

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. All opportunities have been assessed to a level of accuracy that is commensurate with the financial investment required for implementation.	Phillip Starkle Director Date 9/12/2013

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Part 2 - Assessment outcomes

Table 2.1 – Assessment details

Name of entity	Newmont Tanami Operation

A. Total corporate energy use in the last financial year (Newmont Tanami Operation only)	2,494,701	GJ
B. Total energy use covered by assessments (Newmont Tanami Operation only)	2,494,701	GJ
C. Total percentage of energy use assessed (B ÷ A) x 100	100%	%

Description of the way in which the entity carried out its assessment:

The assessment of Newmont's Tanami Operation during 2013 represented the first assessment of Newmont's second EEO cycle. A complete assessment of this operation was first conducted in 2008. The opportunities identified in the first assessment cycle for the Tanami Operation are still included in the data provided in Table 2.2. Of the thirty five (35) total projects in Table 2.2, ten (10) have been carried over from the previous EEO cycle.

External experts were again engaged to assist the Site Energy Team with identifying and analysing potential opportunities.

The assessment involved detailed analysis of the following areas:

- Power generation
- Underground haul trucks
- Ventilation (primary and secondary)
- Ventilation refrigeration plant
- Ball mill
- BIS operations.
- Identification of obvious inefficiencies and departure from best practice
- Appropriateness of technology
- Estimate of potential savings keeping practicality and likely project cost in mind.

Table 2.2 - Energy efficiency opportunities identified in the assessment

Status of opportunities identified Newmont Tanami Operation		Total Number of opportunities	Total estimated energy savings per annum (GJ)
Business response	Implemented	4	14,037
	Implementation commenced	0	0
	To be implemented	5	38,983
	Under investigation	18	1,354,479
	Not to be implemented	8	163,679
Outcomes of assessment	Total identified	35[1]	1,571,177

[1] Ten (10) projects were carried over from being 'under investigation' at the end of the previous assessment cycle.

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Name of entity	Newmont Jundee Operation

A. Total corporate energy use in the last financial year (Newmont Jundee Operation only)	2,097,812	GJ
B. Total energy use covered by assessments (Newmont Jundee Operation only)	0	GJ
C. Total percentage of energy use assessed (B ÷ A) x 100	0%	%

Status of opportunities identified Newmont Jundee Operation		**Total Number of opportunities**	**Total estimated energy savings per annum (GJ)**
Business response	Implemented	0	0
	Implementation commenced	0	0
	To be implemented	0	0
	Under investigation	4	39,077
	Not to be implemented	0	0
Outcomes of assessment	Total identified	4[2]	39,077

[2] These four (4) projects were carried over from being 'under investigation' at the end of the previous assessment cycle.

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Name of entity	Newmont Boddington Gold

A. Total corporate energy use in the last financial year (Newmont Boddington Gold only)	6,125,006	GJ
B. Total energy use covered by assessments (Newmont Boddington Gold only)	0	GJ
C. Total percentage of energy use assessed (B ÷ A) x 100	0%	%

Status of opportunities identified Newmont Boddington Gold		**Total Number of opportunities**	**Total estimated energy savings per annum (GJ)**
Business response	Implemented	1	Unable to calculate
	Implementation commenced	0	0
	To be implemented	4	17,012
	Under investigation	4	14,540
	Not to be implemented	4	29,078
Outcomes of assessment	Total identified	13[3]	60,630

[3] Eight (8) of these projects were carried over from being 'under investigation' at the end of the previous assessment cycle. Five new projects have been identified through the application of internal systems and processes that support the ongoing identification and assessment of opportunities.

Table 2.3 - Details of significant opportunities identified in the Tanami assessment

Description of opportunity No. 1 – Spinning Reserve Management
Electricity is generated at Newmont Tanami Operations through the use of diesel generators. The spinning reserve (extra generating capacity within the existing gensets) at the DBS mine site exceeds the upper limit of 3,200 kW approximately 20% of operating time and above 3,500 kW 10% of operating time. Due to the flat efficiency curve of the gensets, the key element 3 analysis showed that reducing the instances of > 3,500 kW to zero would reduce fuel consumption by a modest 32 kL annually. However, site personnel report that reducing spinning reserve has other operational benefits and therefore this project has been selected for implementation. The reduction in diesel consumption is estimated to result in annual energy savings of 1,235 GJ, annual GHG emission reductions of 86 tonnes CO2-e and annual cost savings of $29,000. The project has a payback period of 0.7 years.

Description of opportunity No. 2 – Vent Shaft Cooling (Minimum 10°C)
In order to maintain acceptable working conditions in the underground mine, air is cooled via refrigeration plants and then sent underground via ventilation shafts. As Wet Bulb temperatures within ventilation shafts are reduced below 9°C the power consumption of the refrigeration plant increases significantly and therefore it is ultimately the temperature requirements underground that will determine the refrigeration plant power demand. This means that the measurement of temperatures in working areas, which for Wet Bulb is particularly difficult, is of the utmost importance. A study of previously recorded temperatures indicated that there was not a significant body of data for any particular location from which a temperature trend with time could be determined thus making the selection of a shaft supply temperature difficult. It is proposed that either an intense regime of testing or the use of some fixed underground measuring stations for a period would minimise the uncertainty of the underground temperature measurement. Data gathered could then be used as a basis to decide on measurement techniques, frequency and location and also for the selection of supply air temperature. Given the type of project (ie, procedural rather than requiring capital expenditure), no further calculations or analysis is possible. Rather, this projects requires a study of current operating practices to determine exactly how much scope there is to further improve operations. It is currently estimated that this project would reduce electricity consumption by 1,440 MWh per annum. This translates to annual diesel savings of 369 kL (14,230 GJ), GHG emission reductions of 990 tonnes CO2-e and annual cost savings in the order of $455,000.