Australian Government
Department of Industry

Energy Efficiency Opportunities

REVISED PUBLIC REPORT TEMPLATE

This form is a template only. It contains the minimum fields required for public reports.

You do not need to use this form if you have made the required information publicly available in another format

Part 1 - Corporation details

Period to which the report relates

Start Period: 1 July 2012 End Period: 30 June 2013

Controlling corporation

Insert the name of the controlling corporation exactly as it is registered with the EEO Program.

BM Alliance Coal Operations Pty Limited

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.	 Lucas Dow, Asset President BMA **Date** 11/12/13

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Part 2 - Assessment outcomes

It is compulsory to complete Tables 2.1 to 2.3 for each entity (subsidiary, business unit, key activity or site) that has been assessed.

Table 2.1 – Assessment details

Name of entity	Goonyella Broadmeadow Mine

A. Total corporate energy use in the last financial year	6,250,511	GJ
B. Total energy use covered by assessments	6,173,204	GJ
C. Total percentage of energy use assessed (B ÷ A) x 100	99%	%

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

1. **BMA Group (Asset level)**
   - Business-wide assessment of GHG abatement activities, including projects to reduce energy intensity (GJ per tonne of coal produced).
   - Opportunity identification workshops by key activity (open cut mining, underground mining, coal processing & port handling).
   - Cross-functional think-tank formed to oversee project evaluation according to key criteria set by senior management.
   - Study findings and short-list of projects recommended to senior management.
   - BMA GHG abatement target adopted, based on agreed projects, and measurement & verification plan developed.
   - Target projects annually reviewed.
2. **Site assessment**
   - Site-specific EEO workshop to drill down further than the asset-wide identification process:
     - Front-loaded by asset-level assessment.
     - Guided also by analysis of the site's energy use by (i) key sub-activity (eg. overburden stripping, coal mining, coal handling & processing), and (ii) equipment type (eg. draglines, excavators, dump trucks, dozers, loaders, coal handling & processing plant).
     - Opportunities ranked by selection criteria set by senior management and short-listed for evaluation.

- Short-listed opportunities modelled:
  - Purpose built model based on the mine's Life of Asset (LOA) plan.
  - Estimated reductions in energy intensity compared to 'without project' baseline and value (NPV, payback period).
  - Concept-level analysis (±30% or better where feasible given available information)
- Project list and modelling refreshed annually to reflect business decisions over the previous 12 months and the most recent BMA 5 Year Plan and mine LOA Plan.

3. Decision making

- Assessment outcomes/recommendations to senior management at the Asset level.

Table 2.2 - Energy efficiency opportunities identified in the assessment

Status of opportunities identified		Total Number of opportunities	Total estimated energy savings per annum (GJ)
Business response	Implemented	2	1,097,370
	Implementation commenced	1	38,790
	To be implemented		
	Under investigation	1	66,890
	Not to be implemented	3	322,270
Outcomes of assessment	Total identified	7	1,525,320

Please note that corporate groups **are not required** to report opportunities with a payback greater than four years. Reporting this data is voluntary.

Table 2.3 - Details of significant opportunities identified in the assessment

It is compulsory to report at least 1 example of a significant opportunity for improving the energy efficiency for the controlling corporation that has been identified in assessments. If a corporation has structured assessments to relate to business units or key activities they should report one significant opportunity for each of those entities to which the assessment applies.

Description of opportunity No. 1	Type of information to be covered
The adoption of longwall top coal caving at the Broad meadow mine significantly increases the rate of underground resource recovery and output as a proportion of the planed raw coal production of the combined Goonyella Broadmeadow mining complex. The raw coal that would otherwise be mined by open cut means would be significantly more energy intensive than the underground production which has displaced it; in terms of greenhouse gas emissions, the avoidance of fuel and electricity consumption by open cut mining, is partly, but not wholly, offset by the increased GHG intensity of the additional underground tonnage.	Equipment: Longwall mining
	Business response: Implemented
	Energy saved (GJ): 878,230
	GHG (CO2-e): 45,000
	$ saved: Confidential
	Payback period: >4yr

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Part 2 - Assessment outcomes (cont)

It is compulsory to complete Tables 2.1 to 2.3 for each entity (subsidiary, business unit, key activity or site) that has been assessed.

Table 2.1 – Assessment details

Name of entity	Blackwater Mine

A. Total corporate energy use in the last financial year	4,584,192	GJ
B. Total energy use covered by assessments	3,803,873	GJ
C. Total percentage of energy use assessed (B ÷ A) x 100	83%	%

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

1. **BMA Group (Asset level)**
   a. Business-wide assessment of GHG abatement activities, including projects to reduce energy intensity (GJ per tonne of coal produced).
   b. Opportunity identification workshops by key activity (open cut mining, underground mining, coal processing & port handling).
   c. Cross-functional think-tank formed to oversee project evaluation according to key criteria set by senior management.
   d. Study findings and short-list of projects recommended to senior management.
   e. BMA GHG abatement target adopted, based on agreed projects, and measurement & verification plan developed.
   f. Target projects annually reviewed.
2. **Site assessment**
   a. Site-specific EEO workshop to drill down further than the asset-wide identification process:
      i. Front-loaded by asset-level assessment.
      ii. Guided also by analysis of the site's energy use by (i) key sub-activity (eg. overburden stripping, coal mining, coal handling & processing), and (ii) equipment type (eg. draglines, excavators, dump trucks, dozers, loaders, coal handling & processing plant).
      iii. Opportunities ranked by selection criteria set by senior management and short-listed for evaluation.

b. Short-listed opportunities modelled:

i. Purpose built model based on the mine's Life of Asset (LOA) plan.

ii. Estimated reductions in energy intensity compared to 'without project' baseline and value (NPV, payback period).

iii. Concept-level analysis (±30% or better where feasible given available information)

c. Project list and modelling refreshed annually to reflect business decisions over the previous 12 months and the most recent BMA 5 Year Plan and mine LOA Plan.

3. Decision making

a. Assessment outcomes/recommendations to senior management at the Asset level.

Table 2.2 - Energy efficiency opportunities identified in the assessment

Status of opportunities identified		Total Number of opportunities	Total estimated energy savings per annum (GJ)
Business response	Implemented	3	396,710
	Implementation commenced	1	51,810
	To be implemented	3	801,750
	Under investigation		
	Not to be implemented	1	222,520
Outcomes of assessment	Total identified	8	1,472,790

Please note that corporate groups **are not required** to report opportunities with a payback greater than four years. Reporting this data is voluntary.

Table 2.3 - Details of significant opportunities identified in the assessment

It is compulsory to report at least 1 example of a significant opportunity for improving the energy efficiency for the controlling corporation that has been identified in assessments. If a corporation has structured assessments to relate to business units or key activities they should report one significant opportunity for each of those entities to which the assessment applies.

Description of opportunity No. 1	Type of information to be covered
The installation of microcell launders and air compressors has resulted in a sustained increase in the yield achieved by the Blackwater Mine's coal preparation plant, thereby reducing overburden removal, coal mining and fuel use per tonne of final coal produced.	Equipment type: Coal processing
	Business response: Implemented
	Energy saved (GJ): 227,410
	GHG (CO2-e): 23,000
	$ saved: Confidential
	Payback period: <2 yr

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Part 2 - Assessment outcomes (cont)

It is compulsory to complete Tables 2.1 to 2.3 for each entity (subsidiary, business unit, key activity or site) that has been assessed.

Table 2.1 – Assessment details

Name of entity	Peak Downs Mine

A. Total corporate energy use in the last financial year	4,384,365	GJ
B. Total energy use covered by assessments	3,611,435	GJ
C. Total percentage of energy use assessed (B ÷ A) x 100	82%	%

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

1. **BMA Group (Asset level)**
   a. Business-wide assessment of GHG abatement activities, including projects to reduce energy intensity (GJ per tonne of coal produced).
   b. Opportunity identification workshops by key activity (open cut mining, underground mining, coal processing & port handling).
   c. Cross-functional think-tank formed to oversee project evaluation according to key criteria set by senior management.
   d. Study findings and short-list of projects recommended to senior management.
   e. BMA GHG abatement target adopted, based on agreed projects, and measurement & verification plan developed.
   f. Target projects annually reviewed.
2. **Site assessment**
   a. Site-specific EEO workshop to drill down further than the asset-wide identification process:
      i. Front-loaded by asset-level assessment.
      ii. Guided also by analysis of the site's energy use by (i) key sub-activity (eg. overburden stripping, coal mining, coal handling & processing), and (ii) equipment type (eg. draglines, excavators, dump trucks, dozers, loaders, coal handling & processing plant).
      iii. Opportunities ranked by selection criteria set by senior management and short-listed for evaluation.

b. Short-listed opportunities modelled:

i. Purpose built model based on the mine's Life of Asset (LOA) plan.

ii. Estimated reductions in energy intensity compared to 'without project' baseline and value (NPV, payback period).

iii. Concept-level analysis (±30% or better where feasible given available information)

c. Project list and modelling refreshed annually to reflect business decisions over the previous 12 months and the most recent BMA 5 Year Plan and mine LOA Plan.

3. Decision making

a. Assessment outcomes/recommendations to senior management at the Asset level.

Table 2.2 - Energy efficiency opportunities identified in the assessment

Status of opportunities identified		Total Number of opportunities	Total estimated energy savings per annum (GJ)
Business response	Implemented		
	Implementation commenced		
	To be implemented	1	747,580
	Under investigation	1	9,190
	Not to be implemented	2	66,630
Outcomes of assessment	Total identified	4	823,400

Please note that corporate groups **are not required** to report opportunities with a payback greater than four years. Reporting this data is voluntary.

Table 2.3 - Details of significant opportunities identified in the assessment

It is compulsory to report at least 1 example of a significant opportunity for improving the energy efficiency for the controlling corporation that has been identified in assessments. If a corporation has structured assessments to relate to business units or key activities they should report one significant opportunity for each of those entities to which the assessment applies.

Description of opportunity No. 1	Type of information to be covered
Changing open cut stripping practices to reduce the amounts of (i) overburden contamination of raw coal feed to the Peak Downs preparation plan (coal dilution) and (ii) raw coal discarded in overburden spoil (coal loss). This improves the overall rate of coal resource yield, requiring fewer cubic metres of overburden to be removed and tonnes of raw coal to be mined, and hence fuel consumed, per tonne of final product.	Equipment type: Open cut mining
	Business response: To be implemented
	Energy saved (GJ): 747,580
	GHG (CO_2-e): 53,000
	$ saved: Confidential
	Payback period: <2 yr

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Part 2 - Assessment outcomes (cont)

It is compulsory to complete Tables 2.1 to 2.3 for each entity (subsidiary, business unit, key activity or site) that has been assessed.

Table 2.1 – Assessment details

Name of entity	Saraji Mine

D. Total corporate energy use in the last financial year	4,583,984	GJ
E. Total energy use covered by assessments	3,928,488	GJ
F. Total percentage of energy use assessed (B ÷ A) x 100	86%	%

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

4. BMA Group (Asset level)

a. Business-wide assessment of GHG abatement activities, including projects to reduce energy intensity (GJ per tonne of coal produced).

b. Opportunity identification workshops by key activity (open cut mining, underground mining, coal processing & port handling).

c. Cross-functional think-tank formed to oversee project evaluation according to key criteria set by senior management.

d. Study findings and short-list of projects recommended to senior management.

e. BMA GHG abatement target adopted, based on agreed projects, and measurement & verification plan developed.

f. Target projects annually reviewed.

5. Site assessment

a. Site-specific EEO workshop to drill down further than the asset-wide identification process:

i. Front-loaded by asset-level assessment.

ii. Guided also by analysis of the site's energy use by (i) key sub-activity (eg. overburden stripping, coal mining, coal handling & processing), and (ii) equipment type (eg. draglines, excavators, dump trucks, dozers, loaders, coal handling & processing plant).

iii. Opportunities ranked by selection criteria set by senior management and short-listed for evaluation.

b. Short-listed opportunities modelled:

i. Purpose built model based on the mine's Life of Asset (LOA) plan.

ii. Estimated reductions in energy intensity compared to 'without project' baseline and value (NPV, payback period).

iii. Concept-level analysis (±30% or better where feasible given available information)

c. Project list and modelling refreshed annually to reflect business decisions over the previous 12 months and the most recent BMA 5 Year Plan and mine LOA Plan.

6. Decision making

a. Assessment outcomes/recommendations to senior management at the Asset level.

Table 2.2 - Energy efficiency opportunities identified in the assessment

Status of opportunities identified		Total Number of opportunities	Total estimated energy savings per annum (GJ)
Business response	Implemented	1	166,940
	Implementation commenced	2	29,640
	To be implemented	1	41,910
	Under investigation		
	Not to be implemented	1	6,220
Outcomes of assessment	Total identified	5	244,710

Please note that corporate groups **are not required** to report opportunities with a payback greater than four years. Reporting this data is voluntary.

Table 2.3 - Details of significant opportunities identified in the assessment

It is compulsory to report at least 1 example of a significant opportunity for improving the energy efficiency for the controlling corporation that has been identified in assessments. If a corporation has structured assessments to relate to business units or key activities they should report one significant opportunity for each of those entities to which the assessment applies.

Description of opportunity No. 1	Type of information to be covered
The addition of a reflux classifier circuit to the Saraji Mine preparation plant, in place of the previous spirals, enables the plant to process lower yielding coals, which would otherwise be stockpiled or wasted. This has reduced the mine's overall strip ratio, thereby reducing the quantity fuel consumed in overburden removal per tonne of raw coal mined and final product.	Equipment type: Coal processing
	Business response: Implemented
	Energy saved (GJ): 166,940
	GHG (CO2-e): 32,000
	$ saved: Confidential
	Payback period: <4 yr