



## PUBLIC REPORT

### Controlling Corporation

Downer EDI Limited

### Period to which this report relates

Start 1 July 2008

End 30 June 2009

### Part 1 – Information on assessments completed to date

**Table 1.1 – Description of the way in which the Corporate Group (or part of it) has carried out its assessments**

The energy use reported in Downer EDI's First Energy Efficiency Opportunities (EEO) Government Report and Public Report was determined on the basis of Downer EDI having financial control of the reported facilities. Consistent with the Australian Government's intention to streamline energy reporting requirements under the EEO program and the National Greenhouse and Energy Reporting Act 2007 (NGER), the energy use information contained in this report has been determined on the basis of Downer EDI having operational control of the reported facilities.

As Downer EDI's Mining and Works divisions account for over 80 per cent of Downer EDI's total energy consumption, our assessments have been conducted across these two divisions. The energy consumption of Downer EDI will be reviewed on an ongoing basis to ensure 80 per cent of energy is assessed in the current cycle.

Within the Works Division assessments were undertaken at two sites during the current reporting period, all of which are under Downer EDI Works (DEW's) operational control. One of the sites assessed was the Redcliffe mobile plant workshop in WA which also included the WA mobile fleet. Implementation of key actions identified during the four 2008 assessments continued during this current reporting period. The assessments took the form of site visits and workshops attended by the DEW business improvement leadership team and relevant DEW personnel at each site. The workshop formats have included:

- Presenting background information, including the EEO and greenhouse gas (GHG) emissions statutory and voluntary contexts (i.e. NGER) and associated requirements
- Presenting, interpreting and discussing baseline data associated with DEW's activities on site
- Generating ideas and opportunities for reducing energy consumption and GHG emissions on site
- Prioritising the ideas and opportunities by grouping, filtering and ranking them according to their potential benefits, capital cost, technical feasibility and the level of effort and associated resources required for implementation.

Downer EDI Mining (DEDIM) undertook assessments of its activities at six mines within the reporting period. Five of these assessments were on sites under the respective client's operational control while the sixth site is under the operational control of Downer EDI Mining.

The assessments took the form of workshops attended by the DEDIM project leadership team and senior client representatives. The workshop



formats have included:

- Presenting background information, including the EEO and greenhouse gas (GHG) emissions statutory and voluntary contexts (i.e. NGER and the Greenhouse Challenge Plus program) and associated requirements
- Presenting, interpreting and discussing baseline data associated with DEDIM's activities on site
- Generating ideas and opportunities for reducing energy consumption and GHG emissions on site
- Prioritising the ideas and opportunities by grouping, filtering and ranking them according to their capital cost, technical feasibility and the level of effort and associated resources required for implementation

Downer EDI has progressed the assessment of the previously identified opportunities and of the opportunities identified in the above-mentioned workshops. The outcomes are reported in Part 2 of this report.

Downer EDI is committed to increasing the energy efficiency of its operations and will progress individual opportunities on the basis of cost and benefit, as reviewed by management. The management review of opportunities will result in a number of initiatives that will be progressed through the business planning cycle.

Downer EDI considers that it has satisfied the intent and key requirements of the EEO legislation to date and will continue to progress the identification of opportunities and the implementation thereof, particularly where they make commercial sense for our company and our clients.

**Table 1.2 – Energy use assessed<sup>3</sup>**

<b>Group member and/or business unit and/or key activity and/or site that has had an assessment completed by the end of this reporting period.</b>	<b>Period over which assessment was undertaken<sup>1</sup></b>	<b>Energy use per annum in GJ<sup>2</sup> in the current reporting year</b>
Downer EDI Mining	January 2008 – September 2008	337,286
Downer EDI Works	February 2008 – September 2009	1,753,800
<b>Total energy assessed</b>		2,091,086
<b>Total energy use of the group in the current reporting year</b>		2,441,834
<b>Total energy assessed expressed as a percentage of total current energy use</b>		85.64%



**Table 1.3 – Accuracy of energy use data**

Entity	% achieved	Reasons for not achieving data accuracy to within ±5%
Downer EDI Works	±17	Sub-contractor fuel consumption data has been collected under the operational control boundary. In some cases it has been necessary to estimate this data. However, sub-contractor fuel use is not the subject of any energy efficiency improvement opportunities identified. Downer EDI Works is working with its sub-contractors to improve the accuracy of this data.

## Downer EDI Works Information

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

#### Part 2A - New Assessments completed during the reporting period

Name of Group member or business unit or key activity or site: Downer EDI Works

Energy use of the entity during the current reporting period 1,753,800GJ

**Table 2.1 – Opportunities assessed to an accuracy of ±30% or better<sup>1</sup>**

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*	Total Identified	23	3,975			3,975
Business Response*	Under Investigation	21				Under assessment <sup>1</sup>
	To be Implemented	1	3,750			3,750
	Implementation Commenced	1	225			225
	Implemented					
	Not to be Implemented					

<sup>1</sup>Workshops have been held to identify opportunities; priority items are now being assessed in detail to accurately quantify energy savings.

**Table 2.2 - 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	None				
Business Response	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented					

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

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

Name of Group member or business unit or key activity or site: Downer EDI Works

Energy use of the entity during the current reporting period

1,753,800 GJ

**Table 2.3 - Opportunities assessed to an accuracy of  $\pm 30\%$  or better<sup>1</sup>**

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	74	14,720			14,720
Business Response*	Under Investigation	53				Under assessment <sup>1</sup>
	To be Implemented	3				Under assessment <sup>1</sup>
	Implementation Commenced	4				Under assessment <sup>1</sup>
	Implemented	9	14,720			14,720
	Not to be Implemented	5				N/A <sup>2</sup>

<sup>1</sup> Workshops have been held to identify opportunities; priority items are now being assessed in detail to accurately quantify energy savings.

<sup>2</sup> No energy saving value



**Table 2.4 - Opportunities assessed to an accuracy of less than  $\pm 30\%$ <sup>1</sup>**

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*	Total Identified	None				
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented					



## Part 2C - Details of at least three significant opportunities found through EEO assessments

**Table 2.5 – Description of 3 significant opportunities**

**Opportunity 1**

Benchmarking of asphalt plant burner fuel has enabled comparisons between plants highlighting areas of potential improvement. The improvements have been allocated to the relevant Business Improvement Teams for assessment and implementation. In this reporting period of 2008/09 this has resulted in total savings of 24.33 TJ of energy, 1,250 tonnes of CO<sub>2</sub> and \$300,000 of energy compared with the 2007/08 period.

**Opportunity 2**

The benefit of improved, formal communication between asphalt plant operators, the road surfacing crews and (occasionally) clients has been identified at many asphalt plant EEO Workshops. The resultant improved work scheduling at plants, where this has been implemented, has resulted in longer, more efficient production runs; reduced plant wastage; reduced returned asphalt (due to incorrect ordering) and a resultant reduction in energy usage.

**Opportunity 3**

Control of moisture content in raw materials has been highlighted at most asphalt plants as a priority opportunity to reduce energy consumption required in the drying process. The relationship between moisture percentage and burner fuel usage is being assessed at all asphalt plants. The relevant resultant opportunities identified for this issue include covers over storage bins and stockpile areas; provision of improved storage facilities with effective drainage; improved raw material quality and operator skill in sourcing material from stockpiles with reduced moisture etc. These are being assessed.

**Opportunity 4**

Developed Sustainability Development Plans for all the DEW businesses and these have established energy reduction targets across all operations of DEW. These target all asphalt plants, transport and waste. This work is in the information stages and is expected to be implemented for 2010 onwards.

# Downer EDI Mining Information

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

### Part 2A - New Assessments completed during the reporting period

Name of Group member or business unit or key activity or site: Downer EDI Mining

Energy use of the entity during the current reporting period 337,286GJ

**Table 2.1 – Opportunities assessed to an accuracy of ±30% or better<sup>1</sup>**

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*	Total Identified	3	3,344			3,344
Business Response*	Under Investigation	0				
	To be Implemented <sup>2</sup>	2	680			680
	Implementation Commenced <sup>2</sup>	1	2,664			2,664
	Implemented	0				
	Not to be Implemented	0				

1. The information presented in Table 2.1 relates to opportunities for potential implementation across DEDIM's business and not only at entities/sites where DEDIM has operational control
2. The "To be implemented" and "Implementation commenced" opportunities refer to plant modification trials at a single project, the outcomes of which will determine their broader implementation across the business. The estimated energy savings are specific to the trials, i.e. individual plant at one project.



**Table 2.2 - Opportunities assessed to an accuracy of less than  $\pm 30\%$ <sup>1</sup>**

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	Total Identified <sup>2</sup>	77	21,895	65,686		87,581
Business Response	Under Investigation	76	21,895	65,686		87,581
	To be Implemented	0				
	Implementation Commenced	0				
	Implemented	0				
	Not to be Implemented	1				N/A <sup>3</sup>

1. The information presented in Table 2.2 relates to opportunities for potential implementation across DEDIM's business and not only at entities/sites where DEDIM has operational control
2. The estimated energy savings relate to implementation of the identified opportunities across our business (including projects where our clients have operational control) and not solely at the projects where we have operational control.
3. This opportunity is of a governance type and has no energy saving value.

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

Name of Group member or business unit or key activity or site: Downer EDI Mining

Energy use of the entity during the current reporting period 

337,286	GJ
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**Table 2.3 - Opportunities assessed to an accuracy of  $\pm 30\%$  or better<sup>1</sup>**

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	9	23,174			23,174
Business Response*	Under Investigation	0				
	To be Implemented	1	772			772
	Implementation Commenced	6	22,402			22,402
	Implemented	2				0 <sup>1</sup>
	Not to be Implemented	0				

1. The information presented in Table 2.3 relates to opportunities for potential implementation across DEDIM's business and not only at entities/sites where DEDIM has operational control

The two implemented opportunities relate to the following: (i) a project switching from standard mineral diesel to B20 biodiesel (while there is a significant greenhouse gas benefit, there is no energy benefit); and (ii) implementing a greenhouse gas and energy key performance indicator for use in setting targets, and comparing and tracking performance.

**Table 2.4 - Opportunities assessed to an accuracy of less than  $\pm 30\%$ <sup>1</sup>**

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	23	10,357			10,357
Business Response*	Under Investigation	23	10,357			10,357
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented					

1. The information presented in Table 2.4 relates to opportunities for potential implementation across DEDIM's business and not only at entities/sites where DEDIM has operational control



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

### Part 2C - Details of at least three significant opportunities found through EEO assessments

**Table 2.5 – Description of 2 significant opportunities**

**Opportunity 1**

In 2008 DEDIM commissioned three simulators for training personnel in the operation of major plant. 581 operators have been trained in the current reporting period in haul truck and excavator operation according to DEDIM and OEM best practice procedures.

In addition, the DEDIM simulator trainers, together with several operator trainers from various DEDIM projects, undertook OEM training in fuel efficient plant operation. The training included identifying operator techniques for maximizing fuel efficiency, reducing component wear and extending equipment life, while working safely and maintaining high productivity. This information is being incorporated into the standard work practices for projects and has also been incorporated into the simulator training packages.

Toolbox talk and poster material has also been developed to assist projects with running site-based campaigns that target fuel reduction.

While it is difficult to quantify the energy savings associated with behavioural change, it is estimated that these initiatives will contribute towards an annual energy saving of some 13,500 GJ at projects where DEDIM has operational control and some 115,800 GJ at projects where DEDIM operates and operational control is held by our clients.

**Opportunity 2**

DEDIM's energy and GHG emissions unit measures are unique in the open-cut mining industry, which typically uses GJ per bank cubic metre (BCM) and tonnes of CO<sub>2</sub>-e per BCM. Using BCMS as a unit measure does not enable comparisons to be drawn between mining projects, as it does not take into account the type of mine or the operational development at a mine over time.

DEDIM's energy and GHG emissions unit measures are based on litres of fuel per tonnage moved and equivalent flat haul for our haul trucks, and on litres of fuel per total tonnage moved for our excavators and other ancillary plant. This enables us to better understand, compare, manage and report on the energy and GHG performance of our projects. The emissions unit measure has been used to set a meaningful GHG emission reduction target at one of our open-cut coal mine projects, with a particular focus on increasing operator fuel efficiency. Similar targets are being established at DEDIM's other projects. This credible unit measure has directly enabled DEDIM setting a 5% GHG emission reduction target and a 2% energy consumption reduction target for the entire business for the 2009-2010 financial year.



## Part 3 - Voluntary Contextual Information

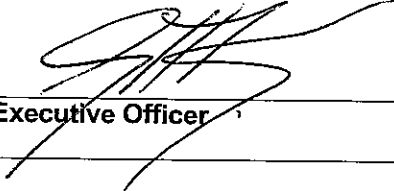
### Table 3.1 – Contextual Information

Case studies providing further information in relation to the implementation of EEO assessments are detailed in the Environment section of the Downer EDI 2009 Sustainability Report. Please see our web-site for further details [www.downeredi.com.au](http://www.downeredi.com.au)

## 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*.

  
Chief Executive Officer