Downer EDI Limited

Energy Efficiency Opportunities

1st Annual Public Report

July 2006 - June 2008

Introduction

This report is submitted in accordance with the requirements of the Australian Energy Efficiency Opportunity legislation (EEO). The period to which this report relates is 1 July 2006 to 30 June 2008.

The Australian Government's Energy Efficiency Operations program is intended to encourage large energy-using businesses to improve their energy efficiency by improving the identification, evaluation and resulting implementation of cost effective energy saving opportunities. Participation in the program is mandatory for Downer EDI Ltd (DEDI).

In early 2007, Downer EDI established its energy usage and data accuracy for the 2005/06 trigger year for EEO registration purposes (in consultation with Energetics Pty Ltd). The legislation requires Downer EDI to assess 80 per cent of its energy consumption in the first five-year EEO assessment cycle, which ends in 2011. Downer EDI is required to assess 90 per cent of its energy consumption in subsequent cycles. In the financial years FY06, FY07 and FY08, the Mining and Works divisions accounted for over 80 per cent of Downer EDI's total energy consumption. For that reason assessments have been conducted across those 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.

Summary of assessments conducted thus far

To reduce the disruption of conducting comprehensive assessments at all sites, EEO legislation allows companies with large numbers of similar operations to study a small number of representative sites or processes and then extend the findings to the remaining sites. This representative assessment approach was well-suited to the operations of the Mining Division and was consequently adopted for use.

The Mining Division conducted both central and site-based workshops, drawing on the widest possible experience base to identify opportunities relating to the reduction of diesel consumption - which accounts for 99 per cent of the division's energy use.

The process has included:

- A gap analysis of issues to be addressed in each key element area of EEO combined with an associated action plan;
- Baseline data collection and analysis;
- Workshops and opportunities raising; and
- Ranking and screening of opportunities (based on cost, energy and greenhouse savings).

This process has identified potential opportunities for cost-effective energy savings. These opportunities require further investigation to assess their implementation and potential impacts at individual project sites. Individual opportunities will be progressed on the basis of cost and benefit as reviewed by management. The management review of efficiency opportunity projects will result in a number of initiatives which will be progressed through the business planning cycle.

The Works Division has utilised the EEO program to drive the development of its continuous business improvement program. The objective of the program is to identify initiatives and implement processes to ensure efficiency opportunities relating to energy and waste are integrated into the business, reducing both the energy and cost intensity of our delivered products and services.

The program provides a framework for sites to evaluate energy saving opportunities in a manner consistent with EEO assessment requirements, while retaining the flexibility to develop projects which can be fully integrated into individual operations and business culture. This process is continual, with enhancements in data collection allowing for refined analysis and further opportunity identification.

The process requires an analysis of energy baseline data followed by opportunity identification. Opportunities identified are then selected on the basis of a whole-of-business cost and benefit, for review by management. The result of the management review is a set of efficiency opportunity projects which are carried forward in the business planning cycle.

The framework consists of an energy assessment program which includes:

- Baseline data collection and analysis;
- Management systems review;
- Identification of opportunities;
- Ranking and screening of opportunities;
- Management review, and
- Implementation of projects.

Table 1.1 shows energy use during the first year for which assessment has been conducted:

Table 1.1 - Group member/business unit/key activity/site that has been assessed	Energy use per annum in the year the assessment is completed *	Energy data accuracy (if not within ±5%) **	Reasons for not achieving data accuracy to within ±5% **
Mining	883,382	±5%	
Works' Stationary	712,061	±5%	
Total	**1,595,443**		
Total as a percentage of total energy use of the group covered by this report	**68%*** **		

* Energy Bandwidth may only be used if approved in the Assessment and Reporting Schedule.

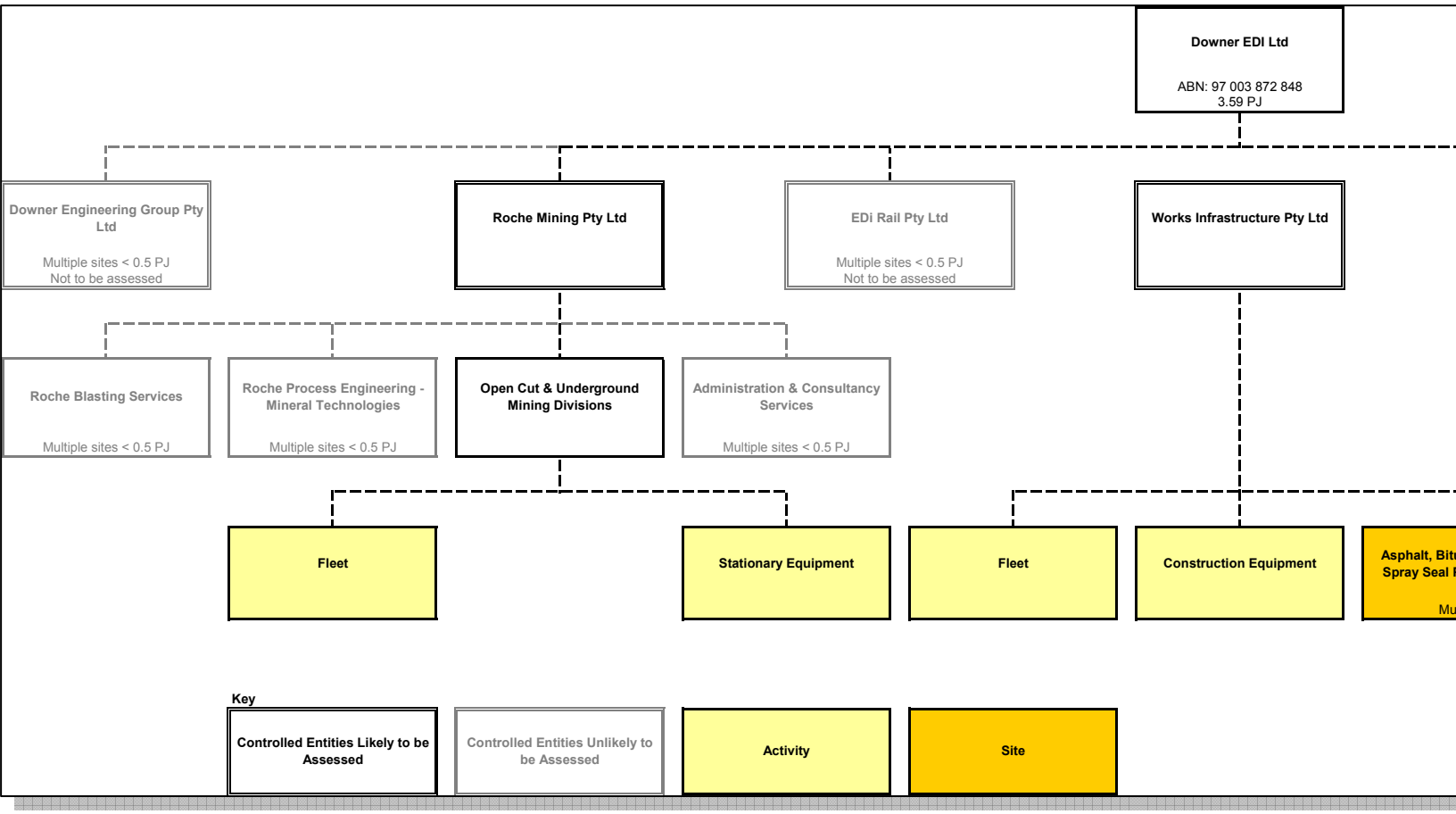
** Data accuracy not within ± 5% can only be included if approved in the Assessment and Reporting Schedule.

*** This is the percentage of the FY08 energy consumption that has been assessed to date. Further assessments in the years 2009-2011 will see this increase to beyond the necessary 80% stipulated by legislation.

Part 3 - Voluntary contextual information

The Mining Division originally undertook energy base lining at sites where it was responsible for the purchase and use of diesel (i.e. based on financial control).
However, a number of mine owners have opted to directly purchase fuel during the period that Downer EDI Mining has progressed its EEO opportunities identification process. This, combined with projects maturing, has changed the estimated energy use reportable under EEO. Further energy use reporting changes are expected as the Mining
Division delineates responsibility for energy use between itself and its clients in accordance with the National Greenhouse and Energy Reporting Systems definition of operational control. Notwithstanding, Downer EDI Mining will seek to implement cost effective energy efficiency projects at all sites where it has a presence and where it is in the interests of Downer EDI and our clients to do so.

Organisational diagram



Business response and outcomes of opportunities

Group member/business unit/key activity/site >0.5 PJ name: Downer EDI Mining

The following table outlines opportunities identified through the assessments. Savings outlined in the table may not be reflected in next year's baseline due to changes in operation or expansion projects. Further opportunities may be identified via the continuous improvement process developed in response to the EEO requirements.

Group member name: Downer EDI Mining

Table 1.2 Status of Opportunities		**Number of Opportunities**	**Estimated energy savings per annum by payback period (GJ)**		**Total estimated energy savings per annum (GJ)**	***Accuracy range (%)**
			0 – < 2 years	**2 – ≤ 4 years**		
Outcomes of assessment	Identified (accuracy ≤ ±30%)					
	Identified (accuracy > ±30%)	32	33,531		33,531	> ±30%
	**Total Identified	32				
***Business Response	Under Investigation	25	14,077		14,077	> ±30%
	To be Implemented	4	19,454		19,454	> ±30%
	Implementation Commenced	3 (refer Note 1)	0	0	0	
	Implemented	0				
	Not to be Implemented	0				

*The accuracy range for projected or actual costs, benefits and energy savings.
**You must ensure that this row is the sum of the two rows above it.
*** The data contained in each row of the business response area must total to the data contained in the 'Total Identified' row.

Note 1: The three "Implementation Commenced" projects focus primarily on improving data capture and the development of energy and greenhouse Key Performance Indicators. They provide indirect energy savings by improving the way the company tracks energy use and greenhouse emissions linked to its activities. One of the projects includes a bio-diesel trial to improve greenhouse performance but does not reduce energy use.

Details of at least three significant opportunities found through EEO assessments

(See paragraph 7 of Schedule 4 of the Regulations)

Details must include a brief description of the opportunity and may optionally include details of the costs of implementation, energy/dollar savings and any other benefits (such as greenhouse reductions).

Table 1.3

Opportunity 1

Operating Practices:

- Mining plans to moderate the cooling sequence on coal application haul trucks during shut down. Typically, haul truck engines continue running during shut down in order for certain components to cool down. This cool down period is to be reduced by 40 per cent. For each truck modified, an estimated saving of 200 litres of diesel use per annum is anticipated – equivalent to a 0.5 tCO_2-e reduction in greenhouse gas emissions per year.

Opportunity 2 *

Operating Practices:

- It is intended to develop Key Performance Indicators that more accurately reflect the level of activity undertaken at a site. These indicators will be GJ and tCO_2-e per tonne-km for energy and greenhouse gas respectively. The company is developing an "equivalent flat haul" tonne-km metric that takes into account specific gravity of materials moved, distances travelled and heights raised. A simple GJ or tCO_2-e per cubic meter metric previously used can be highly variable at a site and between sites. The new approach significantly reduces this variability and provides a more useful performance measure.

Opportunity 3 **

Training:

The company is seeking a productivity improvement through three sub-projects:

- The purchase of driver simulation software for driver training that is capable of modelling and estimating fuel usage based on driving techniques. This will avoid the need for driver training using trucks and the associated diesel consumption;
- Development of an energy/fuel-use minimisation training module which will assist drivers to operate the haul truck more efficiently; and
- Site-based campaigns targeting fuel reduction underpinned by training and systems for providing driver feedback on fuel usage.

Group member/business unit/key activity/site >0.5 PJ name: Downer EDI Works

The following table outlines opportunities identified through the assessments. Savings outlined in the table may not be reflected in next year's baseline due to changes in operation or expansion projects. Further opportunities may be identified via the continuous improvement process developed in response to the EEO requirements.

Table 1.4 Status of Opportunities		**Number of Opportunities**	**Estimated energy savings per annum by payback period (GJ)**		**Total estimated energy savings per annum (GJ)**	***Accuracy range (%)**
			0 – < 2 years	**2 – ≤ 4 years**		
Outcomes of assessment	Identified (accuracy ≤ ±30%)	9	20,922	4,752	25,674	≤ ±30%
	Identified (accuracy > ±30%)					
	**Total Identified	9	20,922	4,752	25,674	≤ ±30%
***Business Response	Under Investigation	6	10,135	4,752	14,887	≤ ±30%
	To be Implemented					
	Implementation Commenced	3	10,787		10,787	≤ ±30%
	Implemented					
	Not to be Implemented					

Note 1: Only figures with defined costs and benefits have been included in the above table. A total of 74 opportunities have been identified in opportunities raising workshops.

* Please specify each other type of energy used.

** Net Financial Benefits equals the net savings (ongoing costs and benefits) over the first four years of an opportunity's implementation, less initial investment and assessment costs (divided by 4 to convert to an annual amount).

*** The accuracy range for projected or actual costs, benefits and energy savings.

Details of at least three significant opportunities found through EEO assessments

(See paragraph 7 of Schedule 4 of the Regulations)

Details must include a brief description of the opportunity and may optionally include details of the costs of implementation, energy/dollar savings and any other benefits (such as greenhouse reductions).

Table 1.5

Project Name	Plant / Area	Business Response	Project Description
Plant run optimisation	Thermal	Implementation commenced	Improved communication between road gangs and asphalt plant to remove the need for very short run asphalt production at the Rosehill site. The plant is expected to have savings in excess of 9TJ per annum and 640tCO_2e.
Compressed air leak survey & optimisation	Compressed air	Implementation commenced	Systematic identification and repair of compressed air leaks and avoiding running the compressors in out of production hour periods at the Rosehill site is expected to achieve savings of 475 GJ and over 129tCO_2e per annum.
Insulation of Aggregate Dryer	Thermal	Under investigation	Improvements in insulation on the aggregate dryers at Strathpine and Bli Bli could achieve annual savings of 4TJ & 262tCO_2e.

Declaration

The Information in this report is, to the best of my knowledge, correct and in accordance with the requirements of the Energy Efficiency Opportunities Act 2006 and regulations.

I attest that the Board of Directors of Downer EDI Ltd have reviewed and noted this report.

Geoff Knox
Chief Executive Officer
Downer EDI Ltd
Date 17/12/08.