

# Perilya Ltd Energy Efficiency Opportunities Public Report 2011

## Part 1 - Corporation Details

Controlling Corporation

Period to which this report relates

Perilya Limited

From

1 July 2006

To

30 June 2011

### Table 1.1 - Major Changes to Corporate Group Structure or Operations

#### Table 1.1 – Major Changes to Corporate Group Structure or Operations

In 2011 Perilya Ltd the reporting structure of the National Greenhouse and Energy Reporting Act for energy consumption and carbon emissions was modified to reflect the on site operations and corporate structure. With respect to Energy Efficiency Opportunities, no change to the structure of conducting assessment due to Perilya Broken Hill, Southern Operations, accounting for over 90% of the corporate energy use. In the future this may change with several development mines under consideration.

**Table 1.2 – Aggregate energy assessed covered in this report**

|   |                |           |
|---|----------------|-----------|
| <b>Total energy use covered by all assessments in this report</b>                       | <b>582,801</b> | <b>GJ</b> |
| <b>Total energy assessed as percentage of total energy use of the corporate group*#</b> | <b>96</b>      | <b>%</b>  |

# Please note that corporations are required to assess 80% or more of their energy use in the first five-year assessment cycle and 90% or more in subsequent five-year assessment cycles. Accordingly, for those corporations with a 2005-06 trigger year (i.e. those corporations at the end of their first-five year assessment cycle), the value in "Percentage of corporation's energy use assessed" above, must be more than 80%.

**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*.

*P. Oudt*

Insert Name and Title of Signatory here  
(Chair of the Board, CEO, or Managing Director)

Date

## Part 2 - Assessment Outcomes

Table 2.1 – Assessment Details

| Name of group member or business unit or key activity  | Perilya Broken Hill, Southern Operations  |  |           |
|--|---|--|-----------|
| Total energy use in the last financial year  | 597,275   |  | GJ        |
| Energy use assessed in this entity as a percentage of total entity energy use*                         | 97.5  |  | %         |
| Energy use assessed in this entity as a percentage of total corporate energy use                       | 96  |  | %         |
| Accuracy of above estimates related to energy use assessed - <u>only required if not ±5% or better</u> | +/- 5 %   |  | %         |
| Energy use assessed based on retailer billing information.   |   |  |           |
| Period over which assessment was undertaken  | 1/7/2006  |  | 30/6/2011 |
| Description of the way in which the entity carried out its assessment                                  | Perilya Broken Hill, Southern Operations, hired an engineering consultant to conduct a detailed assessment of energy use and opportunities for improved for the whole site with a final report provided in April 2008. The results of this assessment were used by the Perilya Project Management team for decision making and communication purposes. The Perilya Project Management Team also identified and implemented additional projects on a continuous improvement basis with respect to cost and energy reduction. |  |           |

**Table 2.2 - Energy efficiency opportunities identified in the assessment**

**Perilya Broken Hill, Southern Operations**

| Business Response        | Total No. of opportunities | Estimated energy savings per annum by payback period (GJ) |        |            |        | Totals<br>(GJ) |
|--------------------------|----------------------------|---|--------|------------|--------|----------------|
|                          |                            | < 2 years   |        | >4 years   |        |                |
|                          |                            | No of Opps  | GJ     | No of Opps | GJ     |                |
| Implemented              | 11                         | 6   | 11,269 | 0          | 0      | 12,049         |
| Implementation Commenced | 3                          | 2   | 663    | 0          | 0      | 14,706         |
| To be implemented        | 0                          | 0   | 0      | 0          | 0      | 0              |
| Under Investigation      | 10                         | 5   | 5,087  | 4          | 33,764 | 1,527          |
| Not to be implemented    | 6                          | 4   | 12,607 | 0          | 0      | -12,072        |
| Outcomes of Assessment   | 30                         | 17  | 29,625 | 4          | 33,764 | 16,209         |

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

Corporate Groups are required to provide at least 3 examples of significant opportunities for improving the energy efficiency of the group that have been identified in assessments.

**Description of Opportunity 1 – Slick Line – Cement Batching Plant**

When mining and developing access underground, cavities and openings are created in the natural rock. These openings require protection and support that is gained by spraying concrete or shotcrete onto the rock surfaces. Traditionally, this was conducted by trucking the concrete or shotcrete from the surface to the underground spraying equipment that would apply the concrete to the rock surface. This creates traffic congestion, consumes energy and requires trucks to move the concrete. Installation of a Slick Line, a gravity fed concrete delivery mechanism to the underground spraying equipment, reduces energy consumption, traffic congestion and reliance on trucks, thereby reducing costs, energy and carbon emissions. The project has been implemented and saved 663 GJ and 46 tCO<sub>2</sub>e in carbon emissions per annum with a payback of 0.3 years.

**Description of Opportunity 2 – Rail Infrastructure Upgrade**

Ore concentrate is loaded into rail cars for transportation to Port Pirie. In the past, a contractor was used to shuttle empty and full rail cars to and from Broken Hill, approximately 2 kilometres away. As a result, considerable effort went into shuttling rail cars. A new rail loading facility has been built that will eliminate the need for shuttling rail cars to and from the Broken Hill township, as well as ensuring that each rail car is full to capacity. As a result, a reduction in rail trips to Port Pirie has resulted as well as a reduction in shuttle movements locally, resulting in cost reductions and energy savings.

Energy and Carbon reduction benefits include a reduction in contractor energy consumption and carbon emissions. The project has a payback for Perilya of 1.4 years.

**Description of Opportunity 3 – DC Drive Replacement**

A significant amount of electricity infrastructure within Perilya was installed early last century and has a supply frequency of 40 Hz. This creates significant issues for maintenance of electrical services as well as modification of new plant and equipment on site from 50Hz to 40 Hz. During this EEO cycle, Perilya decided to upgrade two significant ventilation fans from 40 Hz to 50 Hz. This produced an energy saving of 7.4% or 736,000 kWh resulting in emissions reductions of 655 tCO<sub>2</sub>e per year.