Australian Government
Department of Resources, Energy and Tourism

Energy Efficiency Opportunities

PUBLIC REPORT 2012

Part 1 - Corporation Details

Controlling Corporation

Automotive Holdings Group, LTD

Period to which this report relates

From 1 July 2011 To 30 June 2012

Table 1.1 - Major Changes to Corporate Group Structure or Operations

Table 1.1 – Major Changes to Corporate Group Structure or Operations
During the last 12 months, AHG acquired Diesel Motors Trucks, which was not foreshadowed in the Assessment & Reporting Schedule thus no assessment was undertaken. The introduction of the Carbon Pricing Mechanism/economic downturn has led to increased energy prices and therefore increased energy cost. This has resulted in the review of two opportunities formerly assessed as not to be implemented. One now has budget allocation for further investigation.

Table 1.2 – Aggregate energy assessed covered in this report

Total energy use covered by all assessments in this report	19,908	**GJ**
Total energy assessed as percentage of total energy use of the corporate group*#	3.59	**%**

* If this report covers only part of the corporate group, than the percentage should be computed on the total energy use for that part of the group covered in this report

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.*	Mr David Griffiths (Chairman) **Date** 22/11/13

Part 2 - Assessment Outcomes

Table 2.1 – Assessment Details

It is compulsory to complete a separate table for each group member, business unit, or key activity that has been assessed

Name of group member or business unit or key activity	Rand Transport, Homebush	
Total energy use in the last financial year	19,908	GJ
Energy use assessed in this entity as a percentage of total entity energy use*	26.94	%
Energy use assessed in this entity as a percentage of total corporate energy use	3.59	%
Accuracy of above estimates related to energy use assessed - only required if not ±5% or better		%

Period over which assessment was undertaken	January 2011	December 2011

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

The planned audit methodology for the Rand Transport Homebush site may be broken down into the following stages:

Preliminary data investigation
- ☐ Analysis and/or verification of site electricity usage to obtain a general estimate of the site base loads.
- ☐ Analysis of current electricity bills and reconciliation of the consumption charges with actual site consumption.
- ☐ Overview of general site plans to identify early energy savings opportunities.
- ☐ Early investigation of site services drawings (e.g. HVAC and Refrigeration Plant Operations and Maintenance Manuals).

Kick Off meeting
- ☐ Presentation of preliminary data analysis to Rand Transport for discussion
- ☐ Discussions of outstanding data and questions required to complete audit (e.g. Make reasonable assumptions for energy consumption of the HVAC systems and obtain data for the refrigeration plant from the SCADA system)
- ☐ Energy Management Review
- ☐ Agreement of project timelines and milestone submission dates.

Site Inspection:
- ☐ Inspection of HVAC systems and Refrigeration Plant

Interim Report

☐ Detailed investigation of site energy consumption and energy costs.

☐ Recommendations of all feasible energy saving opportunities on site, with projected savings (in energy and in financial cost). Accuracy will be dependent on the availability of key site data, but should be within an accuracy range of +/- 40% as per AS 3598 for a Level 2 energy audit.

Interim Meeting

☐ Presentation and discussion of all energy savings opportunities as identified in the Interim Report.

☐ Selection of key energy savings opportunities from the Interim Report that present the most attractive business cases for Rand Transport.

Final Report

☐ Further refining and detail with the analysis of current site energy consumption from the Interim Report.

☐ Detailed investigation into energy saving opportunities that have been identified in the Interim Meeting as business cases. Accuracy in costing and energy saving potential for these business cases will be further refined to +/-20%, as per AS 3598 and OEH agreement.

* Please note that, for individual sites that use more that 0.5PJ of energy, all energy use must be assessed (less a small proportion for non integral energy use).

Table 2.2 - Energy efficiency opportunities identified in the assessment

It is compulsory to complete a separate table for each group member, business unit, or key activity that has been assessed

Table 2.2 – Energy efficiency opportunities identified in the assessment									
Status of opportunities identified to an accuracy of better than or equal to ±30%		**Total 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**		
			No of Opps	**GJ**	**No of Opps**	**GJ**	**No of Opps**	**GJ**	
Business Response	Implemented								
	Implementation Commenced								
	To be Implemented	7	5	2020	1	29	1	263	2312
	Under Investigation								
	Not to be Implemented								
Outcomes of assessment	Total Identified								
Status of opportunities identified to an accuracy of worse than ±30%									
Business Response	Implemented								
	Implementation Commenced								
	To be Implemented								
	Under Investigation								
	Not to be Implemented								
Outcomes of assessment	Total Identified								

Please note that Corporate Groups **<u>are not required</u>** to report opportunities with a payback greater than 4 years. Reporting this data is voluntary.

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	Voluntary Information	
It is proposed to upgrade the high-side compressor SCADA system to make the interaction between these compressors more efficient. This can be achieved by operating the smaller compressor (Compressor 4) during low load scenarios and the larger compressor (Compressor 3) during high load scenarios. Compressor 4 would operate from 0% to 100% of its capacity and Compressor 3 would operate from 60% to 100% of its capacity. This will result in more even wear on the high side compressors as well as an increased efficiency for the plant.	Business Response	Automated Compressor Staging
	Energy saved (GJ)	738
	Greenhouse gas abated (CO2-e)	182 t
	$s saved	$27,000
	Payback period	2 months

Description of Opportunity	Voluntary Information	
It is proposed to install a Variable Speed Drive (VSD) on Compressor 1. The retrofit with VSD capacity control will result in increased efficiency during part load conditions compared with the existing slide valve capacity control. This will coincide with reprogramming of the SCADA system for the low-side compressors to reduce heavy start-up loads and provide a higher overall efficiency of the plant as well as producing more even wear on the compressors, reducing maintenance costs.	Business Response	Capacity Control via Compressor Variable Speed Control
	Energy saved (GJ)	385.2
	Greenhouse gas abated (CO2-e)	95 t
	$s saved	$14,000
	Payback period	2 years

Description of Opportunity	Voluntary Information	
It is proposed to install a wet bulb sensor and to reprogram the SCADA system to vary head pressure on the plant according to ambient conditions. Varying the condenser head pressure with the instantaneous plant load and ambient conditions results in a more efficient plant due to a reduction in the high side compressor power consumption. Given the temperature range seen in Sydney over a year, wet bulb temperatures vary at the site. The current system	Business Response	Variable Plant Pressure Control
	Energy saved (GJ)	709.2
	Greenhouse gas abated (CO2-e)	125 t
	$s saved	$25,000

means that the head pressure into the high side compressors is kept at the same level regardless of wet bulb conditions. It would however, be more efficient to run the compressors at the lowest head pressure possible given the ambient conditions. The installation of a wet bulb sensor and reprogramming of the SCADA system to ensure that the lowest head pressure can be used given the ambient conditions will allow significant energy savings. It should be noted however, that there will be an override in the SCADA to ensure that during defrost, high head pressure is used to ensure that defrost times are not affected.	Payback period	4 months

Please note that the "Description of the Opportunity" above should include information on the specific nature and type of opportunity, as well as information on the type of equipment and/or process involved.