

PUBLIC REPORT

Controlling Corporation

Origin Energy Limited

Period to which this report relates

Start 1/7/08

End 30/6/09

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

Origin completed all of the assessments required to meet EEO requirements in the previous reporting period. No further assessments have been undertaken.

Table 1.2 – Energy use assessed

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.	Period over which assessment was undertaken ¹	Energy use per annum in PJ ² in the current reporting year
Spring Gully	October 07 – May 08	2.3
Denison	October 07 – May 08	0.8
Peat	October 07 – May 08	0.2
Surat	October 07 – May 08	0.4
Bass Gas	October 07 – May 08	2.1
Total energy assessed (may not add due to rounding)		5.7
Total energy use of the group in the current reporting year		6.8
Total energy assessed expressed as a percentage of total current energy use		84%

1. This should be the start and finish date (month and year) for the assessment (planned assessment dates were nominated in Table 3.1 of the approved ARS).
2. Energy Bandwidth may only be used if approved in the Assessment and Reporting Schedule.

Part 1 – Information on assessments completed to date (continued)

Table 1.3 – Accuracy of energy use data		
Entity	% achieved	Reasons for not achieving data accuracy to within $\pm 5\%$
Spring Gully	$\pm 14\%$	See below
Denison	$\pm 14\%$	See below
Peat	$\pm 14\%$	See below
Surat	$\pm 14\%$	See below
Bass Gas	$\pm 14\%$	See below

The Exploration and Production business unit has an estimated accuracy of $\pm 14\%$. It is noted that the cost of energy prior to processing is low, eroding the economic case for accurate metering and that accurate metering of raw oil and gas flow from wellhead to processing plant is typically both difficult and expensive.

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: _____ N/A _____

Energy use of the entity during the current reporting period

	GJ
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Table 2.1 – Opportunities assessed to an accuracy of ±30% or better

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					
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented					

Name of Group member or business unit or key activity or site: _____

Energy use of the entity during the current reporting period

	GJ
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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 – ≤ 4 years	> 4 years	
Outcomes of assessment	Total Identified					
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: ___ Upstream Oil & Gas (Australia)

Energy use of the entity during the current reporting period

6.8	PJ
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Table 2.3 - Opportunities assessed to an accuracy of $\pm 30\%$ or better

Status of opportunities identified		Number of opportunities	Estimated energy savings per annum by payback period (PJ)			Total estimated energy savings per annum (PJ)
			0 – < 2 years	2 – \leq 4 years	> 4 years	
Outcomes of assessment*	Total Identified	9	0.23	0.001	0	0.23
	Business Response*	9	0.23	0.001	0	0.23
	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented					

All 9 identified opportunities have been progressed with Engineering investigations and in some cases, field trials. So far this has reduced the economic viability or technical feasibility of a number of the opportunities. The largest 2 of the opportunities are significant projects and both remain in the “assess” phase as evaluations continue. We are continuing to identify and evaluate additional ideas, and have a process in place to review and update our portfolio of opportunities on an annual basis.

Name of Group member or business unit or key activity or site: _____

Energy use of the entity during the current reporting period

	GJ
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Table 2.4 - 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 – ≤ 4 years	> 4 years	
Outcomes of assessment*	Total Identified					
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 2C - Details of at least three significant opportunities found through EEO assessments

Table 2.5 – Description of 3 significant opportunities

Opportunity 1

SG34: Take off fuel gas stream prior to compressors

This opportunity is identified at the Spring Gully gas processing site. Currently, the compressor fuel gas is supplied from the saleable, processed and pressurized (~13 MPa) product stream. The fuel gas is then decompressed to 1 MPa before it is fed into the compressor.

A significant amount of energy could be saved by using the inlet gas stream of the compressor as fuel gas instead of the outlet gas stream. This requires an additional small compressor to compress the fuel gas to 1 MPa. The amount of annual potential energy saving is approximately 60TJ.

Opportunity 2

D30: Replace primary membrane based on performance monitoring

This opportunity is identified at the Denison gas processing site. Raw gas from the gas well contains a mixture of CO₂ and methane. The gas processing plant uses fabric membranes to strip away the CO₂ whilst leaving the methane, which is the primary constituent of natural gas. The efficiency of the membranes degrades over time, progressively allowing more methane to escape with the separated CO₂. This results in reduced productivity of the plant as the “escaped” methane is flared, rather than made available for sale. Improved membrane performance allows a greater percentage of the methane to be retained for sale, improving the overall efficiency of the process. The schedule of replacing the primary membranes has historically been planned on a periodical basis rather than a performance basis. It is estimated that using a performance based replacement approach will reduce energy consumption by 18 TJ per year, increase plant output by approximately 400 TJ per year and reduce greenhouse gas emissions by 20,000 tonnes of CO₂-e emission per year.

Opportunity 3

D19: Use compressed air rather than fuel gas for instrument/start gas

At the Denison site, an opportunity was identified to use air instead of gas for the working of instruments and also during the startup of compressors. By decreasing the use of methane in both the above process, there is a potential annual energy saving and avoided greenhouse gas emissions of approximately 0.6TJ and 670 tonnes CO₂-e respectively.

Part 3 - Voluntary Contextual Information

Table 3.1 – Contextual Information

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Table 3.2 – Energy use expressed in Greenhouse Gas emissions and as an energy use indicator

Period of energy use _____ to _____			
Name of group member/ business unit/ key activity/site	Energy use pa (GJ)	Energy use pa (GGE)	Energy use as an indicator*
Total			


Table 3.3 - Opportunities assessed to an accuracy of ±30% or better (\$ value)

Status of opportunities identified		Number of opportunities	Estimated energy savings per annum by payback period (\$)			Total estimated energy savings per annum (\$)
			0 – < 2 years	2 – ≤ 4 years	> 4 years	
Outcomes of assessment*	Total Identified					
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented					

Part 3 - Voluntary Contextual Information (continued)

Table 3.4 – Changes in energy use as an indicator			
Name of group member/ business unit/ key activity/site	Current energy use as an indicator	Previous energy use as an indicator	Reasons for change
Total			

Part 4 - Declaration

Table 4.1 - Declaration of accuracy and compliance (mandatory information)	
<p>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 <i>Energy Efficiency Opportunities Act 2006</i> and <i>Energy Efficiency Opportunities Regulations 2006</i>.</p>	 Grant King, Chief Executive Officer.