Australian Government
Department of Industry

Energy Efficiency Opportunities

PUBLIC REPORT (REVISED TEMPLATE)

This form is a template only. It contains the minimum fields required for public reports.

You do not need to use this form if you have made the required information publicly available in another format

Part 1 - Corporation details

Period to which the report relates

Start Period: 1 July 2012

End Period: 30 June 2013

Controlling corporation

Insert the name of the controlling corporation exactly as it is registered with the EEO Program.

CS Energy Ltd

Table 1.1 - Major changes to corporate group structure or operations

Table 1.1 – Major changes to corporate group structure or operations in the last 12 months
None

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. All opportunities have been assessed to a level of accuracy that is commensurate with the financial investment required for implementation.	Alistair Brown (A EGM OPS) for Mark Moran – Executive General Manager Operations Date 18 DEC 2013

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Department of Industry

Energy Efficiency Opportunities

Part 2 - Assessment outcomes

(If you are a 2006–07 trigger corporation, you do not have to complete this section. Please move on to Part 3)

It is compulsory to complete Tables 2.1 to 2.3 for each entity (subsidiary, business unit, key activity or site) that has been assessed.

Table 2.1 – Assessment details

Name of entity	CS Energy Ltd.

A. Total corporate energy use in the last financial year	87,845,300	GJ
B. Total energy use covered by assessments	86,543,800	GJ
C. Total percentage of energy use assessed (B ÷ A) x 100	98.5	%

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

In accordance with CS Energy's approved Assessment Plan, Energy Efficiency Assessments were carried out at each site using the following basic steps:

1. The Organisations Executive Management Team was briefed on the EEO program and process prior to sign-off on the Assessment Plan.
2. An implementation plan was put in place which identified the objectives and scope of the EEO assessments, timings and resources, and communications activities.
3. For each site assessed in 2012/13 (viz., Callide B, Callide C and Kogan Creek Coal fired power stations), a background paper was first prepared, with input from an independent energy consultant, for circulation to the EEO teams (comprised of site and corporate experts and stakeholders). The background paper included for each power plant: (i) Heat and Mass balances for the main process-units; (ii) Energy performance benchmarking of recoverable energy losses and overall net thermal efficiency against the original design values and/or as-commissioned values over a 2 year period at nominal 100% and 50% of rated plant capacity; and (iii) overall summary of energy efficiency performance highlighting any significant inefficiencies and associated cost impacts.
4. An initial kick-off meeting was held with each power station site to provide context and purpose and to agree on the formal assessment process to follow.

5. Typically 1 or 2 weeks after the kick-off meeting , a formal 2 day workshop was held at each site with four basic objectives:

   (i) Establish a broad and common understanding of the Stations Energy Efficiency

   (ii) Brainstorm ideas to improving energy efficiency

   (iii) Rank the ideas based on an initial assessment of likely capital, payback and implementation risk

   (iv) Agree on ideas to be taken to the next level of detailed evaluation and opportunity identification.

6. Preceding each workshop, a formal presentation to all staff (in the Canteen) was given with opportunity for questions and answers.
7. The workshops were augmented with additional ideas gathered from CS Energy's EEO Intranet site, formally launched by the organisation in August 2013.
8. Informal meetings, discussions and follow ups were conducted after the workshops to obtain additional information and clarification on ideas and potential opportunities that were identified out of the workshops according to the ranking criteria applied: capital investment, risk and payback.
9. Finally the results of the assessments were collated into an Executive Memorandum which summarised the Energy Efficiency performance of the three sites examined, and the ideas and potential opportunities identified including their ranking, estimates of costs of implementation, and estimates of payback.

A number of opportunities for small gains in energy efficiency were identified which involved changes to operations and maintenance procedures with little or no capital investment and quick payback's, and these were quickly implemented. Other Energy Efficiency Projects involving capital investment and that satisfied the selection criteria were either: (i) implemented; (ii) agreed to be implemented based on approved miscellaneous capital for 2013/14 FY; or (iii) will be subject to the budget approval process for 2014/15 FY.

The implementation of the Energy Opportunities is being carried out via two methods: for low cost opportunities involving operations and maintenance improvements – through the standard Work Order system at each site; for larger projects to be implemented – these will be managed according to CS Energy's Project Management procedure jointly by Corporate Office and the site engineering teams.

Table 2.2 - Energy efficiency opportunities identified in the assessment

Status of opportunities identified		Total Number of opportunities	Total estimated energy savings per annum (GJ)
Business response	Implemented	11	513,000
	Implementation commenced	0	0
	To be implemented	7	147,000
	Under investigation	31	1,680,000
	Not to be implemented	0	0
Outcomes of assessment	Total identified	49	2,340,000

Please note that corporate groups **are not required** to report opportunities with a payback greater than four years. Reporting this data is voluntary.

Table 2.3 - Details of significant opportunities identified in the assessment

It is compulsory to report at least 1 example of a significant opportunity for improving the energy efficiency for the controlling corporation that has been identified in assessments. If a corporation has structured assessments to relate to business units or key activities they should report one significant opportunity for each of those entities to which the assessment applies.

Description of opportunity No. 1	Type of information to be covered
Callide B1 & B2 furnace ashing systems – modification to operational procedure on inspection doors to reduce the intrusion of tramp air and improve boiler efficiency.	Equipment type - Callide Coal Boiler
	Business response- Positive
	Energy saved (GJ/Year)- 105,000
	Greenhouse gas abated (tCO2-e)10,000
	Dollars saved: $220,000
	Payback period < 1 year

Description of opportunity No. 2 - voluntary	Type of information to be covered
Callide C – Unit 4 Cooling Water pump. Original wear rings replaced with an alternative material expected to yield a much longer service life. Initial operation over 2 months Oct/Nov 2013 indicates a significant recovery in unit efficiency (1% improvement in unit heat rate), as measured by a reduction in condenser back-pressure, which should apply over the summer months (typically 4 months per year); plus an additional capacity of around 10 MWe over the summer for 20% of the time.	Equipment type – Cooling Water Pump
	Business response – Positive
	Energy saved (GJ/Year) – 91,000
	Greenhouse gas abated (tCO2-e) 7,000
	Dollars saved: $188,000/yr
	Payback period ~ 1.6 years

Description of opportunity No 3 - voluntary	Type of information to be covered
Kogan Creek – Boiler plant. Coal blending regime modified on the Kogan Creek run-of-mine stockpile to reduce time based variability in coal quality feed to the power station boiler resulting in improved boiler stability. Fuel savings realised through reduced number of start ups per year.	Equipment type – Boiler
	Business response – Positive
	Energy saved (GJ) – 15,000
	Greenhouse gas abated (tCO2-e) 1,000
	Dollars saved: $300,000/yr as fuel saving
	Payback period 1 year

Please note that the *Description of 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.

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Energy Efficiency Opportunities

Part 3 - Transition to second cycle

This part should only be completed by 2006–07 trigger year corporations transitioning to the second cycle.

Table 3a – Details of business response to opportunities under investigation as at 30 June 2012

In December 2012, many corporations reported energy efficiency opportunities that were still under investigation as at 30 June 2012. This report should advise what your business response to these opportunities has been—implemented or not to be implemented. If you intend to further investigate these opportunities, they should be reported in the future public reports as opportunities identified in the second cycle.

For each entity that had energy efficiency opportunities that were still under investigation as at 30 June 2012, please complete the following table.

Name of entity									
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	
As reported in December 2012	Under investigation								
Business response as at 30 June 2013	Implemented								
	Not to be Implemented								
	To be evaluated/reported in the second cycle								