



## PUBLIC REPORT 2010

### Controlling Corporation

Hyne & Son Pty Limited

### Period to which this report relates

Start 1 July 2006

End 30 June 2010

Note: Instead of listing only the current year being reported (as happened in the past), these fields now indicate the total period of participation in the EEO program due to a change in the recommendations made by DRET.

### 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**

Hyne & Son Pty Limited ("Hyne") is a participant in the Australian Government's Energy Efficiency Opportunities program.

During the reporting period 1 July 2006 to 30 June 2010, Hyne has undertaken two assessments at its Tuan and Tumberumba sites. These sites accounted for 87.4% of Hyne's energy usage in the period 2009 to 2010. No new assessments are required under the first assessment cycle and the assessment and reporting schedule, however, Hyne has plans to conduct further energy assessments at other sites so as to further identify, evaluate and harness energy efficiency savings.

The assessment of ideas and opportunities identified as part of the site assessments has progressed enabling the further implementation of a range of opportunities that have yielded improvements in energy efficiency.

Energy usage for the period 1 July 2009 to 30 June 2010 has increased 41.1% as compared with the previous year due to higher operating levels at the Tuan, Tumberumba, and Imbil sites due to the improved economic operating environment and demand for products. Hyne's electrical energy costs on a per unit basis have decreased slightly over the period due to decreases in contracted usage prices which were partially offset by increased market and network fees.

There have been no significant changes to the group during the period 1 July 2009 to 30 June 2010.

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

**Table 1.2 – Energy use assessed**

Group member and/or business unit and/or key activity and/or site (or part thereof) that has had an assessment completed by 30.6.2010 (Include all assessments completed to date for the current 5 year cycle).	Period over which assessment was undertaken <sup>1</sup>	Energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) expressed in GJ <sup>2</sup>
Tuan	March 2008 to June 2008	1,022,348
Tumbarumba	July 2008 to May 2009	1,105,605
<b>Total energy use of assessed entities (or part thereof)</b>		<b>2,127,953</b>
<b>Total energy use of the whole corporate group in the period 1.7.2009 to 30.6.2010</b>		<b>2,435,862</b>
<b>Total energy use of assessed entities (or part thereof) for the period 1.7.2009 to 30.6.2010 expressed as a percentage of total energy use for the period 1.7.2009 to 30.6.2010</b>		<b>87.4%</b>

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.

**Table 1.3 – Accuracy of energy use assessed data**

Entity	% achieved	Reasons for not achieving data accuracy to within ±5%
Tuan	±20	The primary energy used in the production process at the Tuan and Tumbarumba sites is heat energy produced from biomass (88.5%) and electrical energy (10.2%). An extensive electrical sub-metering system enables high data accuracy for electrical energy usage. However, as with most industries that use biomass fuels such as wood waste or crop residues as energy sources, key factors such as weight, material density and moisture content serve to make the estimation of the actual instantaneous calorific value of the fuel very difficult.
Tumbarumba	±20	At present, it is unlikely that the accuracy of the biomass energy data is better than ±20% (Note: this data accuracy was approved in the Assessment & Reporting Schedule). Notwithstanding these measurement challenges, Hyne remains committed to improving its ability to more accurately measure its biomass fuel usage and continues to work in implementing a range of actions that can achieve this.



## Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

### Part 2A - Update of assessments reported in previous Public Reports

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

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

1,022,348	GJ
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**Table 2.1 – Opportunities assessed to an accuracy of better than or equal to (<=) ±30%**

Status of opportunities identified	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	Under Investigation							
	To be Implemented							
	Implementation Commenced							
	Implemented	5	45,094	3	2,196			47,290
	Not to be Implemented							
Outcomes of assessment	<b>Total Identified</b>	<b>5</b>	<b>45,094</b>	<b>3</b>	<b>2,196</b>			<b>47,290</b>

Note: The additional opportunities contained within this table, compared with the previous year, represent new opportunities identified by the site EEO team through their ongoing EEO duties.



**Part 2A - Update of assessments originally reported in previous Public Reports** (continued)

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

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

1,022,348	GJ
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**Table 2.2 – Opportunities assessed to an accuracy of worse than (>) ±30%**

Status of opportunities identified	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	Under Investigation	1	1	2,003				2,003	
	To be Implemented	2	2	0				0	
	Implementation Commenced	1	1	0				0	
	Implemented	4	2	22,278			2	145	22,423
	Not to be Implemented								
<b>Outcomes of assessment</b>	<b>Total Identified</b>	<b>8</b>	<b>6</b>	<b>24,281</b>			<b>2</b>	<b>145</b>	<b>24,426</b>

Note: The additional opportunities contained within this table, compared with the previous year, represent new opportunities identified by the site EEO team through their ongoing EEO duties.

**Part 2A - Update of assessments originally reported in previous Public Reports** (continued)

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

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

1,105,605	GJ
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**Table 2.3 – Opportunities assessed to an accuracy of better than or equal to (<=) ±30%**

Status of opportunities identified	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		
Under Investigation									
To be Implemented	1	1	1,370					1,370	
Implementation Commenced	2	1	14,800			1	26,065	40,865	
Implemented	2	1	3,773	1	0			3,773	
Not to be Implemented									
<b>Outcomes of assessment</b>	<b>Total Identified</b>	<b>5</b>	<b>3</b>	<b>19,943</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>26,065</b>	<b>46,008</b>

Note: The additional opportunities contained within this table, compared with the previous year, represent the progression of energy efficiency ideas into energy efficiency opportunities.



**Part 2A - Update of assessments originally reported in previous Public Reports** (continued)

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

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

1,105,605	GJ
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**Table 2.4 – Opportunities assessed to an accuracy of worse than (>) ±30%**

Status of opportunities identified	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	Under Investigation							
	To be Implemented							
	Implementation Commenced	4	191	1	538	2	588	1,317
	Implemented	4	25			1	3	28
	Not to be Implemented							
Outcomes of assessment	Total Identified	8	216	1	538	3	591	1,345

Note: The additional opportunities contained within this table, compared with the previous year, represent the progression of energy efficiency ideas into energy efficiency opportunities as well as new opportunities identified by the site EEO teams through their ongoing EEO duties.



## Part 2B - Details of at least three significant opportunities found through EEO assessments

Table 2.5 – Description of three (3) significant opportunities

### Opportunity 1

#### **Utilisation of Kiln Residual Heat:**

Kilns and reconditioners are utilised to dry and condition the green sawn material produced at the Tuan and Tumbarumba sites. Kiln drying involves the accelerated evaporation of the water from the green sawn material under controlled conditions until the moisture content reaches a desired level. To accelerate the drying process and evaporate the water in the kiln, hot air is circulated within the kiln. This air is heated by a thermal heat transfer medium which is hot oil. The reconditioner is utilised following the kiln drying process to equalize and condition the dry sawn material. As per the kiln, the reconditioner also utilises thermal energy. This energy is utilised to produce the equalizing/conditioning high humidity environment. As the kiln drying process is aided by a low humidity environment, conventionally the moisture is ejected to atmosphere from the kiln as part of the drying process (just like a clothes dryer). This moisture laden air has low grade residual energy content. Heat recovery systems are sometimes utilised in kilns for air pre-heating for low temperature drying operations but have not conventionally proven viable for ultra high temperature drying operations. Hyne investigated different ideas to improve kiln and reconditioning energy efficiency and identified an opportunity to harness and utilise the residual energy content from the moisture laden air ejected from the kiln. Through research and development trials, Hyne was able to transform this idea into an opportunity through developing a system to effectively harness this residual energy content as part of the reconditioning process. The system involves harvesting the residual heat energy and moisture from the kiln and injecting the heat energy and moisture into the reconditioner during the reconditioning process.

Trials with a kiln/reconditioner set at the Tuan site have demonstrated that the energy recovery process can reduce the energy consumed by the reconditioning process by up to 6.7 GJ per cycle.

#### **Update Tuan Site:**

This opportunity has now been implemented on four kiln/reconditioner sets at the Tuan site. This opportunity is saving approximately 46 TJ of biomass energy at Tuan.

#### **Update Tumbarumba Site:**

This opportunity has now commenced implementation on five kiln/reconditioner sets at the Tumbarumba site. This opportunity is calculated to result in a saving of approximately 26 TJ of biomass energy at Tumbarumba.



#### Opportunity 2

##### **Process Area Lighting Upgrade:**

This opportunity involved upgrading the lighting in a processing building at the Tuan site to a more energy efficient lighting system. The upgrade entailed changing out the existing 400W highbay mercury vapour lights to a more energy efficient 215W compact fluorescent lamp technology. The new lighting system achieved the same lighting level but at a significantly higher efficiency.

The opportunity is calculated to save approximately 309 GJ of electrical energy per year.

#### Opportunity 3

##### **Process Machine Control - Debarker:**

Debarkers are utilised to remove the bark from logs prior to breakdown of the log in the Green Mill. Logs are singulated and fed linearly into the debarker and the debarker has infeed rolls to guide and feed the log into the rotor. The ring, or rotor, rotates around the log as it is fed through the debarker. There are tool arms on the ring that are pressurized and this pressure squeezes the tool tips against the bark and pulls the bark away at the cambium layer. The debarker used at the Tumberumba site also has a reducing ring that can reduce the diameter of the log or remove butt flare so that the log can be safely processed by downstream milling equipment. As part of the site assessment, an opportunity was identified where it might be possible to modify the debarker machine control to actuate the reducing ring to only operate where the log shape or size requires it. An evaluation of the log mix was undertaken by the site EEO team using the 3D scanning system on the infeed to the debarker and this evaluation confirmed that only a proportion of the logs required the reducer ring. A business case was developed and the opportunity implemented. The debarker machine software control was subsequently modified so that the reducer ring is actuated on demand enabling the 250 kW motor to be shut down when not required.


The opportunity is calculated to save approximately 1,370 GJ of electrical energy per year.





## Part 3 - Declaration

Table 3.1 - Declaration of accuracy and compliance

<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>	 John McNamara Managing Director Hyne & Son Pty Limited
	<p>Date: 1/3/2011</p>