

PUBLIC REPORT TEMPLATE

Controlling Corporation

Tiwest Pty Ltd as Operations Manager for the Tiwest Joint Ventures

Period to which this report relates

Start 1 July 2008

End 30 June 2009

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

As per Tiwest's Assessment & Reporting Schedule 2006, a planned assessment of the second activity group (Chandala Processing Plant) was completed during 1 July 2008 to 30 June 2009 with results as detailed in Part 2 of this report.

Assessment processes utilised in the previous reporting period were revised to incorporate Chandala's activities whilst meeting the Energy Efficiency Opportunities (EEO) Industry Guidelines (Department of Industry, Tourism & Resources, 2006) and the Tiwest Energy Efficiency Opportunities Procedure.

Through existing resources and technical specialists, the assessment was completed in house including the facilitation of identifying opportunities. A gap analysis of existing Tiwest management systems at the time, against the requirements of the six key elements of the Assessment Framework provided a data baseline. An action plan was developed and implemented to integrate energy efficiency opportunity requirements into the corporate and site Business and Environmental Management Systems.

Chandala's EEO sub committees, involving key operations and maintenance personnel, held opportunities identification workshops throughout the reporting period. Opportunities identified were further reviewed to detail costs, benefits and payback periods for each opportunity. Implementation plans for feasible opportunities were then developed by the relevant project owner. Progress of the investigation and implementation of opportunities is tracked by the site Energy Efficiency Champion on a quarterly basis and documented on a spreadsheet.

Energy efficiency opportunity program requirements have been integrated into existing business systems or into the site environmental management system where relevant. Tiwest believes that the intent and key requirements of the Energy Efficiency Opportunities legislation has been met.

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 GJ ² in the current reporting year
Chandala Processing Plant	1 July 2008 to 30 June 2009	1,000,000 – 1,500,000
Kwinana Pigment Plant	1 July 2006 to 30 June 2008	2,000,000 – 2,500,000
Total energy assessed		3,000,000 – 3,500,000
Total energy use of the group in the current reporting year		4,000,000 – 4,500,000
Total energy assessed expressed as a percentage of total current energy use		82%

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 $\pm 5\%$
Chandala Processing Plant	$\pm 5\%$	-
Kwinana Pigment Plant	$\pm 5\%$	-

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: _____Chandala Processing Plant_____

Energy use of the entity during the current reporting period

1,000,000 – 1,500,000

GJ

Table 2.1 – 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 (GJ)			Total estimated energy savings per annum (GJ)
			0 – < 2 years	2 – \leq 4 years	> 4 years	
Outcomes of assessment*	Total Identified	1	-	-	306,000	306,000
Business Response*	Under Investigation	-	-	-	-	-
	To be Implemented	-	-	-	-	-
	Implementation Commenced	-	-	-	-	-
	Implemented	-	-	-	-	-
	Not to be Implemented	1	-	-	306,000	306,000



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

Energy use of the entity during the current reporting period

1,000,000 – 1,500,000

GJ

Table 2.2 - Opportunities assessed to an accuracy of worse than ±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	16	56,032	408,000	68,306	532,338
Business Response	Under Investigation	11	35,416	408,000	68,306	511,722
	To be Implemented	1	5,616	-	-	5,616
	Implementation Commenced	2	15,000	-	-	15,000
	Implemented	-	-	-	-	-
	Not to be Implemented	2	-	-	-	-

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: _____ Kwinana Pigment Plant _____

Energy use of the entity during the current reporting period

2,000,000 – 2,500,000	GJ
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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 (GJ)			Total estimated energy savings per annum (GJ)
			0 – < 2 years	2 – \leq 4 years	> 4 years	
Outcomes of assessment*	Total Identified	11 (9)	496,950 (483,200)	352,900 (341,100)	-	849,850 (824,300)
	Business Response*					
	Under Investigation	5	430,150	-	-	430,150
	To be Implemented	-	-	-	-	-
	Implementation Commenced	3	35,100	341,100	-	376,200
	Implemented	1	23,700	-	-	23,700
	Not to be Implemented	2	8,000	11,800	-	19,800

Please note: The total number of opportunities reported above in brackets were those reported in Tiwest's 2008 Public Report from Kwinana Pigment Plant's 1st Energy Efficiency Opportunities assessment. The additional opportunities reported this year have been identified since the assessment as part of Kwinana Pigment Plant's integrated, Environmental Management System.

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

Energy use of the entity during the current reporting period

2,000,000 – 2,500,000	GJ
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Table 2.4 - Opportunities assessed to an accuracy of worse than ±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	5 (4)	165,700 (98,700)	30,400 (30,400)	-	196,100 (129,100)
	Business Response*	Under Investigation	3	67,000	29,700	-
	To be Implemented	-	-	-	-	-
	Implementation Commenced	1	-	700	-	700
	Implemented	1	98,700	-	-	98,700
	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

Replacement of tunnel driers – (update from 2008 Public Report) At the Kwinana Pigment Plant two natural gas fired tunnel driers are currently being replaced by swirl fluidized driers (which are significantly more energy efficient) in the plant expansion. The swirl driers are due to be commissioned in early 2010 and the tunnel driers will be progressively decommissioned after. Energy savings from the new swirl fluidized driers will be calculated from the amount of natural gas being used for the individual units. Expected savings of natural gas from replacement of the tunnel driers is approximately 341,100GJ per year.

Opportunity 2

Waste heat recovery power generation - At the Chandala Process Plant, a 'feasibility' study has been completed examining the utilisation of waste heat losses from the Synthetic Rutile kiln to provide the site with its independent steam turbine power generation facility. If viable, there is potential to possibly export surplus electricity produced to the main power supply grid. Energy savings would be calculated from full provision of electricity by the independent power generation facility rather than obtaining it from the main power grid supply. Expected savings from this opportunity is approximately 306,000GJ per year. Payback however on this initiative is very marginal.

Opportunity 3

Waste heat recovery for product drying - At the Chandala Process Plant, another significant opportunity at the 'concept' stage is the utilization of waste heat from the Synthetic Rutile kiln for the drying of Heavy Mineral Concentrate, titanium and zircon products within both the Dry Mill and Synthetic Rutile plants. The proposal would entail the use of a heat exchanger in the waste gas system in order to provide an alternative energy source rather than natural gas for the drying of feed and products. Expected savings from this opportunity is approximately 408,000GJ per year.

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>	
	<p>Company Secretary</p>