



Energy Efficiency Opportunities Program Public Report for Koppers Australia

Koppers Australia – Improving our energy efficiency

Koppers Australia, with a total annual energy use of 1.66 PJ, has been actively involved in energy efficiency initiatives over the past few years. These initiatives include the NSW Government's Energy Savings Action Plan (ESAP) and the Australian Government's Energy Efficiency Opportunities (EEO) program.

In 2006 we implemented ESAP's at our two main sites – Koppers Carbon Materials and Chemicals (KCMC) in Mayfield and Continental Carbon Australia (CCA) in Kurnell. We have now also conducted a detailed Energy Efficiency Opportunities assessment at KCMC in 2007-08.

We have plans to conduct an EEO Assessment at CCA in 2009-10, which will take the assessment of our corporate energy use up to a total of 88 per cent within the first five year cycle (from July 2006). This will exceed our obligations under this program.

The energy assessment performed to date has been thorough and comprehensive. The assessment drew on existing energy management practices and a number of new initiatives, including a greater focus on the metering of energy of key processes at the site, and the use of multi-disciplinary teams. The assessment has complied with the intent and key requirements of the Energy Efficiency Opportunities program and has identified significant opportunities for achieving energy efficiencies.

The assessed element of KCMC (0.56 PJ) is responsible for 34 per cent of Koppers Australia's energy use. 23 projects have been identified at KCMC and are at various stages of implementation. In total, these projects represent potential energy savings of 118,201 GJ with up to four year payback. Of these, KCMC has implemented 9,332 GJ and intends to implement a further 6,985 GJ of energy savings. The remaining projects have at this stage only been costed to +/- 30% (in line with the requirements of the EEO program), but are being further investigated as part of KCMC's on-going Energy Management Program. The energy savings projects include the installation of cogeneration equipment, which represents nearly half of the potential energy savings. This is a high capital expenditure project, so will require more detailed investigation to determine if it is in fact a viable option.

This report includes details of assessments that were conducted during 2007-08 and provides cumulative information on the outcome of assessments and the business response since July 2006.

Koppers Australia – Koppers Carbon Materials and Chemicals (KCMC) - first report

Status of opportunities		Number of opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)	Accuracy range (%)
			0 – <2 years	2 – ≤ 4 years		
Outcome of assessment	Identified	23	41,453	76,748	118,201	±30%
Business response	Under investigation	18	39,336	62,548	101,884	±30%
	To be implemented	1	-	6,900	6,900	±30%
	Implementation commenced	1	-	85	85	±30%
	Implemented	3	2,117	7,215	9,332	±30%
	Not to be implemented	0	-	-	-	±30%

Top opportunities identified through Energy Efficiency Opportunities assessments

Koppers Carbon Materials and Chemicals (KCMC)

Cooling Tower Fan and Pump VSD Drives

During 2007 the switch room for the Cooling Tower was being replaced because of maintenance issues. A decision was made to install variable speed drives on all three draft fans and three water pumps. A control PLC was installed so the cooling water flows and return temperatures to the operating plant could be controlled at set values, allowing the pumps and fans to be slowed down to reduce power consumption in the area.

The cost of installation was \$35,000 and this resulted in reduced energy consumption of 157,080 kWh (565 GJ) per year.

Reduced circulation pumping in tank 661

As part of the energy assessment of the tank 661 area, it was noted that a 125hp pump was being run to recirculate product from the tank through a heated supply pipeline to keep the product at operating temperature. Although the tank had its own heaters, past experience had found them to be covered in sludge and therefore not able to heat the product sufficiently.

A review of the tank heating system showed that improved agitation in the tank had reduced the sludge enough to allow the heaters to operate effectively without circulation pumping. Procedures were changed to eliminate the need to operate the circulating pump to maintain the product temperature.

The cost to implement this change was zero as a procedural change only was needed, and it has resulted in energy savings of 588,000 kWh (2,117 GJ) per year and reduced maintenance and operating labour costs of \$8500 per year.

Naphthalene Reboiler burner Replacement

An upgrade of the naphthalene reboiler burner is planned for first half of 2009. The current atmospheric burner will be replaced with a forced draft burner, along with a variable speed drive combustion fan and oxygen monitoring on the stack flue gas. The upgrade will improve the energy efficiency, odour emissions, operator safety and reliability of the reboiler unit.

The cost of the upgrade will be \$255,000 and will result in electricity and fuel savings of 5,900GJ per year. Maintenance savings of \$3,000 per year are expected, and the need for an additional maintenance cost of \$40,000 if the upgrade does not proceed will be avoided.

Attestation of Board Review

The information included in this report is, to the best of my knowledge, correct and in accordance with the requirements of the Energy Efficiency Opportunities Act 2006 and Regulations.

I attest that the board of directors of Koppers Australia have reviewed and noted this report.

M.R. McCormack.

Mark McCormack
Vice President – Australian Operations
Koppers Australia Pty. Ltd.