



OVERVIEW – F1

Energy eco-efficiency opportunities in Queensland Foundries



There are a number of challenges facing the foundry industry that will require facilities to adopt more efficient practices to remain competitive and ensure the sustainability of their operations.

Electricity and fuel costs are set to rise as a result of the costs associated with greenhouse gas emissions under the proposed Carbon Pollution Reduction Scheme and competition for electricity in areas of high population growth. Increases in global demand and resource scarcity may result in unstable commodity prices. Energy usage and greenhouse gas emissions for large energy users will also come under greater scrutiny due to mandatory reporting mechanisms including the federal Energy Efficiency Opportunities (EEO) Program and the National Greenhouse and Energy Reporting System (NGERS) and the Queensland Smart Energy Savings Program.

This series of fact sheets aims to assist Foundry operators to identify and implement eco-efficient practices that will result in reduced energy consumption and associated emissions as well as better utilisation of raw materials.

What is eco-efficiency?

Eco-efficiency is a win-win business strategy that can help foundries save money while reducing their environmental impacts. It involves systematically evaluating existing practices to identify opportunities and implementing smarter solutions to increase profit and reduce, reuse, recover or recycle resources and waste. The ultimate goal is to avoid the use of a resource or eliminate the production of waste altogether.

Reasons for adopting eco-efficiency

There are many ways foundries can benefit from adopting eco-efficient practices. With many Queensland foundries now competing directly with metal casters in locations with cheap and plentiful labour, such as China and India, maintaining a competitive edge and a low triple bottom line has never been more important. Many of the eco-efficiency opportunities discussed in this series of factsheets not only help to reduce operating costs and improve profitability, but also assist sites to:

- comply with tightening air emissions standards
- help develop resource, water and energy efficiency management plans and waste minimisation plans
- reduce costs of resources such as energy and water while maintaining or increasing productivity



- improve relations with environmental regulators, through improved environmental performance and proactive response to environmental issues
- create an environmentally friendly image and gain a competitive edge
- add value in the adoption of an environmental management system.

The factsheets in this series have been divided into six key areas where potential energy eco-efficiency gains have been identified:

F2A – Melting efficiency – Charge preparation, energy management and metal reduction

F2B – Melting efficiency – Furnace efficiency

F3 – Good housekeeping

F4 – Compressed air efficiency

F5 – Motor, pump and fan efficiency

F6 – Lighting efficiency

F7 – Boiler efficiency

F8 – Air conditioning efficiency

Two additional factsheets have also been included to assist foundry operators in response to water restrictions within Queensland and rising waste disposal costs.

F9 – Cooling tower efficiency

F10 – Reuse options for foundry waste sand

The following companies assisted with the preparation of these fact sheets on eco-efficiency opportunities for Queensland Foundries.



This series of fact sheets provides examples and suggestions to the modern foundry operator on how to achieve both economic and environmental benefits from eco-efficiency. Visit the project website www.ecoefficiency.com.au for more ideas and case studies.