

# Dobbie Dico

## Western Australia

### FIEE Toolkit

Dobbie Dico is a customer-focused, privately owned casting foundry, located in Malaga, Perth that specialises in the manufacture of high quality ferrous and non-ferrous valves for the civil water industry, along with general castings for rail and resource sectors. The company has been operating since 1940, and moved to its current location 14 years ago.

Site production is based around four induction furnaces which melt predominately ferrous metal (split 60-40 between steel and iron respectively) at approximately 20t per week, with a small volume of non-ferrous metal (gunmetal and aluminium) equating to approximately 2t per month. The production schedule is split evenly between repetition and jobbing castings.

In 2013 Dobbie Dico participated in the Foundry Industry Energy Efficiency (FIEE) Toolkit program funded by the Australian Government under the Energy Efficiency Information Grants program to help them identify energy efficiency opportunities within their business. Through the program the following opportunity was identified.

## Electricity monitoring

A key issue for Dobbie Dico as it seeks to ramp up efforts in energy efficiency is the currently limited visibility of individual process area loads. At the business's current stage of development and operating complexity, implementation of an integrated energy monitoring system could provide significant value in helping to better manage (and minimise) electricity costs. Using such a system enables the ability to track performance in real time and drill down to individual areas of interest. While monitoring alone does not improve performance, it is typical that savings up to 10% or more can be made through the awareness it creates.

Monitoring over time can enable the establishment of meaningful benchmarks, identify faults and inefficiencies (including degraded equipment performance), realise new opportunities to optimise daily loading and effectively manage the risks of energy/demand peaks.

Permanent electricity sub-metering often includes a central hub/controller for maximum flexibility/expandability and real-time data capability. Connected to this would be one or more meters fit to specific distribution boards. While greater submetering capability provides greater visibility, many subsystems (such as individual machining lines or lighting) may not warrant individual permanent metering or can be closely estimated by subtraction between overall and major submeter points. Careful design in this way can help save cost. A suggest order of priority for sub-metering at Dobbie Dico that may similarly been applied at other sites would include:

1. each main switchboard with particular focus on the main feed to the 1.8t and 1t furnaces
2. individual smaller furnaces (600kg and 120kg furnaces)
3. air compressors and heat treatment ovens (as scope and cost allows)

Using the monitoring information, Dobbie Dico can begin to build their energy management capacity in its day-to-day staff practices as well. Regular updates with staff using electricity monitoring summaries demonstrates the business's interest in continuous improvement and offers a visual means to illustrate the impact of staff performance in different areas. It has been observed in the foundry industry that integrating energy awareness into regular toolbox meeting can lead to substantial energy savings by giving staff at the ground level a chance to highlight issues and identify, pick-up or provide feedback on potential opportunities.