MONASH University

MONASH INDUSTRY TEAM INITIATIVE (MITI)

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Heat and Energy Demand Assessment

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FONTERRA STANHOPE:

Fonterra's Stanhope site, located 190km north of Melbourne, is a state of the art dairy factory that produces cheese, whey powder, ricotta and many other dairy products. After a fire in 2014, cheese manufacturing recommenced at the site in 2017. Further, upgrades and across the site are underway to expand dairy production.

KEY FINDINGS:

- Utility usage has increased after commissioning of the cheese plant in 2017
- Utility prices have increased sharply in recent years
- Boilers are operating at low rates
- Refrigeration consumes most of the site's electricity
- Equipment, lighting and motors are operating when not required

KEY RECOMMENDATIONS:

- Implement a new control system on boilers to increase efficiency
- Reduce the load on less-efficient boilers to increase the use of newer, more efficient boilers
- Safely increasing temperatures of cool rooms to reduce the refrigeration loads required
- Use of thermal curtains to reduce the amount of refrigeration required in cool rooms
- Installation of light sensors in the cheese factory to reduce unnecessary continuous running of 70+ industrial sized lights

PROJECT OUTLINE:

An energy audit on Stanhope's gas and electricity requirements was undertaken. Utility requirements across the site were tracked and mapped. In doing so, energy intensive processes were mapped and opportunities for utility optimisation were identified.

KEY LEARNINGS

- How to work efficiently as a team based on individual strengths, weaknesses and skills
- Deviation of real-world manufacturing processes from ideal scenarios
- Insights into production planning and maintenance
- Effective communication with operators, engineers, plant managers, maintenance staff and electricians
- Practical constraints and considerations when proposing changes to operations

A project initiative of the Victorian dairy industry proudly sponsored by the Gardiner Dairy Foundation in partnership with Monash University

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