

# MONASH INDUSTRY TEAM INITIATIVE (MITI)

## Bega Cheese - Assessment of Boiler Technologies and Efficiencies

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### BACKGROUND

Bega was founded in 1899 and is the lead supplier of cheese in the Australian market. There are multiple sites around Australia that produce a range of products including cheddar, stringers, vegemite, peanut butter, baby formula and many more.

Lagoon Street is the Dairy Products Unit (DPU) of Bega Cheese. At DPU, butter, cheddar, mozzarella and whey powder are made and each of these products require steam to be produced. This steam is produced using a wood-fired boiler, which underwent upgrades at DPU a few years ago.



### SCOPE

The efficiency of the wood-fired boiler was to be calculated and compared with the efficiency prior to the recent upgrades that occurred. Two fuel sources – sawdust and woodchip - for the boiler were also to be compared in their efficiency as well as cost.

### FINDINGS

- The efficiency of the boiler had improved by 14% since the upgrades occurred
- Woodchip, even though it had an expensive upfront cost, proved to be the more cost effective fuel source due to its efficiency
- By using woodchip instead of sawdust, DPU would save a substantial operational cost

### RECOMMENDATIONS

- Estimate the future costs of fuel, if price difference remains similar:
- Ensure a woodchip supplier can provide enough fuel to DPU
- Upgrade the feeding system to the boiler to prevent woodchips from getting stuck
- Use woodchips as a fuel source instead of sawdust provides DPU with substantial operational savings

### EXECUTION OF PROJECT

- Understanding the boiler
- Data collection
- Laboratory testing
- Calculations
- Comparison

