

Stage 1

Services and Waste Insights, Reduction and
Optimisation Innovation

Project Code
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Project Description

Utility costs in Australia are a substantial cost of doing business of an Australian meat processing business, as depicted in Table 1 below. The recent Cost to Operate report noted that utility costs are approximately 6% of total costs excluding cattle purchases and are significantly higher than some of the other countries that the processor compete with on the export market.

Table 1: Operating cost structure summary, beef processors, Australia, United States, Brazil and Argentina, 2015-16

Cost category	Australia		United States ¹		Brazil		Argentina	
	Cost per head (AU\$)	As % of total costs (excl. livestock purchases)	Cost per head (AU\$)	As % of total costs (excl. livestock purchases)	Cost per head (AU\$)	As % of total costs (excl. livestock purchases)	Cost per head (AU\$)	As % of total costs (excl. livestock purchases)
Labour-related costs	\$210.54	58.4%	\$129.46	44.6%	\$75.63	43.9%	\$88.31	42.9%
Utilities-related costs	\$21.62	6.0%	\$12.26	4.2%	\$19.93	11.6%	\$13.05	6.3%
Certification-related costs	\$7.29	2.0%	\$1.49	0.5%	\$0.52	0.3%	\$2.28	1.1%
Total (excl. livestock costs)	\$360.62	100.0%	\$290.15	100.0%	\$172.29	100.0%	\$205.96	100.0%
<i>Cost per kg HSCW</i>	<i>\$1.22</i>		<i>\$0.80</i>		<i>\$0.70</i>		<i>\$0.92</i>	

¹ The certification/audit costs for the United States refer only to those subject to government regulation. Unregulated (external) certification costs are, however, included in total costs.

Australian processors need to review, monitor, and implement changes to reduce their cost of utilities to remain competitive on the global market. By installing a system to capture water usage at the site, processor management will have the tools to target areas for improvement.

The project purchased and installed meters on critical incoming services and discharge points, where they are currently missing. Insights gathered from the project will both inform the processor (and AMPC) as to the various ways to reduce (wastage) and optimise the use (scheduling) of water services across the site. This project may lead to further expansion of monitoring services at the processor.

The objective is to:

- Install digital meters on all critical water service incoming and discharge points with reporting back to a single location.
- Insights developed that identify leakage/waste, schedule changes and future distribution investments required by both processor and AMPC core R&D activities.

- Obtain data to inform environmental performance reporting for the red meat processing sector as part of AMPC Environmental Performance Review and Industry Sustainability Frameworks.

Project Outcome

Installation of Water Meters

Installation of water meters has allowed the plant and management team an understanding of water usage on site with what is coming in from the bores vs. going out for each individual area and process in production. Furthermore, the installation of water meters has allowed the management team to utilise the data for water modelling for another facility which has allowed the company to make data driven decisions for the company’s trade waste agreement and decrease the peak forecast by about 30% for incoming water.

Identification of Opportunities

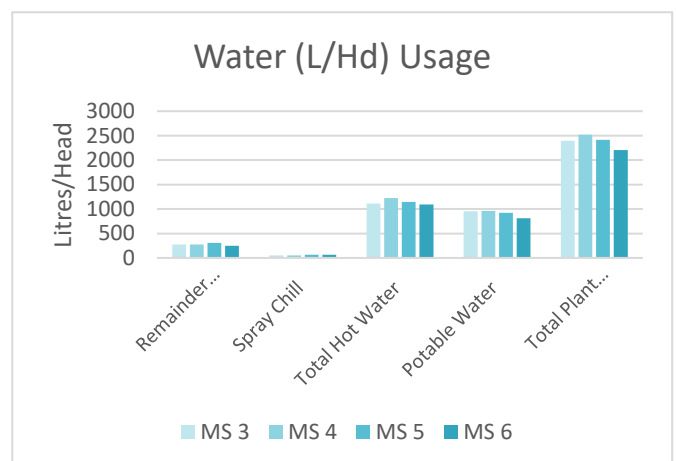
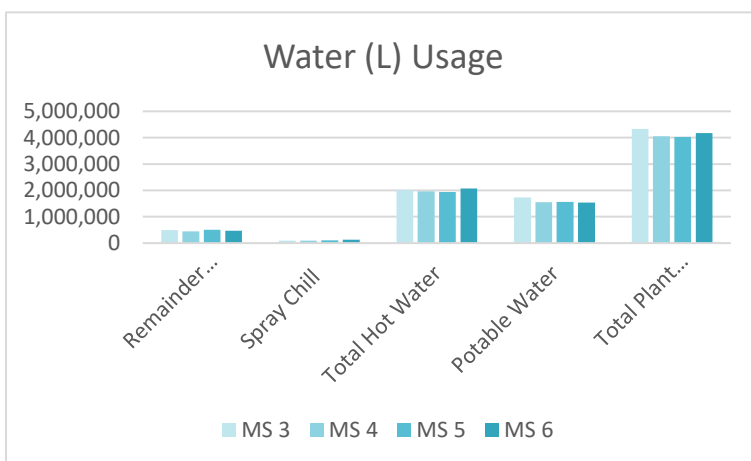
Installation of water meters has provided the team the opportunity to identify key opportunities to target throughout the project. Key opportunities identified for water usage reduction during the project were umbrella wash, wash down, utilisation of backwash water and the carcase wash. The opportunity to understand and identify water usage with the umbrella has seen the water usage reduce to 110,000L per week on average – a 72.5% decrease in total water usage for this process. The carcase wash time was decreased to 10 seconds per body which allowed the water usage reduced to approximately 107,000L per week from 160,000L on average per week.

Dashboards and Data Driven Decisions/Opportunities

A series of dashboards have been developed by an external service provider in Salesforce. The dashboard was designed to provide insights into the overall water usage at the site. The data is automatically extracted from the SCADA system each night to update the dashboards. Data driven decisions have allowed for additional planning and ways to recycle and utilise water at other sites.

Reduction in overall water usage

At the initiation of the project, the plant was utilising approximately 4,800,000 litres of water per week. There has been an average total plant consumption reduction by 10-15% over the project. The potable water has had the largest reduction over the project.



Benefit for Industry

Installation of a system to capture water usage provides tools and insights for processors to review, monitor and implement changes to reduce (wastage) and optimise the use of water services across the site/s. Target areas for

improvement and optimisation can be identified. Furthermore, the project allows key data to be captured to contribute and inform the environmental performance reporting for the red meat sector.