Snapshot Report

AMPC
AUSTRALIAN MEAT PROCESSOR CORPORATION

Services Insights, Reduction and Optimisation

Project code
2021-1012

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Project description

This project aimed to address a critical challenge in the red meat processing industry: the excessive and inefficient use of utilities, particularly water, resulting in increased operational costs and environmental management that comes with excessive water use. Traditionally, facilities have relied on retrospective data, limiting their ability to make real-time decisions for leak detection and process optimisation. This project sought to fill that gap by designing and implementing a live utility monitoring and optimisation system.

The goal was to implement a project for meat processors to reduce water, energy, and chemicals usage by installing smart meters, using real-time data dashboards, and changing operational behaviour. By doing so, the project would cut costs, reduce waste, and help facilities become more sustainable and efficient. The tools and outcomes developed through this work are intended not only for the pilot facility but also as a replicable model for the broader industry.

Project content

The project was conducted in multiple stages:

Selection of Monitoring Areas: Focus was placed on water types (82°C, 42°C, potable, and recycled) and areas with historically high usage or leak risk (e.g., slaughter floors, and cleaning).

Meter Installation: Flow meters were installed across incoming and discharge points. These meters fed data into the facility's SCADA system, allowing for live daily monitoring. Several meters required replacement due to faults.

Data Integration and Dashboard Creation: SCADA data was linked to interactive Power BI dashboards. These provided both real-time and retrospective insights, flow trends, litres per carcass processed, and alerts for abnormal usage.

Process Changes and Technology Trials: Operational improvements included water-saving valves, automated chemical dosing pumps, and upgrades to basin infrastructure based on identification of high-water usage areas.

Staff Training and Cultural Engagement: Weekly reports and visual dashboards were developed to empower operational staff to make informed decisions, detect issues quickly, and foster a culture of conservation.

Iterative Improvements: The project adapted over time, resolving meter faults, refining dashboards, and preparing for future allocation of utility usage to specific production lines.

Project outcomes

The project delivered strong evidence that **real-time utility monitoring**, when paired with targeted operational changes, leads to measurable efficiency gains in meat processing. Key outcomes include:

Water Savings:

- 43% reduction in 42°C water use, providing a saving of over 18 million litres annually.
- 15% reduction in 82°C hot water use.
- 12–15% decrease in wastewater volumes, lowering treatment and disposal costs.

Cost Reductions: Weekly savings of ~$1,800 in chemical use through automated dosing tied to water flow, significantly contributing to project payback.

Behavioural Shift: A cultural move toward water efficiency, supported by dashboard visibility and regular performance reporting, enabled staff to act on usage trends and leaks.

Risk and Resource Management: Live monitoring enabled early leak detection and reduced environmental risk, while also supporting continuous improvement and operational resilience.

Tangible Outputs for Stakeholders

Power BI Dashboards: User-friendly tools for tracking water usage and identifying inefficiencies in real time, available at both summary and detailed levels allowed for concise water usage reduction strategies.

SCADA-Integrated Flow Monitoring: Real-time operational visibility of utility usage across processing areas can be supported with correct instrumentation selection.

Process and Infrastructure Upgrades: Implementation of water-saving valves, automated dosing systems, and streamlined water usage across operations — practical solutions that are replicable across the industry.

Replicable Implementation Framework: A proven, staged model for utility monitoring, offering a roadmap for adoption at other processing facilities. Also identifying challenges and risks for future applications.

Benefit for industry

The broader industry stands to gain from this project's outcomes:

Replicable Model: The monitoring and optimisation framework developed is suitable for adoption across other red meat processing facilities. It provides a tested method for reducing utility costs while improving environmental performance, reducing risk and cost to other processors.

Economic and Environmental Gains: Facilities adopting this model can expect tangible financial savings and progress toward decarbonisation and sustainability targets through water savings and energy reduction.

Better Decision-Making: Real-time dashboards provide operational visibility, allowing for immediate corrective actions—improving both efficiency and compliance.

Workforce Upskilling and Cultural Shift: Through training and dashboard use, staff become more engaged in resource management, leading to lasting operational improvements.

Strategic Industry Impact: The project supports industry frameworks such as AMPC's Environmental Performance Review and MLA's sustainability goals. It lays the groundwork for benchmarking utility usage across species and facility types.

Future Guidance: The findings offer a practical roadmap for staged implementation, ensuring other processors can proceed with confidence and flexibility. Recommendations also support the development of more reliable meters and automated leak detection tools.

Conclusion:

This project demonstrates that with the right tools, training, and phased implementation, meat processing facilities can significantly reduce water, energy, and chemical use. The combination of live monitoring, process adjustments, and cultural engagement results in a robust, industry-leading model for utility optimisation—setting new possibilities for sustainability in meat processing.