Snapshot Report

Diverting plastics from landfill

Business Scenario Study for Red Meat Processors

Project Code
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Project Description

This project sought opportunities for Australian red meat processing facilities to divert on-site single-use plastic from landfill. To meet this objective, several deliverables were established to guide the project toward achieving its purpose. The project undertook a scan of the policy and industry environment to develop an understanding of regulatory and market 'climate' in relation to circular economy strategies and waste streams for single-use plastic products. The project also explored the existing evidence-base to build knowledge of the scientific and technological advancement in plastics circularity. Through selected case studies the project identified and analysed the types and amounts of single-use on-site plastic waste generated by Australian red meat processors annually. Consequently, the project evaluated the environmental impact of diverting single-use on-site plastics from landfill, and developed scenarios that red meat processors across the sector can consider. The project objectives were monitored through 6 milestone reports between March 2022 and July 2023.

Project Content

Aligning with global and national policies, the Australian Meat Processor Corporation and its members have committed to achieving zero waste operations by year 2030 through their ‘zero solid waste to landfill’ policy (AMPC, 2020). This continues to drive investigations into waste reduction, reuse and recycling. Finding viable alternatives that facilitate meaningful diversion of plastic waste from landfill is thus imperative and provides a genuine opportunity not only to strengthen the social and environmental credibility of red meat processors but also to achieve cost savings and/or alternative revenue streams. Individual meat processors have already attempted to reduce plastics, look for alternative methods, or find ways to reuse or recycle waste materials. However, sector-wide solutions are needed to address waste management to minimise costs, sustain business operations, and protect the environment for future generations.

Single-use and problematic plastics are used across red meat supply chains, systems and processes. This is not only true of packaging but also essential across meat processing operations. Like other food processing industries, the dependency on plastic to maintain food safety & quality standards, and production outputs, makes it extremely challenging to implement circular solutions. This project explores ways red-meat processors can divert on-site plastic waste from landfills. It seeks to establish a rigorous understanding of plastic application points along the waste supply chain for the entire meat processing sector. The research provided measurable baseline data against which alternative production pathway scenarios can be assessed and evaluated to achieve the AMPC’s sustainability goals while maintaining or improving production standards. The project also sought to understand the shifting regulatory environment, especially concerning sustainable packaging targets. Through this, the project directly contributes to achieving AMPC’s aspiration of Australian meat processors being recognised as global leaders in environmental stewardship and acknowledged as responsible businesses with positive economic and social impacts on their communities by 2030.

Project Outcome

This project took a holistic approach to single-use plastic waste, built on circular economy principles and the priorities of reduce, reuse, and recycle. A comprehensive investigation of the current business processes of eight representative red meat processors was conducted to explore opportunities for AMPC members to meet their stated sustainability goals concerning solid waste to landfill. Business process analysis identified potential intervention points (plastics application points) to which scenario development and analysis were applied. Through this, the project facilitated co-design with the scientific, technological, operational and business expertise of circular economy scenarios that sought to ultimately divert on-site single-use plastic waste from red meat processing away from landfill. This new knowledge and understanding provides wide-ranging guidance for the Australian red meat processing sector in achieving its aspiration of zero plastic waste to landfill.

A wide range of single-use plastics were identified across the case study sites and were included in a plastics inventory. Currently, 44 single-use plastic items have been included in the inventory. This consists of both on-site consumables and packaging items. A data collection tool was deployed to each site to capture detailed plastics and are summarised in Table 1.

Table 1: Reported plastics volumes by site - 2021/2022

Site	Plastic on-site consumables (kg)	Plastic packaging (kg)
A103	126,002	201,884
B106	70,176	n/a
C105	52,883	173,157
D104	8,250	n/a
F107	86,389	486,434
G102	40,226	270,434
H101	91,835	285,978
Total	**475,761**	**1,042,846**

In order to determine which consumable plastics require the highest priority for scenario generation and validation, sites and associated service experts validated high-volume plastic items and potential scenario pathways. Table 2 indicates high-priority items as reported by by sites, and as such, a waste scenario hierarchy was conducted to find solutions/alternatives/substitutes for the current on-site plastic usage.

Table 2: Circular scenarios for high-volume plastic items

Single-use item	Scenarios	Potential sector impact annually
Disposable aprons	Reusable aprons Compostable aprons	380.7 tonnes
Disposable plastic gloves	Biodegradable nitrile gloves	996.9 tonnes
Bin liners/garbage bags	Biodegradable options	203.7 tonnes
Pallet wrap and strapping	Reusable pallet netting system, recycling and conversion to feedstock oil.	651.3 tonnes
Disposable ponchos and arm sleeves Weasand clips	Downcycling of contaminated product	427.1 tonnes

Benefit for Industry

This has been an extremely timely project for Australian red meat processors, not only because of compliance pressures for retail packaging but because plastics production and consumption are a significant global issue. The pathway to plastics circularity is complex and challenging. In reality, it will take years to achieve sustainability goals and will require diverse and collaborative actions by multiple stakeholders within the supply chain. There is evidence that red meat processors who choose to implement circular economy strategies can already make short-term gains, with the red meat supply chain development of sustainable plastic packaging retail solutions making good progress. This project makes recommendations and provides examples across strategic and operational levels to combat the growing challenges of on-site single-use plastic in the Australian red meat processing industry.

- Red meat processing organisation and sites to develop a circular roadmap for plastics using the waste hierarchy principles.

- Conduct baseline audits of single-use plastic consumption and target high-volume plastic with key diversion strategies.
- Engage with plastic producers, manufacturers and suppliers to explore alternative solutions such as reusable, compostable, recycled and recyclable products.
- Collaborate with co-located industries, waste services and re-processors to develop waste recovery streams in regional areas and take advantage of clustering and scale/volume.
- Develop sufficient systems to capture internal plastics data and put targets in place that align with evolving government policy, regulations and targets.
- Continue to invest in sustainable packaging and monitor the regulatory environment

Useful resources

Insert links to relevant online materials.

https://apco.org.au/

https://www.sealedair.com/

https://planetark.org/