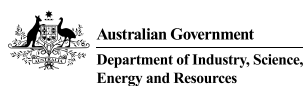




# Final Report:

## Sustainable Save Food Packaging



We gratefully acknowledge Nerida Kelton, Ralph Moyle and Keith Chessell from the Australian Institute of Packaging for their guidance and expertise about packaging design and sustainable materials for the course material, as well as their coordination for the confidential consultation sessions with participants.

Barry McGookin of Food Innovation Australia Limited is thanked for trialling the Food Matrix Portal as part of this project and for participating in the stage one workshop.

Joshua Romanowicz of Visy is acknowledged for his involvement in the workshop and presentation of sustainable packaging products as part of stage one.

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#### Disclaimer

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## **Industry partner foreword**

The Australian Institute of Packaging (AIP) is proud to have contributed to such an important piece of work with Food South Australia. There is a continued need to ensure that the industry is working towards meeting not only the 2025 National Packaging Targets but also the 2030 Food Waste Targets. A project like the one coordinated by Food South Australia ensures that we are all speaking with the same voice and through a consistent message to everyone from micro-businesses to SME's through multinationals. Every business has a role to play to minimise their environmental impacts wherever possible. The AIP has been able to provide the technical packaging expertise that is needed for a project of this scale and being able to meet such amazing businesses has been extremely rewarding for the AIP Education Team Members on this project. To see the steps that the businesses have achieved, or are in the process of achieving, has been remarkably encouraging and rewarding to watch. The AIP strives for result-driven programs like the one led by Food South Australia. The AIP looks forward to continuing to help these businesses and more in the future in collaboration with Food South Australia.

***Nerida Kelton, Australian Institute of Packaging***

Food Innovation Australia Limited (FIAL) continues to find value in connecting with key industry leaders like Food South Australia and the Australian Institute of Packaging, and learning about the true drivers for business risk and decision making. The panel Q&A session delivered in stage 1 was especially valuable in gaining these insights. FIAL recognises that in the longer term, companies tend to achieve a significant return on the time that they invest in training. Equally important are the value and cultural changes from doing research and then embedding that into a commercial reality. Beyond assisting with connections that may not be available in South Australia for the local manufacturers who may wish to expand their ideas, FIAL is continuing to work with the Australian Institute of Packaging on similar programs in other locations.

***Barry McGookin, Food Innovation Australia Limited***

## Executive Summary

The *Sustainable Save Food Packaging* project brought together South Australian food and beverage businesses and expertise in packaging and waste recycling, with the aim of increasing industry's understanding around the relationship between packaging and food waste. A three staged approach deliberately built collaboration amongst the businesses and the experts in increasing the level of knowledge about where and why food loss and waste occurs, and the role of packaging in minimising food loss.

A tour of a [Materials Recovery Facility](#) was the first activity exposed participants to the reality and limitations of recycling equipment and material handling issues. A deeper dive into the individual requirements of the businesses increased their knowledge of the multi-layers to packaging and food loss that need to be considered when designing food and beverage products without compromising food safety or quality. Businesses demonstrated a high level of engagement and participation, with the majority reporting that the training was excellent, new and it met their business objectives. Despite that there was not any uptake of the Food Matrix online portal, participants were supported with their packaging needs and reported confidence in meeting the National Packaging Targets. The closing forum was of particular value in gauging how far the businesses had progressed.

The project has identified that innovation in extending product shelf life through packaging is where effort needs to be directed to address the underlying waste issue and therefore is being explored to direct future activities across the South Australian food and beverage industry.

Objective(s)	Result(s)
Food Waste and Sustainable Packaging Stage 1, Listen and Learn aims to raise awareness and educate the South Australian food and beverage industry about the role of packaging in minimising food waste.	Stage 1 was fully booked with a total of 31 registrants. 100% of the respondents reported in their feedback forms that the content was relevant and beneficial to them and their business. The workshop fully met the objectives for 63% of the respondents, positively met the objectives for 29% and satisfactorily met the businesses objectives for the remaining 8%.
Food Waste and Sustainable Packaging Stage 2, The Nitty Gritty offers a 'deeper dive' into the specifics around packaging for business who have participated in stage 1.	A total of 12 individuals participated in stage 2. Stage 2 fully met the objectives for 63% of respondents and positively met the objectives for the other 37%. 88% of respondents rated their response to the individual consultation session as very satisfied.
Food Waste and Sustainable Packaging Stage 3, Getting Serious provides the opportunity for businesses to receive ongoing assistance with their packaging needs through FIAL's Food Matrix online portal.	Whilst no questions or requests for assistance were received through the Food Matrix, businesses reported positive progress with their packaging needs.
Next Step(s)	Timing
The need to increase product shelf life to enable products to be transported across Australia and overseas has been identified. A project to explore how packaging can improve product shelf life through the supply chain is currently being explored.	2020-21

## Project Milestones Addressed / Unaddressed

Id Code	Name	% Complete	Start Date	End Date
M1	Food Waste and Sustainable Packaging Stage 1 – Listen and Learn	100	01/02/2020	29/02/2020
This stage will raise awareness and educate the South Australian food and beverage industry about the role of packaging in minimising food waste through a tour of a Material Recycling Facility followed by an information seminar.				
M1.1	Communications material developed	100	01/02/2020	13/02/2020
M1.2	Workshop agenda and running sheet prepared	100	01/02/2020	14/02/2020
M1.3	Business questionnaire finalised	100	01/02/2020	14/02/2020
M1.4	Material Recycling Facility tour held	100	26/02/2020	26/02/2020
M1.5	Workshop held	100	26/02/2020	26/02/2020
M2	Food Waste and Sustainable Packaging Stage 2 – The Nitty Gritty	100	01/02/2020	31/07/2020
This stage will provide businesses with an opportunity to identify common gaps, barriers to minimising food waste and opportunities to collaborate through group work, as well as confidential consultations relevant to their specific packaging needs.				
M2.1	Business questionnaire finalised	100	19/05/2020	19/05/2020
M2.2	Packaging experts confirmed	100	29/05/2020	29/05/2020
M2.3	Collaborative discussion held	100	23/07/2020	23/07/2020
M2.4	One-on-one consultations held	100	18/06/2020	22/07/2020
M3	Food Waste and Sustainable Packaging Stage 3 – Getting Serious	100	01/02/2020	30/11/2020
This stage will provide more extensive assistance to businesses to address their packaging needs that will be managed through an online portal or website directly after stage 2 in July 2020.				
M3.1	Portal/website modified	100	01/02/2020	17/06/2020
M3.2	Contact details of specialists confirmed	100	01/02/2020	17/06/2020
M3.3	Portal/website activated	100	23/07/2020	30/11/2020

---

## **Project Impacts**

This project addressed the key impact area of Industry People Trained. The project trained a total of 31 people in sustainable packaging. Whilst packaging needs vary from business to business depending on the product properties, storage condition, business size, as well as other factors, this project has increased businesses understanding of how to address their packaging challenges to achieve a reduction in waste. The opportunities and programs to assist industry in meeting the 2025 National Packaging Targets, and issues around single-use plastic packaging were also discussed and explored. Food and beverage manufacturers developed a more considered approach to reducing food waste through packaging taking into account packaging design, including resealability, ease of opening and improvements in barrier packaging. Participation in this project was encouraged through offering a staged approach that allowed businesses to engage, based on their current level of understanding and availability of time that resulted in genuine commitments from the businesses. Manufacturers were actively connected to packaging specialists and suppliers who offer sustainable packaging materials.

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## **Utilisation/Commercialisation Opportunities**

The main outputs from the project were an introductory workshop, a tour of a Materials Recovery Facility, individual consultation sessions and a collaborative forum, as well as accompanying material to support each stage. The delivery of this project in South Australia will act as a pilot for other states and territories.

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## **IP**

The project did not produce any products/services that contain intellectual property that would need protection.

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## **Approved By**

Samara Miller - Project Leader

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## **1.INTRODUCTION**

Australians generate approximately 64 million tonnes of waste per annum and the figure is continuously growing (GISA n.d.). It is estimated that food waste costs the Australian economy approximately \$20 billion each year and over 5.3 million tonnes of food intended for human consumption is wasted from households, as well as the commercial and industrial sectors each year (Commonwealth of Australia 2017). The drivers of food waste are complex and occur at every stage along the supply and consumption chain (Commonwealth of Australia 2017). Packaging plays a significant role in reducing food waste providing a protective barrier between food and its surrounding environment. However, packaging is made from materials that require management at its end of life to prevent detrimental impact on the environment (APCO 2020). In addition, there is a lack of understanding amongst the food and beverage industry around packaging that can reduce or prevent food waste and improve overall product storage. This industry-led pilot project was developed to connect South Australian food and beverage businesses with relevant expertise to discuss issues that currently exist with packaging materials, and allow them to learn about and explore sustainable packaging to reduce food waste with a view of inspiring them to take up sustainable packaging solutions.

## **2.LITERATURE REVIEW**

### **2.1 National Packaging Targets**

In September 2018, Federal Parliament initiated Australia's 2025 National Packaging Targets to reduce the total waste generated by 10% by 2030 (Topsfield 2018). These targets specify that 100% of all Australia's packaging should be re-usable, recyclable or compostable by 2025 or earlier. They also specify that 70% of Australia's plastic packaging should be recycled or composted, that 30% of all packaging will include recycled content, and problematic or unnecessary single-use plastic packaging will be phased out through design, innovation or the introduction of alternatives (APCO 2020). The Australian Packaging Covenant Organisation (APCO) is the organisation appointed by the federal government to facilitate the delivery of these targets that are intended to provide a clear direction in delivering a new sustainable approach for packaging that is made, used and sold in Australia. Achieving the 2025 targets will be an important milestone to shift current practice from a 'take-make-waste' resource model to a system that eliminates or reduces waste by the continual use of resources that is more efficient and effective for the Australian economy (APCO 2020).

### **2.2 Australian Recycling Label (ARL) and Packaging Recyclability Evaluation Portal (PREP)**

To support the National Packaging Targets, the Australian Recycling Label (ARL) program was developed by Planet Ark, PREP Design and APCO to provide easy to understand instructions about how to correctly dispose of all parts of a products packaging (APCO 2020). The program features two key elements; ARL and PREP. ARL is an on-pack label to provide clear and simple instructions about how to recycle packaging components. PREP is an accompanying online tool that assesses packaging recyclability in the Australian and New Zealand recovery systems.

### **2.3 Single-use plastic packaging**

Phasing out problematic and unnecessary single-use plastic packaging is essential in ensuring that 100% of packaging is reusable, recyclable or compostable by 2025 and that 70% of all plastic packaging is recycled or composted (APCO 2020). South Australia has become the first state to ban single-use plastic products such as straws, cutlery and beverage stirrers. This legislation was passed in the South Australian parliament in September 2020 and comes into effect in early 2021 (Speirs 2020).

### **2.4 Industry Knowledge**

Despite the approaches and initiatives discussed above, there is a general lack of understanding amongst the South Australian food and beverage industry around packaging that can reduce or prevent food waste,



optimise shelf-life and improve overall product storage. Intelligence gathered by Food South Australia identified an interest from business owners in sourcing alternative packaging for various categories of food and beverages. There was also a need to raise awareness about smart intelligent packaging design and the impact innovations in packaging could have on creating a more efficient supply chain. The overall role of packaging in reducing food waste needs to be discussed more openly in the industry and better understood by food and beverage businesses so that they are empowered to drive change with packaging technologists, designers and engineers.

### **3.METHODOLOGY**

The project was delivered in three stages across ten months. Communication material was developed by Food South Australia and distributed to all food and beverage businesses, including both Food South Australia members and non-members (Appendix 1). Food South Australia managed the expression of interest recruitment process and all registered businesses were asked to complete a business questionnaire prior to stages 1 (Appendix 2) and 2 (Appendix 6). The usefulness and effectiveness of the project was gauged through feedback forms obtained from participating businesses. These forms were also used to identify areas of improvement around the management and delivery of the project (Appendices 5 and 9).

Food South Australia manages business confidentiality as part of its programs and services provided to the food and beverage industry. As part of our risk management, strategies were put in place to ensure that participants were supported through the project and only shared the type and level of information that they were comfortable with. These strategies include:

- Each participating business was asked to complete a confidential questionnaire about their company prior to stages 1 and 2 which alerted Food South Australia to any potential competitors.
- A list of participants was distributed to the group prior to the workshop in stage 2 to ensure that everyone was aware of who will be in the same room prior to the event.
- Information obtained about each of the participating businesses was communicated with the facilitators prior to all workshops.
- Workshop facilitators were asked to advise all businesses of the need for Chatham House Rules at the commencement of every workshop.
- Stage 2 provided businesses with an opportunity for one-on-one consultations with the facilitators to enable businesses to discuss their food waste issues and packaging needs in a confidential setting.
- Information provided by businesses on feedback forms or as part of other project interviews were not disclosed to any third parties or identified as related to the businesses in any reporting.

#### **3.1 Listen and Learn – Stage 1**

Stage 1 was delivered in one full day on 26 February 2020 with the aim of educating South Australian food and beverage manufacturers about the role of packaging in minimising food waste. The agenda is documented in Appendix 3 and photos are provided of stage 1 in Appendix 4. A short business questionnaire was sent out to all participants, asking for their level of knowledge about the role of packaging in minimising waste and how they would define sustainable packaging to ensure that stage 1 was pitched to an appropriate level of understanding. Participants were also asked to document information specifically relating to their business including their current packaging challenges, the level of importance they give to sustainable packaging as part of their business, and whether they design their packaging to reduce or eliminate food waste. This provided more specific information relating to each business. The responses were provided to the facilitators prior to the workshop.

The morning was spent visiting the Materials Recycling Facility (MRF) of the Northern Adelaide Waste Recycling Authority (NAWMA) at Edinburgh in Adelaide to expose participants to the realities of a working MRF facility, their equipment, limitations and material handling issues. Project participants received a site induction on arrival at the facility and a presentation about how the recycling process works at the MRF.

An information workshop on the seriousness of food waste in Australia and globally was held in the afternoon at the Plant Research Centre of Waite Campus at Urrbrae. Ralph Moyle and Keith Chessell from the Australian Institute of Packaging facilitated and delivered this workshop. A representative from Visy was available to discuss packaging queries with the participants. The topics covered the definition of sustainable packaging, APCO Sustainable Packaging Guidelines, how to efficiently use recyclable plastic to minimise food waste and the examples of sustainable packaging that have been implemented by food industry around the world. A panel of representatives from AIP, FIAL and Visy was organised as part of the workshop to enable participants to ask specific questions towards the end of the day. Participants were asked to complete a feedback form for stage 1 (Appendix 5).

### **3.2 The Nitty Gritty – Stage 2**

This stage offered a 'deeper dive' into the specifics around packaging for businesses who had attended stage 1. It consisted of individual consultation sessions for each business with the AIP facilitators to assist them to move to the next step of their packaging ideas. This was followed by a collaborative group discussion held on 23 July 2020 to identify common gaps, barriers to minimising food waste and opportunities for businesses to collaborate. Participants were asked to provide more detailed information prior to their individual consultation sessions. Questions included the level of progress made since stage 1, ideas that they would like to pursue, barriers that they may have encountered, as well as information on their products, storage conditions and transport, their primary and secondary packaging materials and specifications (with photographs) and packaging equipment currently used.

Stage 2 was delivered virtually due to the COVID-19 pandemic and the associated travel restrictions that were in place during this time. This meant that the packaging experts were unable to conduct individual tours of each business site. Therefore, businesses were asked to record a short video of their current production and packaging, with information about their future plans that could be reviewed prior to individual consultations. Over a six week period from 18 June to 22 July 2020 each business connected with two AIP experts via Zoom to enable all businesses to engage in a private session prior to the group discussion. The group discussion was interactive which covered outcomes from stage 2, new sustainable packaging guidelines, an introduction to the FIAL Food Matrix and encouraged participants to share their packaging implementation over a two-hour time slot. Appendices 7 and 8 show the agenda and virtual discussion, respectively. Similar to stage 1, participants were asked to complete a feedback form regarding their satisfaction with stage 2 and their assessment of the facilitators (Appendix 9).

### **3.3 Getting Serious – Stage 3**

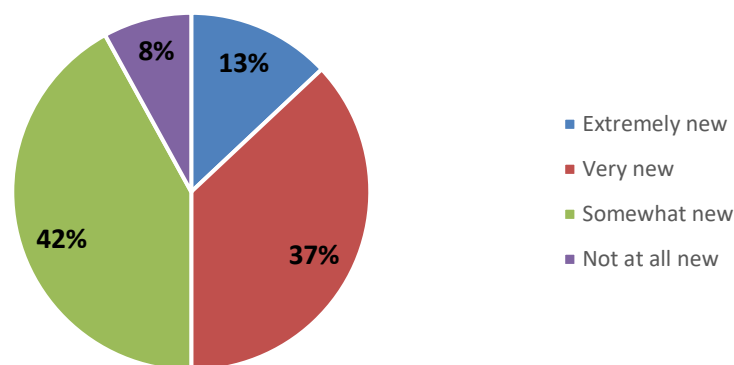
Stage 3 was intended to provide businesses with an opportunity to receive ongoing guidance with their packaging needs to obtain more specific answers to their queries as they investigated and explored new packaging or modifications to their business. It was recognised that it may take time for manufacturers to plan changes that may transform their packaging. Therefore, it was important that they could access assistance in connecting with experts across a range of different disciplines such as packaging suppliers, engineers, financial advisors, transport and freight companies etc. Stage 3 was offered immediately following the stage 2 collaborative discussion to maintain continuity of support for the participating businesses. FIAL's Food Matrix online portal was used as the platform offering up to two questions free of charge to enable businesses to be connected to a pool of experts across a range of topics with their third question triggering payment of a fee. FIAL provided a monthly report to Food South Australia listing the total number of participants who registered for the portal, the number of questions asked across the participant group and the top five packaging topics asked through the portal from general enquiries across Australia. In response to the COVID-19 pandemic, FIAL offered the project participants an unlimited number of questions free of charge through the Food Matrix portal until 1 September 2020.

## 4.RESULTS

### 4.1 Listen and Learn – Stage 1

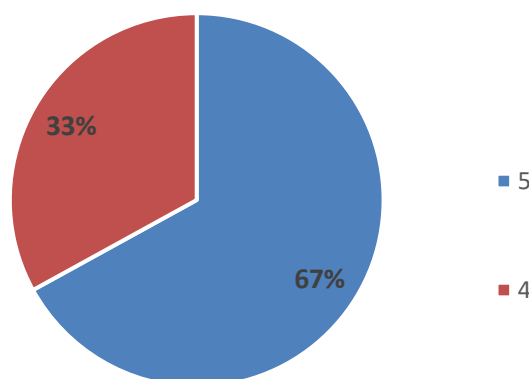
Stage 1 was fully booked with a total of 22 businesses and three service providers represented by a total of 31 registrants. The three service providers were the University of Adelaide, Barossa Farmers Market and Visy. The food and beverage categories involved in the project were seafood, meat, prepared meals, confectionary, bakery and cereal, spreads and nuts. Hundred percent of participants completed the pre-workshop questionnaire prior to the 26 February 2020. All of the participants reported in their feedback forms that the content was relevant and beneficial to their business. Ninety-six percent (96%) of the respondents assessed the knowledge of the topic areas by both the facilitators as excellent.

In relation to how new the presented information was to the participants, 42% reported it as somewhat new, 37% reported the information as very new and 13% reported that the information was extremely new (Figure 1). This range of responses was expected given the different levels of knowledge and experience amongst the businesses. Only one of the respondents reported that the information was not at all new.



*Figure 1. Participant rating of how new the information was during stage 1.*

Participants were asked to rate on a scale from 1 to 5, with 1 being poor, negative, and dissatisfied and 5 being excellent, positive or satisfied. Sixty-seven percent (67%) of respondents rated stage 1 as the highest possible score of excellent and 33% of respondents rated the second highest score (Figure 2).



*Figure 2. Participant satisfaction rate for stage 1.*

Stage 1 fully met the objectives for 63% of the respondents, positively met the objectives for 29% and satisfactorily met the objectives for the remaining 8% of the respondents (Figure 3).

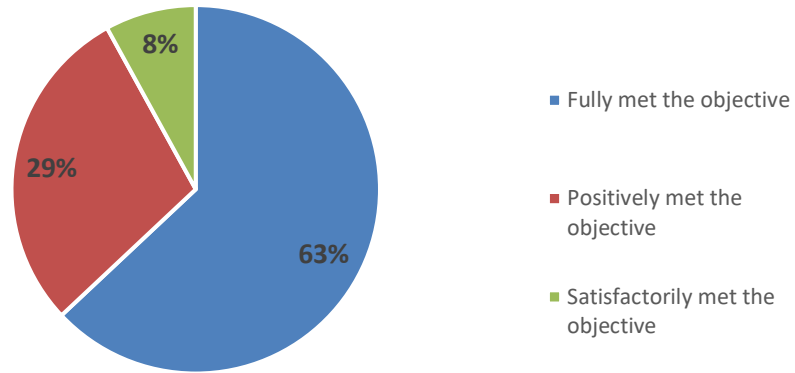


Figure 3. Participant rating of whether stage 1 met their objective.

#### 4.2 The Nitty Gritty – Stage 2

The total number of participants in stage 2 was 12 which was made up of 10 South Australian food and beverage manufacturers, one university participant and one service provider participant. The university participant was involved in the group collaborative discussion only. The level of engagement was high with all participants willing to share commercially sensitive information during their individual consultation sessions to explore their packaging challenges. All of the participants completed their pre-consultation requirements including the business questionnaire, documentation about their packaging specifications and pre-recorded video of their processing and packaging lines. This proved extremely helpful to the packaging experts which enabled them to provide a high level of assistance.

Participants were asked to rate whether Stage 2 content had met their objective. Sixty three percent of respondents rated “very satisfied” which was the highest score possible and the other 37% of respondents representing the second highest score (Figure 4).

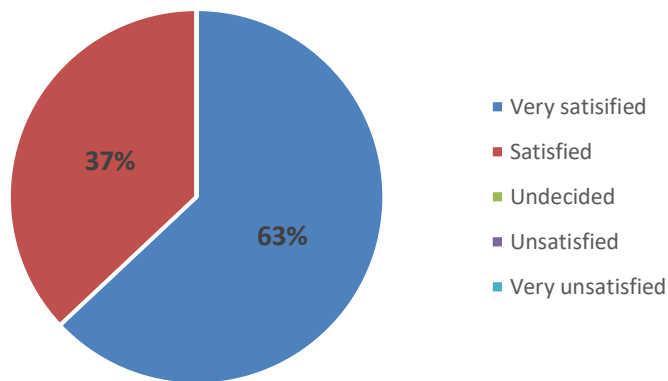
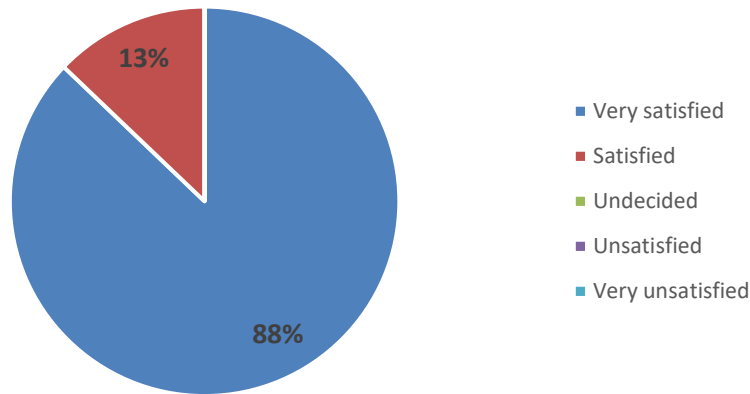


Figure 4. Participant rating of whether stage 2 met their objective.

Eighty-eight percent (88%) of respondents rated their individual consultation session as very satisfied and the remaining 12% as satisfied (Figure 5).



*Figure 5. Participant satisfaction rate of individual consultation sessions.*

Respondents were also asked to assess AIP facilitators on a scale between 1 and 5 (1. Poor, 2. Bad, 3. Undecided, 4. Great, and 5. Excellent) in terms of their mentoring and facilitation skills, their ability to make the sessions enjoyable and their knowledge of the topics. Both AIP facilitators received ratings of either excellent or great which were the two highest scores possible from the respondents. All of the food and beverage manufacturers participating in stage 2 reported that the virtual approach provided a greater level of flexibility, especially for those located in regional areas.

The collaborative group discussion held at the end of stage 2 allowed businesses to benefit from hearing about each other's challenges and progress in implementing more sustainable packaging and the assistance each needed. The discussion included a presentation providing useful insights around a packaging sustainability strategy approach, such as introducing the Sustainable Packaging Guidelines established by APCO and the Australian Recycling Label as an assessment tool to achieve optimal outcomes for packaging functionality, as well as ensuring the 2025 National Packaging Targets are met. Participants were also introduced to the Food Matrix as a precursor to stage 3.

#### **4.3 Getting Serious – Stage 3**

Three participants indicated that they had registered with the Food Matrix online portal but were time-poor and had not used it with one of the participants commenting that they had been very busy with their production. One of the participants indicated that they were planning to use it but had not accessed it as yet and another participant reported that the portal was not very helpful. Food South Australia forwarded the portal link to another participant who was unaware that it was available. None of the participants used the Food Matrix to ask questions or seek assistance. FIAL was not permitted to provide the names of the businesses to Food South Australia that had registered for the Food Matrix which made it difficult to explore the barriers that were preventing businesses in using it. The portal was subject to planned maintenance which may have hindered access to the portal by businesses given that users that were previously registered were required to re-register their details to access the portal.

Despite the poor uptake of the online portal, fifty percent (50%) of the participants contacted as part of stage 3 reported that they feel confident in meeting the 2025 packaging targets. Recyclable labels, reusable packaging and resealable packaging were discussed with each participant, as well as overall progress in implementing sustainable packaging. The following provides a snapshot of the responses received:

- Progressing sustainable packaging and have made some changes in line with the advice received
- Working to eliminate single use plastic which mostly comes from our laboratory which will be replaced with glass and steel.
- Installing an organic bin so samples are not going into general waste.
- Installing a dishwasher to improve hygiene.

- Changing mixed material labels to recyclable plastic material and have confirmed the design. Currently waiting for the first batch to arrive.
- Working with a packaging supplier to find the right thickness for a bottom liner to reduce the amount of plastic that is currently used.
- Contacting Curtin University and Disruptive Packaging to set up trials to determine how packaging behaves at freezing temperatures.

## 5.DISCUSSION

The project achieved a great result in the number of participants trained. Thirty-one registrants participated in stage 1 which was just over the target. A maximum participant number was set to manage the tour of the Northern Adelaide Management Authority Material Recovery Facility. The wide variety of food and beverage categories represented in the list of participants indicated a significant level of interest across different sectors of the food and beverage industry. Interest from the service providers also indicated wider interest in this topic. A staged format used in the project worked well in offering businesses the opportunity to participate at an introductory level in stage 1 and at a more in-depth level specific to their business needs in stages 2 and 3. This approach may have reflected the high participation rate in the project.

Overall, the project has received a high level of positive feedback from the participants for stages 1 and 2. One participant who initially registered for only stage 1 continued with the full program. Participants gained a significant amount of knowledge and understanding about the different approaches to improve their sustainable packaging without compromising food safety and quality, and the project has raised awareness of the part packaging plays in minimising food waste. The facilitators provided a high degree of adaptability for each of the participants enabling each business to get the most value from the program.

Participants demonstrated a high level of support and encouragement towards each other during the stage 2 final collaborative discussion through active questioning and the sharing of knowledge. Topics discussed included sourcing suitable sustainable material, ways to reduce the amount of packaging used, reusing material to its maximum end of life, the need to find relevant packaging suppliers and applying best practice in waste management. Food businesses used the opportunity to share successes and any barriers in finding the most suitable packaging. A common barrier identified during the individual consultation sessions was the need for guidance about how to develop a sustainable packaging plan. Options for sustainable packaging material and ways in which the businesses can improve their waste management system have also been common themes throughout the sessions.

Food South Australia has not been possible to assess the value of the Food Matrix portal to the participants as part of stage 3. The low level of engagement may indicate that more hands-on assistance may be required for companies to support their packaging needs. The value of the Food Matrix to the project overall has been limited and it is unlikely that it will be used in future programs without a more comprehensive assessment of its benefits to the industry. FIAL has now relaunched the portal with an improved format which is intended to be more user friendly.

## 6.IMPACT AND ONGOING MONITORING

Training was delivered to 31 individuals across three stages on food waste and sustainable packaging. This project has instigated discussions across the industry around types of packaging materials and stimulated innovation in sustainable packaging to reduce food waste specific to the food and beverage sector. The project has been used to address the lack of understanding amongst the industry and will trigger ongoing communication in preparation for the 2025 deadline for using re-usable, recyclable or compostable packaging. The project has also become a platform to launch future industry projects and proposals to meet the national packaging targets.

One of the participating businesses is currently in the process of trialling reusable cartons made from calcium carbonate and polypropylene materials for their chilled product in the retail channel. This business operates at sea and therefore has the added complexity of packaging in a challenging environment. The reusable cartons can be flattened, washed and dried for them to be successfully reused at sea before requiring disposal. Hence, this provides an example of the innovative solutions that have been identified from the project.

Another business has commenced replacing their single use plastic equipment in their food testing laboratory with glass beakers and stainless-steel plates and spoons. Organic green bins are also being installed to divert the food samples away from landfill. Alternatives for their single use stretch wrap that is used for their pallets is also being explored. Reusable PC net is currently being trialled that will potentially eliminate a substantial amount of stretch wrap that goes to waste, in instances when products are removed from pallets for orders after they have been stretch-wrapped.

It is clear from this project that packaging needs vary from business to business depending on their product properties, storage condition, business size and many other factors. The motivation by the businesses to reach the 2025 packaging targets has been very positive. Whilst the process of modifying packaging and related production lines takes time, this project has acted as a catalyst for businesses to think about food waste as a priority.

## **7.CONCLUSIONS AND RECOMMENDATIONS**

This project has successfully increased businesses understanding about sustainable packaging and stimulated an interest in food waste reduction for the South Australian food and beverage industry. Whilst participants represent a small subset of the wider industry, the commitment demonstrated by participants highlights the need for Food South Australia to actively build on these outcomes, especially in the lead up to the 2025 National Packaging targets.

As a result of the closure of the food service industry and the associated lockdowns related to the COVID-19 pandemic, many food and beverage manufacturers have extended their product range to new customers across Australia to maintain sustainable income and remain solvent. Some businesses have diversified into new products. In addition, longer transportation lead times due to decreased air and sea freight capacity has demonstrated the importance of improving shelf life for the transport of product. Packaging has become more important to consumers given the heightened perception of risk from disease which has raised people's awareness around food safety and safe packaging (Food & Beverage Industry News 2020).

Building on this project, it is timely to offer the industry assistance with packaging for product life and transport that protects and preserves food and beverages. The importance of packaging to improve product shelf life during transport to domestic and international markets needs to be better understood amongst the food and beverage industry to help businesses adapt to the current airfreight disruption. This also provides a unique opportunity to explore opportunities of sustainable packaging to fulfil these needs for industry. Longer shelf life can be accomplished with the right combination of manufacturing or processing techniques and packaging material. Incorporating key technologies such as high-pressure processing, food irradiation, freeze drying, retort etc are crucial to effectively reduce the number of spoilage microorganisms in food whilst packaging protects the product by providing barriers against moisture and oxygen, thereby preventing contaminants to the product.

It is recommended that a future project be considered that offers businesses ways to address technical issues and explore innovative ideas to resolve shelf-life extension barriers. Shelf-life extension, transportation through the supply chain and associated economics of packaging would be suitable topics to include. Food South Australia is exploring such topics that will complement the Sustainable Save Food Packaging project to lead efforts in reducing food loss and waste and improve the efficiency of food supply chains to assist the South Australian food and beverage industry.



## 8. REFERENCES

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## APPENDICES

### Appendix 1: Program Flyer



*Food South Australia, the Australian Institute of Packaging, the Fight Food Waste CRC and Food Innovation Australia Ltd (FIAL) are partnering to present a two part program designed to help you understand what you need to do to reduce your food and packaging waste - and get your food or beverage business ready to meet the National Packaging Targets that will come into force by 2025.*

**The Sustainable Packaging To Reduce Food Waste program includes:**

**LISTEN AND LEARN:**  
Workshop and tour  
February 26 2020

An introductory workshop exploring the complexities and challenges of moving to sustainable packaging to reduce food waste with AIP packaging experts plus a tour of the Northern Adelaide Management Authority Material Recovery Facility.

**PUTTING YOUR PLANS INTO ACTION:**  
Workshop and on-site consultations  
July 22-23 2020

The second stage of the program includes a follow-up workshop designed to facilitate discussion among participating businesses to identify common gaps, challenges and opportunities. One-on-one consultations and site visits to your business can be arranged as part of this two day workshop.

**Online portal - Expert support**

Following the second workshop, participants will have access to packaging experts via Food Innovation Australia Ltd's online portal, the Food Matrix, for up to four months to help you resolve challenges arising as you implement your sustainable packaging plans in your business.

**Who can participate?**

The Sustainable Packaging To Reduce Food Waste Program is for food and beverage manufacturers, processors and producers who are actively seeking ways to reduce food waste, implement the use of sustainable packaging and focusing on implementing strategies to meet the National Packaging Targets which will come into force in 2025.

The Listen and Learn workshop is also open to businesses who want to know more about the options and what it will take to reach packaging target compliance.

**What does it cost?**

- » Full program: Food South Australia members \$260, non-members \$320
- » Listen and Learn Workshop and Tour only: Food South Australia members \$110, non-members \$140
- » Please note the Putting Your Plans Into Action Workshop is only open to businesses who have already participated in the Listen and Learn Workshop.
- » Limited places are available to participate in this program and applicants will be accepted on a first come, first served basis.

*All prices shown include GST.*

**How can I participate?**

For more information and to register for the program, contact

Iris Tordjeman  
Industry Liaison  
(08) 8303 9371  
[iris@foodsa.com.au](mailto:iris@foodsa.com.au)

SUSTAINABLE PACKAGING TO REDUCE FOOD WASTE ■■■■■■■■■■



**Ralph Moyle**  
Education Coordinator, Australian Institute of Packaging

Ralph Moyle is also a Fellow of the Australian Institute of Packaging and has consulted to the food processing industry for over 40 years. Ralph has increased value for his clients through successfully implementing smarter packaging and reducing waste, helping these businesses increase shelf life, reduce material costs and identify environmentally friendly alternatives.



**Keith Chessell**  
Education Team Member, Australian Institute of Packaging

Keith Chessell is a Fellow of the Australian Institute of Packaging with over 50 years experience in the field, including raw and packaging materials procurement and research and development. Over the past 17 years his focus has been on training and education in sustainable packaging design for manufacturers.

The Sustainable Packaging To Save Food Waste program has been developed by Food South Australia in conjunction with the Australian Institute of Packaging, Fight Food Waste CRC, and Food Innovation Australia Ltd.



Connect with us  
Food South Australia  
(08) 8303 9435  
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[www.foodsouthaustralia.com.au](http://www.foodsouthaustralia.com.au)

PO Box 124 Glenside SA 5065  
Plant Research Centre, Waite Campus  
2B Hartley Grove, Urrbrae SA 5064



The program also receives funding support from the Government of South Australia through an industry-government partnership designed to support industry-wide growth.



**SUSTAINABLE PACKAGING TO REDUCE FOOD WASTE** |||||

# Sustainable Save Food Packaging Program - Listen and Learn

The information you provide to Food South Australia will be used for the purpose of developing and delivering the most appropriate support for your business. This information will be communicated to AIP packaging consultants to help them preparing the workshop. No information will be disclosed to any other third parties or identified as related to your business in any reporting.

Name \*

Company name \*

Your business is: \*

- ☐ Metropolitan based      ☐ Regional based

## Listen and Learn - Workshop 1

Please answer the three questions below. It will assist the facilitators in tailoring the workshop.

1. What are your current challenges in relation to your packaging? \*

2. When you think of the term 'Sustainable Packaging' what does this mean to your business? Is this important to you? \*

3. With one third of the food production being wasted globally have you ever considered the important role that packaging plays to minimise waste? Do you design your packaging to save food? \*

### Appendix 3: Stage 1 Agenda



## Listen and learn: Sustainable Packaging Tour and Workshop Wednesday 26 February 2020

*Please find below the agenda of the Listen and Learn workshop on the 26<sup>th</sup> of February 2020.*

**7.15 am** – Meeting at the Waite Campus as per the red X on the map attached.

The University of Adelaide - Waite Campus

Gum Oval, Entry 1

Waite Road

Urrbrae, South Australia 5064

Free parking is available at the Waite Road Carpark across the street.

**7.30 am** – Departure to the Materials Recycling Facility.

Please note, the bus will not wait the late attendees.

**8.30 am** – NAWMA Material Recovery Facility Site Tour

Welcome by Adam Faulkner, CEO.

Requirements: Long sleeve, long pants and closed in shoes.

**10 am** – Return to the Waite Campus

**11 am** – Morning Tea and Coffee

**11.15 am** – Workshop

**12.45 pm** – Lunch

**1.30 pm** – Workshop

**3 pm** – Afternoon Tea and Coffee

**3.15 pm** – Final closing session

**4 pm** – Workshop closed





**Appendix 4: NAWMA Materials Recovery Facility Site Tour and Workshop, 26 February 2020**



## Sustainable packaging to save food waste Feedback Form

**Wednesday 26 February 2020**

Thank you for attending this Listen and Learn workshop.

So we can continue to improve our services and support, we would love to hear what you thought about today's event.

<b>Company Name</b> <i>(optional)</i>	
<b>Contact Name</b> <i>(optional)</i>	

How would you rate the workshop?

*On a scale from 1 to 5, with 1 being poor, negative or dissatisfied and 5 being excellent, positive or satisfied.*

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Did it meet your objectives?

*On a scale from 1 to 5, with 1 being poor, negative or dissatisfied and 5 being excellent, positive or satisfied.*

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Comments:

How much of the information provided was new to you?

*With 1 being none and 5 being most of it.*

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Comments:

How would you rate the level of detail in the information provided?

*With 1 being not detailed enough and 5 being too much detail.*



☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5

Comments:

In terms of the purpose of the workshop, was the content relevant and beneficial to you and your business?	Yes	No
Comments:		

Please rate your facilitator: <b>Ralph Moyle</b>			
Presentation & facilitation Skills	Knowledge of topic areas	Ability to make the session enjoyable	Degree of group interaction
Excellent	Excellent	Excellent	Excellent
Good	Good	Good	Good
Poor	Poor	Poor	Poor

Please rate your facilitator: <b>Keith Chessell</b>			
Presentation & facilitation Skills	Knowledge of topic areas	Ability to make the session enjoyable	Degree of group interaction
Excellent	Excellent	Excellent	Excellent
Good	Good	Good	Good
Poor	Poor	Poor	Poor

Is there anything else we can do to improve future workshops?	Yes	No
Comments:		
Do you have any other comments or recommendations?		

**Thank you for providing feedback**  
**and participating in our Listen and Learn Packaging Workshop.**



## Sustainable Packaging Program Stage 2 Participant Preparation



Stage 2 of the Food South Australia Sustainable Packaging Program, in conjunction with the Australian Institute of Packaging (AIP), is designed to assist the participating companies in moving to the next step in their Sustainable Packaging journey. To maximise the assistance and information provided to each company, the AIP requires the following preparation to be undertaken and returned at least two weeks prior to the scheduled zoom meeting.

Name	<input type="text"/>		
Position	<input type="text"/>		
Company	<input type="text"/>		
Mobile	<input type="text"/>	Email	<input type="text"/>
Website	<input type="text"/>		

### QUESTIONS (Please provide as much relevant information)

1. What was your main Sustainable Packaging learning from the 26 February FoodSA workshop, that you wanted to implement back in your business?

2. Have you been able to implement/action that learning?

☐ Yes    ☐ Still    ☐ No

- 2A. Please detail the Sustainable Packaging changes undertaken, or you would like to undertake, or were unable to undertake?

- 2B. What barriers have you encountered in your Sustainable Packaging journey?

1

2C. What new issues have arisen?

2D. Has the Sustainable Packaging change provided any benefits? (increased sales, positive consumer comments etc)

3. Sustainable Packaging Stage 2 - What help or assistance do you require from the AIP Education team to be able to move to the next step in Sustainable Packaging development?

2

4. To assist the AIP Education Team understanding of the current under review or proposed new product/packaging can you please provide the following:

- 4A. What are the expected storage and transport conditions the pack will be subjected too?

- 4B. The expected usage by the consumer of the product and package?

- 4C. Details of the expected end of life of the packaging when the consumer has finished with the packaging? Will it be reusable or disposed as rubbish, recycled (kerbside or public areas), or composted.

- 4D. If you have ideas on the type of proposed Sustainable Packaging that you are considering, can you provide samples and specifications?

- 4E. MP4 video which will provide background on:
- Your business activities, products.
  - Production equipment, raw material process, packaging materials (handling before during and packing), palletisation, warehouse/storage situation and conditions.
- 4F. Sample and specifications of the current packaging under review, including the expected shelf life (Best Before/Use By Date) of the pack.
5. Please detail what you are looking to achieve from participating in Stage 2?

6. How are you going to measure the success of your involvement in Stage 2?

## Appendix 7: Stage 2 Agenda



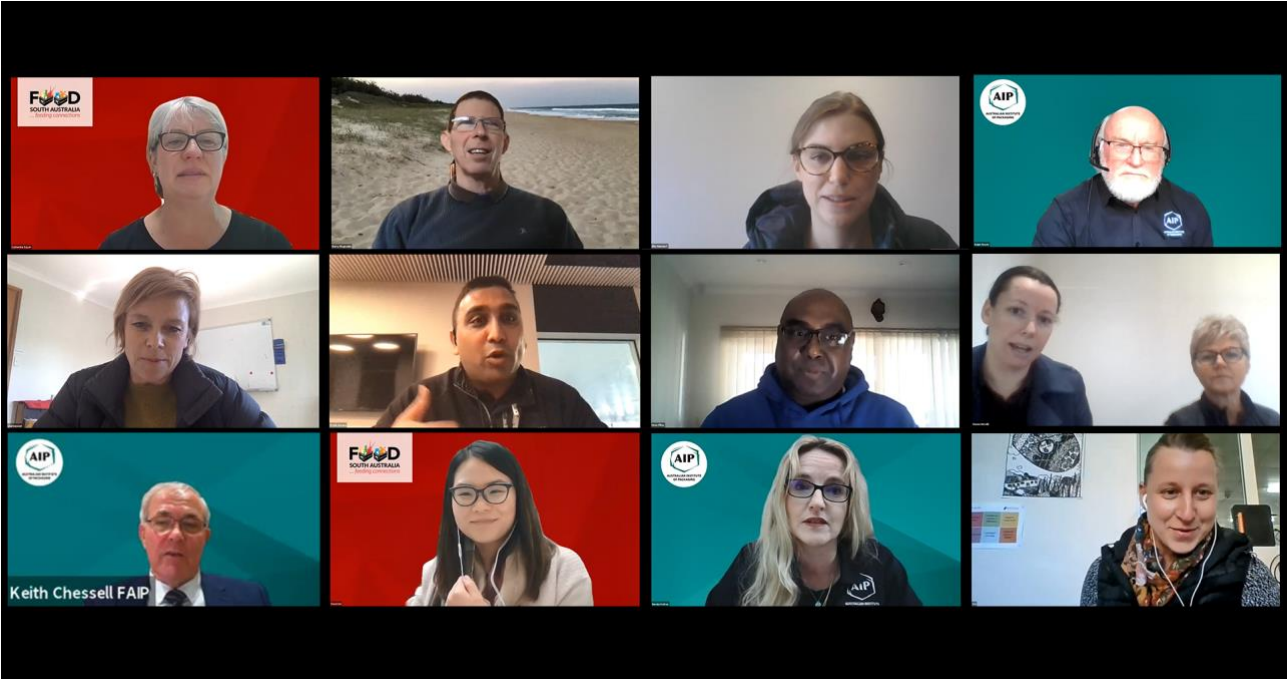
### The Nitty Gritty: Food Waste and Sustainable Packaging Stage 2 Final Discussion Thursday 23 July 2020

*Please find below the agenda of the Stage 2 Final Discussion on the 23<sup>rd</sup> July 2020*

10.00 am-	Welcome (Catherine Sayer, CEO of FoodSA)
10.05 am-	Expected outcomes from Stage 2 (Catherine Sayer, CEO of FoodSA)
10.10 am-	Set the Scene from Stage 2 outcomes (Ralph Moyle, AIP)
10.15 am-	Interactive discussion- Participants to share their Journey through Stage 1 and 2
10.50am-	Where to from here? – Tools and Association information required for next step (Keith Chessell, AIP)
11.10am-	New Sustainable Packaging Guidelines (Ralph Moyle, AIP)
11.30am-	AIP (Nerida Kelton, Executive Director of AIP)
11.40am-	Introduction to Food Matrix (Samantha Alexandra, FoodSA)
11.45am-	Food Matrix and FIAL (Barry McGookin, General Manager Innovation of FIAL)
11.55am-	Closing summary
12.00pm-	Discussion closed



Appendix 8: Virtual Final Discussion, 23 July 2020





# Participant Feedback Form

Thank you for participating in Sustainable Save Food Packaging project. You have officially completed your Stage 2 program. As participants, your opinions are very important to us. Please share your feedback by answering these questions below.

Date: \*

Business name: \*

Contact name: \*

On a scale from 1 to 5, with 1 being poor, negative or unsatisfied and 5 being excellent, positive or satisfied, please answer the following questions about Stage 2

1. How much did you enjoy being part of Stage 2 program?

- ☐ 1. Very unsatisfied    ☐ 2. Unsatisfied    ☐ 3. Undecided  
☐ 4. Satisfied    ☐ 5. Very satisfied

2. What was your opinion about conducting Stage 2 in full virtual mode?

- ☐ 1. Very unsatisfied    ☐ 2. Unsatisfied    ☐ 3. Undecided  
☐ 4. Satisfied    ☐ 5. Very satisfied

3. Did the Stage 2 content meet your objectives?

- ☐ 1. Very unsatisfied    ☐ 2. Unsatisfied    ☐ 3. Undecided  
☐ 4. Satisfied    ☐ 5. Very satisfied

4. How would you rate your satisfaction during your one-on-one consultation session?

- ☐ 1. Very unsatisfied    ☐ 2. Unsatisfied    ☐ 3. Undecided  
☐ 4. Satisfied    ☐ 5. Very satisfied

5. How would you rate the level of new knowledge/ take home message obtained during your individual session?

- ☐ 1. Poor    ☐ 2. Bad    ☐ 3. Undecided    ☐ 4. Great    ☐ 5. Excellent

**6a. Assessment of facilitators- Ralph Moyle**

Mentoring and facilitation skills

- ☐ 1. Poor    ☐ 2. Bad    ☐ 3. Undecided    ☐ 4. Great    ☐ 5. Excellent

**6b. Assessment of facilitators- Ralph Moyle**

Ability to make session enjoyable

- ☐ 1. Poor    ☐ 2. Bad    ☐ 3. Undecided    ☐ 4. Great    ☐ 5. Excellent

**6c. Assessment of facilitators- Ralph Moyle**

Knowledge of topic area

- ☐ 1. Poor    ☐ 2. Bad    ☐ 3. Undecided    ☐ 4. Great    ☐ 5. Excellent

**7a. Assessment of facilitators- Keith Chessell**

Mentoring and facilitation skills

- ☐ 1. Poor    ☐ 2. Bad    ☐ 3. Undecided    ☐ 4. Great    ☐ 5. Excellent

**7b. Assessment of facilitators- Keith Chessell**

Ability to make session enjoyable

- ☐ 1. Poor    ☐ 2. Bad    ☐ 3. Undecided    ☐ 4. Great    ☐ 5. Excellent

**7c. Assessment of facilitators- Keith Chessell**

Knowledge of topic area

- ☐ 1. Poor    ☐ 2. Bad    ☐ 3. Undecided    ☐ 4. Great    ☐ 5. Excellent

**8. Is there anything else we can do to improve future projects?**

**9. Do you have any other comments or recommendations?**

**10. I grant permission for FoodSA to share my contact details to other participants for possible collaboration work.**

- ☐ Yes    ☐ No

---

☐ Send me a copy of my responses



ENGAGE

[fightfoodwastecrc.com.au](https://fightfoodwastecrc.com.au)

