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Phase 2 – Regulatory Landscape

2.4.2 Accelerating Food Transformation

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Executive Summary

Food waste is a growing social and environmental issue that needs to be addressed through a range of interventions across food systems.¹ One way to address food waste is to transform (a) food surplus from farms and (b) by-products created during food and beverage production by processing them into new food for human consumption. The new food created from surplus or from waste is commonly called “upcycled food” or otherwise known as “food waste valorisation” or “food waste and surplus transformation”.² Examples of upcycled foods include: oil made from fruit peels left over from making juice, muesli bars containing surplus cereals, plant-based protein made using spent grains and surplus vegetables and crackers containing surplus carrots. In addition to being one avenue to reduce food waste, upcycled food also has the potential to benefit communities while advancing manufacturing depending on the context.³

This project investigates upcycled foods in Australia with a focus on the challenges and opportunities faced by the sector. This interim report provides findings from Phase 2 of the project. This phase involved a legal and regulatory analysis of relevant regulation for upcycled foods with a view to understanding how law and policy could enable upcycled foods at state and federal levels. Our analysis also incorporated an investigation into how upcycled foods were regulated in other jurisdictions. A diverse range of legal regimes were analysed including food law, consumer law, therapeutic goods regulation, international food standards, as well as examples of laws and policies for upcycled foods from other jurisdictions.

Based on this analysis, we make the following findings:

1. No regulations in Australia appear to unduly burden upcycled foods, and this aligns with our findings from semi-structured interviews presented in our Phase 1 – Interim Report.
2. “Upcycled food” lacks a legal definition, which may hinder consumer trust, as suggested in Phase 1 of this research, and potentially creates a challenge for compliance with Australian Consumer Law.
3. The verification and accurate account of upcycled food claims, including claims related to waste diversion, is an increasingly important issue for the upcycled food sector.
4. There is some ambiguity about whether certain upcycled food products, especially those that are supplements and extracts, are a food or a medicine, which may in the future create risk and confusion.
5. While there appears to be no laws specific to upcycled food in comparable jurisdictions, the US has a third-party certification scheme, and a proposed law focused on public awareness regarding food waste that encompasses upcycled foods.

Part One of this report details the legal and regulatory framework for upcycled food in Australia. As a result of the analysis, we identified several legal areas which may affect the transformation of food surplus and waste into new food products. These include: food safety standards, labelling, novel foods regulation, therapeutic goods regulation and competition law. In this section, we also

¹ Simona Di Fraia et al, ‘A Comprehensive Review on Upscaling of Food Waste into Value Added Products towards a Circular Economy: Holistic Approaches and Life Cycle Assessments’ (2024) 143 *Trends in Food Science & Technology* 104288, 1.

² See Olivia Spratt, Rajneesh Suri and Jonathan Deutsch, ‘Defining Upcycled Food Products’ (2021) 19(6) *Journal of Culinary Science & Technology* 485; Jessica Aschemann-Witzel et al, ‘Defining Upcycled Food: The Dual Role of Upcycling in Reducing Food Loss and Waste’ (2023) 132 *Trends in Food Science & Technology* 132 (‘Defining Upcycled Food’).

³ See generally, Spratt, Suri and Deutsch (n 2); Hanieh Moshtaghian, Kim Bolton and Kamran Roustae, ‘Challenges for Upcycled Foods: Definition, Inclusion in the Food Waste Management Hierarchy and Public Acceptability’ (2021) 10(11) *Foods* 2874 (‘Challenges for Upcycled Foods’); Aschemann-Witzel et al (n 2).

identify a range of food waste policies at the state, territory and federal level including waste levies and policies related to reducing food waste that may indirectly enable upcycled foods though future policies could directly encompass upcycled foods.

In Part Two, we consider how international law and practices influence food transformation. We found no relevant laws in comparable jurisdictions to Australia regarding upcycled foods. Accordingly, in this section we focus on the emergence of upcycled food certification in the United States (US) and Canada, which can be understood as third-party regulation of upcycled food. Our analysis indicates that in the absence of state-based regulation, certification can have an important role in providing (1) a definition of upcycled food and (2) systems of verification. We also detail a proposed law in the US that briefly deals with upcycled food.

In Part Three of this report, we conclude with some recommendations for future work.

Appendix A provides a project summary, Appendix B contains a flowchart we created for upcycled food companies seeking to navigate the Australian legal landscape, and Appendix C contains a sample of relevant laws and policies in Australia and internationally.

This phase of the research was aided by the findings from Phase 1, which entailed semi-structured interviews with stakeholders to understand and evaluate barriers to, and opportunities for, upcycled food and related food surplus and waste transformation. In particular, Phase 1 findings were used to cross-check the results of our legal analysis and in particular ensure that no relevant legal obstacles or opportunities were overlooked. The following phases of this research will examine how Australian businesses are engaging in food surplus and waste transformation through a case study approach (Phase 3) and Australian consumer perceptions of upcycled foods (Phase 4).

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1. An Analysis of the Legal and Regulatory Landscape for Upcycled Foods in Australia

In Australian law, there is currently no mention of upcycled food. This means that upcycled food has not attracted a specific set of laws, policies or other types of regulations that distinctly deal with this new food category. As a result, there are no specific legal barriers that directly target upcycled foods in Australia. Regardless, several legal regimes regulate an upcycled product depending on the type of product. In this section, we detail the following five areas of law and policy as the most generally relevant for upcycled food: (1) food safety standards, (2) labelling, (3) novel foods, and (4) therapeutic goods approval (5) food waste policies. Our analysis of these legal areas particularly focuses on whether these regulations pose a particular barrier to upcycled food products. In addition to these areas of law, we also identify relevant regulations and guidelines regarding recycling, food waste, composting and landfill, which may have implications for upcycled food. We note also that, while there is social scientific literature on upcycled foods detailed in our Phase 1-Interim Report, we did not find any literature examining how upcycled foods is regulated in Australia or elsewhere, and this result aligns with our expectations of the field.

1.1 Food Safety Standards

The main legal instrument which regulates food is the Australia New Zealand Food Standards Code (the Code).⁴ As well as labelling standards and the pre-market approval process for novel foods detailed later, the Code provides food safety standards, food composition and the standards required for premises where food is being produced.⁵ Food Standards Australia and New Zealand (FSANZ) develop standards for the Code and as part of that role, performs pre-market approval processes. In Queensland, the standards are enforced through the *Food Act 2006* (Qld), *Food Regulation 2016* (Qld): *Food Production (Safety) Act 2000* (Qld) and *Food Production (Safety) Regulation 2014* (Qld).⁶

Relevant food standards for upcycled food include those specific to particular food products (e.g., required storage temperatures or ingredients for a specific type of food), types of packaging required (i.e., food-grade plastic), and labelling requirements (e.g. allergen labelling). Following a review of these standards, we could not identify a specific food safety standard that would disproportionately burden upcycled food products. This finding was also confirmed in Phase 1 of this project, as interviewees—who were primarily representatives of organisations currently engaged in food upcycling—did not identify any specific food standard that unduly impacted upcycled foods. As such, existing food standards related to food safety do not seem to generally or directly hinder upcycling practices in Australia.

Nevertheless, it is important for upcycled food companies to identify the relevant standards and at what point in the food transformation process they need to be met. An illustrative example of this is bakery goods, and in particular, bread. Bread can be made using by-products from other food processes, such as beer brewing, and it can also be a key ingredient in upcycled food, such as using unsold bread to make breadcrumbs. There are specific food safety standards and labelling standards that apply to bread as a food product.⁷ These standards relate to the environment within which the product was created, and the packaging and/or labelling associated with the product.

Beyond these specific standards, there are five national food safety standards that apply in Australia to food generally.

3.1.1 — Interpretation and Application

⁴ *The Australia New Zealand Food Standards Code* ('The Code').

⁵ See Queensland Government, 'Food Safety Regulation, Health and Wellbeing', *Food Safety Laws* (Government) <<https://www.qld.gov.au/health/staying-healthy/food-pantry/starting-a-food-business/food-safety-laws/food-safety-regulation>>.

⁶ *Food Act 2006* Qld; *Food Regulation 2016* Qld; *Food Production (Safety) Act 2000* Qld and *Food Production (Safety) Regulation 2014* Qld.

⁷ See *The Code* 2.1.1 and 1.2.10.

3.2.1 — Food Safety Programs

3.2.2 — Food Safety Practices and General Requirements

3.2.3 — Food Premises and Equipment

3.3.1 — Food Safety Programs for Food Service to Vulnerable Persons.⁸

Standards 3.1.1, 3.2.2 and 3.2.3 apply to all Australian food businesses regardless of whether they are commercial or home-based businesses. As such, the core standards for food safety do not vary regardless of the scale of the business. This is important for upcycling practices, as many upcycling start-ups initially operate on a small scale. The safety standards would apply to them the same as they apply to all other commercial and home-based food businesses. However, home-based businesses may be exempt from some requirements, including Standard 3.2.2 clause 17, and Standard 3.2.3 clauses 4, 10 and 14.⁹ These exceptions include: hygiene for food handlers—duties of food businesses, water supply, floors, and hand washing facilities. Any exceptions must be approved in writing by the appropriate enforcement agency.

Most upcycled food companies will also need to obtain a local food business license. Pursuant to the *Food Act 2006* (Qld), food businesses require a license from their local council. These licenses are required for most food businesses, including those that manufacture food or sell unpackaged food by retail. In accordance with guidance from the Queensland Government,¹⁰ there are a few exceptions to the requirement for a food business license with the most relevant exceptions for upcycled food companies being the preparation of unpackaged snack food (such as, cakes and biscuits without cream or custard, confectionary, potato chips, nuts) and the sale of food by a non-profit organisation that meets the exemption criteria. Based on our list of companies involved in upcycled foods developed for Phase 1 of this research, however, most upcycled food companies in Australia appear to be making packaged food. In instances where businesses are not required to obtain a food business license, they will still need to comply with the requisite food safety laws and regulations.¹¹

Food relief organisations could be interpreted as engaging in upcycling food where they obtain surplus food and convert it into meals, though this is debatable given the lack of clarity regarding how upcycled food is defined (which was discussed in our Phase 1 – Interim Report). The specific laws regulating food relief would be relevant in this context, as would the ways in which food standards influence the kinds of surplus foods food relief organisations can access.¹² However, a close examination of the laws regulating food relief are outside of the scope of this report.

1.2 Labelling

There are two regulatory frameworks relevant to labelling—The Food Safety Standards Code and Australian Consumer Law. We consider each of these in turn.

Chapter 1 of the Food Standards Code outlines the general labelling and information requirements relevant to all foods. Many of these requirements vary depending on the setting in which the products are manufactured, and no specific requirements exist for labelling upcycled food products. Chapter 2 of the Code outlines specific labelling and information requirements that apply to certain food products.

⁸ See *The Code* 3.3.1.

⁹ Food Standards Australia and New Zealand, *A Guide to the Food Safety Standards (Third Edition, November 2016)* (2016) 204, 204–210.

¹⁰ Queensland Government, 'Do I Need a Food Business Licence? | Food Business Licences' (Text) <<https://www.qld.gov.au/health/staying-healthy/food-pantry/starting-a-food-business/food-business-licences/do-i-need-a-food-business-licence>> ('Do I Need a Food Business Licence?').

¹¹ See *ibid.*

¹² For more information on food donation laws in Australia see Harvard Law School Food Law and Policy Clinic (FLPC), *Australia Legal Guide Food Donation Law and Policy* (Harvard Law School, June 2022) 31 <<https://www.foodbank.org.au/harvard-research-addresses-food-waste/>>.

There are standards relevant to the following topics:

- Allergen labelling
- Country of origin labelling
- Fish names
- Food allergies and intolerances
- Ingredients list and percentage labelling
- Labelling Review
- Nutrition, health, and related claims
- Pregnancy warning labels
- Truth in labelling, weights, measures, and legibility
- Warning and advisory statements

Whether these labelling standards apply to upcycled food products will depend on the type of product and the setting in which it is being made available.

In accordance with Standard 1.2.4, upcycled food manufacturers would have to label all the ingredients in their product in descending order of weight, as well as allergens, and this would include the component that was upcycled. Any compound ingredients, that is 'an ingredient of a food which is itself made from two or more ingredients',¹³ must be listed on the product and either a full list of its specific ingredients provided in brackets within the ingredient list or all ingredients provided in the main ingredient list.¹⁴ For instance, breadcrumbs made from surplus bread would need to list all the ingredients contained in the bread as well as any additional ingredients added into the breadcrumb mix.

The length of an ingredient list when upcycling manufactured foods, such as bread and bakery items, may be problematic when limited packaging space is available. As the upcycled food industry grows, clarification of best practice when constructing the ingredient list for upcycled foods may be required. We consider labelling further in Part Two when certification is examined.

Any claims on a label, or related marketing material, are subject to the prohibitions on false, misleading or deceptive representations under Australian Consumer Law.¹⁵ Upcycled food companies may claim that their product is 'upcycled' as well as other environmental claims such as 'helps reduce food waste' or 'better for the environment'. The Australian Competition and Consumer Commission ('ACCC') has identified misleading or false environmental claims as an enforcement priority.¹⁶ The ACCC has developed guidelines for businesses 'Making environmental claims' to avoid breaching the prohibitions on false, misleading or deceptive conduct.¹⁷ Upcycled food companies making claims on products should follow these guidelines to avoid potential breaches of consumer law.

In relation to claims that a product is 'upcycled', a particular risk area is where an upcycled food company makes a claim that the product is upcycled when only a certain proportion of the product is upcycled.¹⁸ This would be particularly problematic, from the perspective of misleading and deceiving consumers, is if only a small proportion was upcycled, and what is a small would depend

¹³ *The Code* 1.2.4-1(1).

¹⁴ *The Code* 1.2.4-6(1).

¹⁵ *Competition and Consumer Act 2010* (Cth) sch 2 ss 18, 29, 33.

¹⁶ Australian Competition and Consumer Commission, 'Compliance and Enforcement Priorities' (Text, 7 March 2024) <<https://www.accc.gov.au/about-us/accc-priorities/compliance-and-enforcement-priorities>>.

¹⁷ ACCC, *Making Environmental Claims* (Australian Competition and Consumer Commission, 12 December 2023) <<https://www.accc.gov.au/about-us/publications/making-environmental-claims-a-guide-for-business>>.

¹⁸ *Ibid* Principle 3.

on context.¹⁹ Accordingly, upcycled food companies should clearly specify the proportion of the product that is upcycled to consumers. There is a risk with a broad 'upcycled' certification mark that consumers will be misled into thinking the product is fully upcycled (or the business) or that it is environmentally sustainable across a range of metrics.²⁰ Clear qualification of what the certification mark verifies is required to counteract this risk.

In relation to more general environmental claims, upcycled food companies should avoid generic claims like 'sustainable' or 'better for the planet' unless they have comprehensive evidence about the positive environmental impact of their product's lifecycle that also takes into account the negative impacts.²¹ Currently, the Senate Environment and Communications References Committee is holding an inquiry into greenwashing, that is, the making of false or misleading environmental messages in labelling and marketing.²² Hence, further law reform in this space may follow. Moreover, various comparable jurisdictions to Australia are introducing new laws that, among other things, require companies ensure their environmental claims are evidenced and not generic.²³

1.3 Novel Foods Regulation

Unless permitted by the Code, a food cannot be sold if it is "novel".²⁴ . In other words, novel foods must undergo a pre-market approval process. A novel food has two main elements: (1) a non-traditional food (2) that requires an assessment of the public health and safety considerations.²⁵ Food upcycling is an emerging area within the food manufacturing and waste management hierarchy. Whilst it is new, it does not necessarily mean that an upcycled food product will satisfy the definition of novel and in doing so require pre-market approval. A non-traditional food is any food or substance that does not have a history of human consumption in Australia or New Zealand.²⁶ A food can be non-traditional but not raise public health and safety concerns, and so not be "novel" under the regime.

Upcycled food products commonly use surplus from farms or by-products from food and drink manufacturing, and as such do not generally meet the definition of "non-traditional".²⁷ If an advanced manufacturing technique is used to derive a substance from a surplus food or by-product that has not previously been eaten, then it would still need to raise public health and safety considerations including potential for adverse effects on humans. In cases where an upcycled food product is novel, a company can seek the opinion of the Advisory Committee on Novel Foods under FSANZ to suggest whether any approval or action is required.

Other jurisdictions, such as Singapore, have less burdensome rules related to novel foods which may influence the types of upcycled foods that could be produced but also their approach is less public and comprehensive.²⁸ It is notable that the US is a

¹⁹ See *Telstra Corporation Limited v Singtel Optus Pty Ltd* [2020] FCA 1372; *Parkdale Custom Built Furniture Pty Ltd v Puxu Pty Ltd* (1982) 42 ALR 1.

²⁰ ACCC (n 17) 29. We note that the ACCC has a role in approving trademark certification marks and so would consider the quality of any upcycled certification scheme at this point: *Trade Marks Act 1975* s 175.

²¹ ACCC (n 17) Principle 5.

²² See Senate Standing Committees on Environment and Communications, Senate Inquiry, 'Greenwashing' https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Greenwashing.

²³ See, eg, European Commission, *Proposal for a Directive of the European Parliament and of the Council on Substantiation and Communication of explicit environmental claims (Green Claims Directive)* [2023] 2023/0085; Council Directive 93/12/EEC of 5 April 1993 on Unfair Terms in Consumer Contracts [1993] OJ L 95/29, art; Parliament and Council Directive 2024/825 of 28 February 2024 on *Amending Directives 2005/29/EC and 2011/83/EU as regards empowering consumers for the green transition through better protection against unfair practices and through better information* [2024] OJ L Annex (2).

²⁴ *The Code* 1.1.1-10(5)

²⁵ *The Code* 1.5.1-1.

²⁶ *The Code* 1.5.1-1.

²⁷ Academic discourse around upcycled and novel food suggest that the best type of upcycled food is food made from ingredients that were previously considered inedible (and potentially novel). See Aschemann-Witzel et al (n 2).

²⁸ See <https://www.sfa.gov.sg/food-information/novel-food/novel-food> in particular the self-assessed safety assessments.

leading jurisdiction for upcycled foods and it also does not have a novel food pre-market approval process. However, in reviewing the types of upcycled food products being produced or under development in Australia, our hypothesis is that most upcycled foods are unlikely to meet the definition of novel at this point in time, and so we suggest it is unlikely that Australia's pre-market approval process for novel foods is acting as a barrier in the current market.

1.4 Therapeutic Goods Regulation

Unlike food which, as discussed, does not often require pre-market approval unless it is novel, medical and biological products require pre-market approval through the *Therapeutic Goods Act 1989* (Cth) administered by the Therapeutic Goods Administration (TGA).²⁹ Generally, the standards required to be met for therapeutic goods compared to food are also more complex and costly. Most upcycled food products would not require TGA approval by virtue of being food products (as opposed to being therapeutic goods), however, there may be instances where a food product is more analogous to a therapeutic good and in which case should be regulated by the TGA.

The legal definition of food includes 'any substance or thing of a kind used, capable of being used, or represented as being for use, for human consumption (whether it is live, raw, prepared or partly prepared)' including anything that is an ingredient or additive in such a substance and anything used in preparing such a substance.³⁰ However, food does not include a therapeutic good as defined in the *Therapeutic Goods Act 1989* (Cth).³¹ A therapeutic good means, among other things, goods that are 'represented in anyway to be, or that are, whether because of the way in which the goods are presented or for any other reason, likely to be taken to be: (i) for therapeutic use; or (ii) for use as an ingredient or component in the manufacture of therapeutic goods'.³² Therapeutic use 'means use in or in connection with: (a) preventing, diagnosing, curing or alleviating a disease, ailment, defect or injury in persons; or (b) influencing, inhibiting or modifying a physiological process in persons; or (c) testing the susceptibility of persons to a disease or ailment; or (d) influencing, controlling or preventing conception in persons; or (e) testing for pregnancy in persons; or (f) the replacement or modification of parts of the anatomy in persons'.³³

Hence, the distinction between food and therapeutic goods is blurred where a product designed to be eaten significantly focuses on its health benefits such as preventing a disease, influencing conception, or changing physiological processes.³⁴ Moreover, there is potential for an upcycled food company, especially one using surplus fruit and vegetables, to extend into supplements, which may be regulated by the TGA. Essentially, if an upcycled food product is a therapeutic good then manufacturers will have to meet the standards for therapeutic goods, including obtaining a TGA license for their facility and meeting requirements around packaging and advertising.³⁵ Compliance with TGA is generally more costly than for food, as identified in our Phase 1 - Interim Report.

The TGA has developed the Food-Medicine Interface Guidance Tool (FMIGT) to help businesses correctly identify whether their product is a food or a therapeutic good.³⁶ However, there is still a risk that upcycled food companies may incorrectly identify a product as a food that should be regulated as a therapeutic good. This may mean their product avoids the correct regulatory oversight and that they later find themselves in violation of the *Therapeutic Goods Act 1989* (Cth).

²⁹ *Therapeutic Goods Act 1989* (Cth) s 19.

³⁰ *Food Standards Australia and New Zealand Act 1991* (Cth) s 5.

³¹ *Therapeutic Goods Act 1989* (Cth) s 3, "Therapeutic goods" (e) and (f).

³² *Therapeutic Goods Act 1989* (Cth) s 3.

³³ *Ibid.*

³⁴ As per the definition of "therapeutic good" and "therapeutic use" in s 3 of the *Therapeutic Goods Act 1989* (Cth).

³⁵ *Therapeutic Goods Act 1989* (Cth) Part 3-3 Manufacturing of therapeutic goods.

³⁶ Therapeutic Goods Administration, 'Food-Medicine Interface Guidance Tool (FMIGT) | Therapeutic Goods Administration (TGA)' (text, 19 August 2022) <<https://www.tga.gov.au/food-medicine-interface-guidance-tool-fmigt>>.

1.5 Competition Law

While the direct relevance of competition law to the day-to-day operations of upcycled food companies varies depending on context, we have identified a particularly relevant application of this area of law to upcycled food companies. Here we use the example of upcycled food companies that use by-products created by other companies to make new products. Examples of these kinds of companies in the US include upcycled food companies that take pulp from fruit juice companies to make chips or uses fresh whey from yoghurt manufacturing to create a probiotic drink.³⁷ Similarly, in Australia and New Zealand, there are a range of companies that use waste and surplus created during manufacturing to create new products. These upcycled food companies rely on contracts with other companies for the inputs required to create upcycled foods, that is, company A will agree to sell or give a particular by-product to company B.³⁸ Under Australian Competition Law, various business practices are considered to be 'exclusive dealing' practices', and these are prohibited where they 'have the purpose, or has or is likely to have the effect, of substantially lessening competition'.³⁹ For instance, upcycled food companies may be prohibited from entering contracts that require the company providing the by-product only sell it to them if such conduct is aiming to, has, or is likely to, substantially lessen competition.⁴⁰ The reverse is also applicable: companies providing a by-product to an upcycled food company cannot legally require that the upcycled food company only obtain by-products from them or from a select group of companies where such requirements may substantially lessen competition.⁴¹ There are other, similar practices considered to be exclusive dealing that could be relevant to these types of supply chains and the provisions on exclusive dealing would also be relevant to farms entering into contracts to sell surplus. Generally, at the current stage of the upcycled food sector in Australia, there are not enough competing companies that exclusive dealing practices are likely to become an issue in the short-term, as the impact of such arrangements are perhaps unlikely to substantially lessen competition given the lack of competitors. Regardless, upcycled food companies do rely on a steady supply of surplus or by-products, and some companies providing by-products do not want to mix their by-products with that of competitors, so this area of law could become an issue for companies if the upcycled food sector expands and there are many more companies engaging in upcycling.

1.6 Food waste Policies

Over the last decade, Australian state and territories have created a range of strategies and policies relating to food waste.⁴² Given the quantity of these, we have included a sample of such policies in Appendix C. From an analysis of these policy documents, we observe that upcycled food is not commonly mentioned or prioritised as a food waste strategy. Hence, there is an opportunity for future food waste policies to highlight the role of upcycled foods. At the same time, we note that the role of upcycled foods as a food waste diversion strategy has been contested (as detailed in our Phase 1 - Interim Report). Thus, any inclusion of upcycled foods would need to define the concept and delineate when it has a role in food waste diversion.

2. International Upcycled Food Regulation

In this section, we present findings from our analysis of law and policy from other jurisdictions that intersect with upcycled foods. Our analysis did not identify any specific law dealing directly with upcycled foods in comparable jurisdictions to Australia or

³⁷ Victoria Namkung, 'From Trash to Table: Will Upcycled Food Save the Planet?', *The Guardian* (online, 22 February 2024) <<https://www.theguardian.com/environment/2024/feb/22/us-food-waste-upcycling-snacks>> ('From Trash to Table').

³⁸ In some instances, companies will give the by-product away for free where there is no other market for the by-product and where providing it to an upcycled food company reduces its waste and potentially, therefore, landfill levies and related costs.

³⁹ *Competition and Consumer Act 2010* (Cth) ss 47(1), (10)(a).

⁴⁰ *Ibid* s 47(4)(b).

⁴¹ *Ibid* s 47(2)(d).

⁴² Paul Perovic and Hope Johnson, 'Food for Thought: An Assessment of Australian Law and Regulation for Combating Food Waste' (2023) 39(4) *Environmental and Planning Law Journal* 354 ('Food for Thought').

highlighted in legal literature. Thus, in this section we begin by detailing international regulation that is relevant to upcycled foods and providing some examples of key food waste policies from comparable jurisdictions. We then consider a law proposed in the US which mentions upcycled foods and detail how the third-party certification scheme for upcycled foods in the US and Canada operates.

2.1 Public international standards

At an international level, food standards are contained in the Codex Alimentarius Commission (Codex), which is a set of food standards and guidelines developed and adopted by the intergovernmental Codex Alimentarius Commission.⁴³ The Codex was established by the United Nations Food and Agricultural Organization and the World Health Organization. The Codex has not considered upcycled food as a distinct food category, and as such there are no international standards only applicable to upcycled food. Regardless, Australian and New Zealand food standards are generally consistent with the Codex. Therefore, the standards that upcycled food products have to meet by virtue of being food, and as identified in Part 1, are broadly consistent with international standards.

2.2 Upcycled food regulation in other jurisdictions

The research did not identify any specific laws in force by a national government for upcycled foods. Similar to Australia, upcycled foods are regulated the same as other foods. For instance, in the EU, food products are regulated based on their final use.⁴⁴ In terms of upcycled food products, the food or food ingredient needs to comply with the European Commission Regulations; however, there is no specific legislation that addresses upcycled food.⁴⁵

Similar to Australia, there are a range of food waste policies that intersect with upcycled foods in other jurisdictions. Below is a sample of some of the international initiatives around food waste, which are also detailed in Appendix C. However, other than in the US there are no specific items that deal with upcycling. We consider the US example in-depth in the next sub-sections.

| International Regulation - Food Waste | | |
|---------------------------------------|----------------------|--|
| Location | Name of Plan/Roadmap | Objectives |
| UK | WRAP Plan 2015-2020 | This cross-sectoral plan includes food (among other things). Aims to re-invent how food products are designed, sourced, and processed. Connects with the Courtauld Commitment ⁴⁶ and the Hospitality and Food Service Agreement. |

⁴³ 'Codex Alimentarius Commission' <<https://www.foodstandards.gov.au/science/international/codex/pages/default.aspx>>.

⁴⁴ Bárbara Socas-Rodríguez et al, 'Food By-Products and Food Wastes: Are They Safe Enough for Their Valorization?' (2021) 114 *Trends in Food Science & Technology* 133, 134–135 ('Food By-Products and Food Wastes').

⁴⁵ European Commission Regulation No, 178/2002 or in instances where the food by-product used as food additives, the European Commission Regulation No, 1333/2008 applies.

⁴⁶ See *The Courtauld Commitment 2030: Progress and Insights Report 2022* <<https://wrap.org.uk/resources/report/courtauld-commitment-2030-progress-and-insights-report-2022>> ('*The Courtauld Commitment 2030*').

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| UK | UK 'Love Food Hate Waste' Resource Pack for Hospitality and Food Sector | Provide advice, activities, and resources to a wide range of organisations. |
| France | 'France moves toward a national policy against food waste' | In 2015, France passed a bill which prohibited large supermarkets from throwing away edible food. The report expands and develops ideas raised by WRAP. |
| Italy | The Bologna Charter Against Food Waste | This document was presented to stakeholders during consultation in November 2014, to chart the way toward establishing food waste legislation. |
| European Commission | The Roadmap to a Resource Efficient Europe | The Roadmap outlines how Europe's economy can be transformed into a sustainable one by 2050. It proposes ways to increase resource productivity and decouple economic growth from resource use and its environmental impact. It illustrates how policies interrelate and build on each other. |
| USA | Upcycled Food Association and Upcycled Food Certification | Grassroots movement to support upcycled food. |
| Scotland | Food waste reduction: action plan | Sets out how Scotland can work to deliver its commitment to reduce food waste by 33% by 2025. |
| Sweden | IVL Swedish Environmental Research Institute Ltd. | This project was initiated by the Nordic Council of Ministers and its waste prevention group and focused on food waste within the retail sector, initiatives to reduce the amounts of food waste and provides recommendations. |

2.3 Proposed US Law: NO TIME TO Waste Act

In the US, a bill has been introduced entitled the New Opportunities for Technological Innovation, Mitigation, and Education to Overcome Waste, which is also referred to as the NO TIME TO Waste Act.⁴⁷ At the time of writing, it has not yet passed the Senate or the House. The Act, which draws on recommendation made by the Zero Food Waste Coalition, is focused on reducing food waste in a range of ways, including by increasing public awareness and supporting government and private actions in this space.⁴⁸ As part of this, it identifies upcycled foods as one area to advance through these strategies. Importantly, given the lack of definitional clarity regarding upcycled foods, it includes a definition of upcycled foods as ‘The term “upcycled food product” means a product that - (A) is created from surplus food, unmarketable food, or edible or inedible food byproducts; and (B) is made with ingredients that— (i) otherwise would not have gone to human consumption; (ii) are sourced and produced using supply chains for which upstream data can be verified and validated for accuracy; and (iii) have a positive impact on the environment.’⁴⁹ This is the same definition developed by the Upcycled Food Association.⁵⁰ The Bill provides for a public campaign that educates ‘consumers on food products made with food waste, including upcycled foods...’⁵¹ In Australia, we would not usually pass a law for a public campaign, but it is noteworthy that a commonly used definition of upcycled foods has support as a legal definition.

2.4 Upcycled Food Certification and Upcycled Food Association in the US and Canada

In the US, a non-state party actor, namely the Upcycled Food Association (UFA), has created standards for upcycled food. The UFA is an industry group focused on advancing upcycling. It has four main objectives: (1) attracting more investment to the upcycled industry; (2) improving the upcycled business network; (3) improving the upcycled supply chain; and (4) increasing consumer demand for upcycled food products. As part of achieving these goals, the UFA have developed a certification scheme through which manufacturers and producers apply to use the “upcycled certified” trademark on their products.⁵² This certification scheme is the first in the world to focus on upcycled food.⁵³ As noted by Thorsen et al, certification helps to ‘...build consumer confidence’ by providing a process which ‘verifies the input ingredients as upcycled and ensures they are present in meaningful amounts in the finished product’.⁵⁴

The Upcycled Certification Standard (Version 2) creates three distinct categories, called designations, for obtaining certification with a upcycled food product falling into one of these categories. The first is as an “upcycled ingredient”, which means the ingredient or food product is composed of >95% upcycled input by weight. It may comprise multiple inputs, including <5% (by weight) processing adds or other additives, and be sold to a manufacturer or a consumer. The second is “product containing upcycled ingredient”, which applies to products that either (a) contain an upcycled ingredient, where the ingredient must be at least 10% of the end product by weight, or (b) meet or exceed an annual total tonnage of inputs threshold (e.g., if a business earns less than \$US 2 million then it must use >5 tons per year of inputs). The last designation is “minimal content product containing upcycled ingredient” and is a designation for products that do not meet or exceed the threshold of at least 10% input (by weight or tonnage) diverted

⁴⁷ *New Opportunities for Technological Innovation, Mitigation, and Education To Overcome Waste Act*, S 2889, 118th Congress (2023).

⁴⁸ See Nina Sevilla, ‘Congress Says: No Time to Waste! A New Bipartisan, Bicameral Bill Offers an Opportunity for Congress to Make Meaningful Progress towards Our National Goal of Cutting Food Waste in Half.’ (21 September 2023) <<https://www.nrdc.org/bio/nina-sevilla/congress-says-no-time-waste>> (‘Congress Says’); Emily M Broad Leid, *Opportunities to Reduce Food Waste in the 2023 Farm Bill* (Food Law and Policy Clinic Harvard Law School, NRDC, REFed and WWF, 26 April 2022) 62 <<https://www.nrdc.org/bio/yvette-cabrera/opportunities-reduce-food-waste-2023-farm-bill>>.

⁴⁹ *New Opportunities for Technological Innovation, Mitigation, and Education To Overcome Waste Act*, S 2889, 118th Congress (2023), § 2(10).

⁵⁰ See ‘Upcycled Certification Standard’

<https://static1.squarespace.com/static/606ce580b6b9b6777f470253/t/60c9672dc219224d15b84851/1623811901655/Upcycled+Certification+Standard_June+2021.pdf>.

⁵¹ *New Opportunities for Technological Innovation, Mitigation, and Education To Overcome Waste Act*, S 2889, 118th Congress (2023), § 8(b)(7).

⁵² ‘Upcycled Certification Standard’ (n 46).

⁵³ Upcycled Food Association, ‘The Upcycled Certification Standard Has Arrived!’, *Upcycled Food Association* (13 January 2024)

<<https://www.upcycledfood.org/blog/the-upcycled-certification-standard-has-arrived>>.

⁵⁴ Margaret Thorsen et al, ‘Upcycled Foods: A Nudge toward Nutrition’ (2022) 9 *Frontiers in Nutrition* 1071829 (‘Upcycled Foods’).

from waste, but that otherwise comply with the standard. Hence, a broad range of upcycled food products could be eligible for certification.

The remaining standards focus on, among other things, the type and level of evidence that the manufacturer provides to achieve certification. This includes evidence about the nature of the upcycled input, chain of custody evidence, and details about how much food waste is generated through processing.

The products are assessed by the third-party certifying body, Where Food Comes From Inc, which is a company that specialises in third-party food verification. The costs associated with obtaining certification varies depending on the product/s and includes an enrolment fee of USD\$695, a product review fee of USD\$1250, a facility review fee of USD\$500, a new participant fee of USD\$250, and licence fees starting from USD\$219 per annum.⁵⁵ The overall timeline associated with obtaining an upcycled certification takes 3-4 months and depends on the number of products being examined.

Whilst the UFA is currently only trademarked in the US and Canada, the company indicated that they are interested in international expansion of the certification.⁵⁶ The certification cannot currently be used in Australia.⁵⁷ Australian and New Zealand upcycled food products, however, an Australian company can still be listed on the UFA member directory. For example, Australian product Extracta is currently listed on the member directory.⁵⁸

The current Upcycled Food Certification scheme may be a model for Australia. However, it is likely that more information is needed requiring Australian consumer understanding and acceptance of upcycled food. Without consumer understanding and acceptance, upcycled food certification may lack impact.

3. Conclusions & Recommendations

This legal analysis did not identify any regulatory barriers that uniquely impact on upcycled foods nor are there any leading examples of laws from other jurisdictions that enable the production of upcycled foods. In fact, there is a gap in food waste policy generally regarding upcycled foods, though this may reflect the contested role of upcycled foods as a food waste strategy.⁵⁹ Phase 1 of this research supports the finding that in Australia, there is no specific regulatory barriers for upcycled food. More specifically, upcycled food companies and stakeholders interviewed for Phase 1 did not identify any particular laws and standards that were especially burdensome for, or restrictive of, upcycled foods nor did these actors generally consider food law and standards difficult to navigate. Rather, Phase 1 uncovered a range of strategic ways to enable upcycled food outside of law reform, as outlined in our Phase 1 - Interim Report.

The lack of a legal definition of upcycled food, highlighted through this research but also in Phase 1, is an area for regulators to consider when seeking to enable the sector. A consistent definition of upcycled food is especially important in light of the need to ensure upcycled food claims relating to waste diversion and environmental impacts are accurate and appropriately communicated

⁵⁵ See Upcycled Association, 'Upcycled Certified Annual Program Fees' <<https://www.upcycledfood.org/home>>.

⁵⁶ Francesca Goodman-Smith, *Upcycled Food* (Final Report, Winston Churchill Memorial Trust, February 2024) 40.

⁵⁷ See Upcycled Food Association, 'Upcycled Certified Eligibility Checklist' <<https://static1.squarespace.com/static/606ce580b6b9b6777f470253/t/63fd27072ebef0f974f54db/1677534983827/Upcycled+Certified+Eligibility+Checklist.pdf>> As noted in the eligibility checklist, it is a requirement that the products be sold within the US or Canada. Upcycled Food Association, 'Upcycled Food Association Upcycled Certified™ Mark Usage Guide'.

⁵⁸ Upcycled Food Association, 'Member Directory', *Upcycled Food Association* <<https://www.upcycledfood.org/member-directory>>. There was another Australian company listed, 'BB Food Co', however their website is no longer accessible.

⁵⁹ Jessica Aschemann-Witzel et al, 'Defining Upcycled Food: The Dual Role of Upcycling in Reducing Food Loss and Waste' (2023) 132 *Trends in Food Science & Technology* 132 ('Defining Upcycled Food'); Moshtaghian, Bolton and Rousta (n 3). This was also detailed in our Phase 1- Interim Report.

to consumers. Creating a legal definition may also foster consumer understanding and trust, which was identified as a challenge in Phase 1. However, there are many food categories that do not have a legal definition, for instance, meat and dairy alternatives or functional foods. As such, creating a legal definition of upcycled food would be a significant development in food law.

This report also uncovered two significant legal issues that upcycled food companies need to navigate that fall outside of food law and policy. Firstly, upcycled food companies need to consider the ways in which they verify waste diversion claims and related environmental claims. While a certification scheme may help with this, the ways in which companies communicate what the certification scheme verifies is important. If upcycled food companies were to generate and provide more evidence regarding waste diversion, this would not only enable their compliance with Australian Consumer Law, but would also be helpful for public policy makers in understanding the level of waste diversion being achieved by upcycled food companies. Secondly, some upcycled food companies will need to consider whether they are manufacturing a food or medicine, and therefore which regulatory regime their product falls under. This can be, depending on the context, a very important but complex legal question to answer.

4. Acknowledgements

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Upcycled Food Association, 'Upcycled Food Association Upcycled Certified™ Mark Usage Guide'

APPENDIX B – The Legal and Regulatory Flowchart for Upcycled Food Products

| Upcycled Foods – A Quick Guide to Australian Law and Regulation | | |
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| Will the product be a food or a therapeutic good? See the Food-Medicine Interface Guidance Tool | | |
| Where is the Product Manufactured/Made? | | |
| Upcycled from Farm Gate | Home Based Products | Upcycled in Manufacture Process |
| Food Safety Standards Local Council Licence (Standards 3.1.1, 3.2.2 and 3.2.3) | Food Safety Standards Local Council Licence (Standards 3.1.1, 3.2.2 and 3.2.3) NB: Excluding Standard 3.2.2 clause 17, and Standard 3.2.3 clauses 4, 10 and 14 | Food Safety Standards Local Council Licence (Standards 3.1.1, 3.2.2 and 3.2.3) |
| Does the Product require a Food Business License? See <i>The Food Act 2006</i> - Exclusions includes unpackaged snack food, whole fruit and vegetables and seeds, spices, dried herbs, tea leaves, coffee beans. | | |
| Food Safety Code Chapter 1 and 2. - See Chapter 2 for specific foods. | Home based products need to comply with the relevant labelling standards (See Part 1.2 of the Food Standards Code) when a product is required to bear a label and the specifics of what must be included in the label. | Food Safety Code Chapter 1 and 2. - See Chapter 2 for specific foods. |
| Does the product require packaging and labelling? See Standard 3.2.2 - Food Safety Practices and General Requirements. | | |
| Does the product have any environmental claims or certifications? See ACCC guidelines | | |
| Does the upcycled product contain known allergens or any other Nutrition, health, and related claims or warning statements. Other sections of the Food Standards Code may apply ie. See Standard 1.2.3 and Schedule 9 for allergen requirements. | | |
| Is the upcycled food product a non-traditional food that may be considered novel? Novel foods require assessment by FSANZ to establish their safety before they are added to the food supply. - see Standards 1.1.1 and 1.5.1 in the Australia New Zealand Food Standards Code. | | |

APPENDIX C – Sample of relevant legislation, policy, standards and guidelines

| Jurisdiction | Title | Description and Relevance to Upcycled Food Products and Potential Barriers |
|-----------------------------|---|---|
| Australia – National | | |
| Australia | ANZ Food Standards Code 1.2.5 – Date Marking of Food for Sale. | <p>Part of the Australia New Zealand Food Standards Code, which was created under the <i>Food Standards Australia New Zealand Act 1991</i>.</p> <p>Standard 1.2.5-2 – definitions of ‘use by’, ‘baked on’, ‘best before’ etc.</p> <p>May apply to upcycled food products if they meet the definitions of ‘baked bread’ or meet the requirements of needing a ‘best before’ date. There are also requirements to ensure the food remains in an intact package during its storage and is stored in accordance with any storage conditions (see Standard 1.2.6 below).</p> |
| Australia | ANZ Food Standards Code 1.2.6 – Information requirements – directions for use and storage. | <p>Part of the Australia New Zealand Food Standards Code, which was created under the <i>Food Standards Australia New Zealand Act 1991</i>.</p> <p>Standard 1.2.6-1 – for labelling provisions, storage conditions and directions for use of food</p> <p>Standard 1.2.6-2 – Directions for use, and statement of storage conditions</p> <p>According to 1.2.6-2 (a – (c)) food must be stored in certain conditions. Depending on the type of upcycled food, some of these conditions may apply.</p> |

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| Australia | ANZ Food Standards Code 2.3.1 – Fruit and Vegetables. | <p>Exemplary of the specific standards applied to individual types of food.</p> <p>Standard 2.3.1 – fruit and vegetables</p> <p>Standard 2.2.1 – meat and meat products</p> <p>NB: There are specific standards that apply to specific types of food.</p> |
| Australia | ANZ Food Standards Code, Section 1.1.2—8. | <p>Novel foods under the ANZ Food Standards Code.</p> <p>The definition of novel food includes ‘non-traditional food’.</p> <p>Possible categories of novel foods include:</p> <ul style="list-style-type: none"> - plants or animals and their components; - plant or animal extracts; - herbs, including extracts; - dietary macro-components; - single chemical entities; - microorganisms, including probiotics; |

| | | |
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| | | - foods produced from new sources, or by a process not previously applied to food. |
| Australia | Australian Standard – Biodegradable plastics suitable for home composting (AS 5810-2010). | Specifies requirements and procedures to determine whether a plastic material is biodegradable in home composting conditions. Stipulates a pass/fail criteria addressing biodegradability. Section 4 – General requirements and considerations. Includes a brief overview of the form, components, and conditions for compostable plastics. |
| Australia | Australian Standard - Biodegradable plastics suitable for composting and other microbial treatment (AS 4736-2006). | Specifies the criteria against which plastic materials that are to be biodegraded in industrial anaerobic composting facilities are assessed. |
| Australia | Australian Standard -Composts soil conditioners and mulches (AS 4454-2012). | Specifies physical, chemical, biological, and labelling requirements for composts, mulches, soil conditioners and related products that have been derived from compostable organic materials. Section 1.2 – Application Section 1.3 – Objective Section 2 – General requirements |

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| | | <p>State/territory application of AS 4454:</p> <ul style="list-style-type: none"> - SA - For quality assurance the SA guidelines recommend that several standards, including AS4454, be adopted when setting environmental goals and quality parameters. - NSW organics processing guidelines specify that products should meet the requirements of AS4454. - Victoria acknowledges that AS4454 is a voluntary standard and that their organics processing guidelines have been informed by elements of the 2012 edition of AS4454 that relate to environment protection. - The relevant WA guidelines acknowledge that compost products may be fit-for-purpose for a specific end use without meeting the specifications in AS4454. - There are not AS 4454 specifications listed in the Queensland composting guidelines. It states that AS4454 provides relevant information on certain aspects of the composting process. The document, 'Model operating conditions ERA 53(a)—Organic material processing by composting' does not refer to AS4454. |
| Australia | AS4419–2018 Soils for landscaping and garden use and AS3743–2003 Potting mixes. | <p>Other Australian Standards relevant to end-product standards.</p> <p>Provides manufactures with a set of requirements which will ensure that soils can support plant growth and to give users, such as growers, landscape architects and consumers, assurance of the suitability and quality of soil.</p> |
| Australia | AS 14021:2018 Environmental Labels and Declarations and AS | Specifies standards for environmental labelling and requirements for self-declared environmental claims, including statements, symbols, and graphics, regarding products. |

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| | ISO 14020:2015 Environmental labels and declarations - General principles. | |
| Australia | Australian Standard – SAA Packaging Code Part 16 – Flexible Packaging. | Provides information on flexible packaging, e.g., regenerated cellulose film, plastic films, aluminium foil, and flexible laminates. This Standard may be relevant for food waste purposes because flexible packaging is extensively used for fruit and vegetables, and some biodegradable plastics may be composted along with food waste (see also Australian Standard for biodegradable plastics suitable for home composting). |
| Australia | AS 4439.2 2019 – Waste, sediments and containment soils, Part 2: Preparation of leachates – Zero headspace procedure and AS 4439.3 2019 – Wastes, sediments, and contaminated soils; preparation of leachates, Part 3: Preparation of leachates – Bottle leaching procedure. | This Standard provides an outline for preliminary assessment of the potential for liquid or solid waste, sediments, sludges, and soils to contaminate groundwater. It must be used in conjunction with AS 4439.2 and AS 4439.3, which also relate to the preparation of leachates, and applied in consultation with the appropriate regulatory authorities. |

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| Australia | <i>Food Standards Australia New Zealand Act 1991 (Cth).</i> | <p>Provides the legislative basis for the ANZ Food Standards Code and establishes Food Standards Australia New Zealand to administer the code.</p> <p>The definitions of ‘food’ may be a helpful starting point for determining a definition of ‘food waste’ which includes:</p> <p>(a) any substance or thing of a kind used, capable of being used, or represented as being for use, for human consumption (whether it is live, raw, prepared or partly prepared); and (b) any substance or thing of a kind used, capable of being used, or represented as being for use, as an ingredient or additive in a substance or thing referred to in paragraph (a); and (c) any substance used in preparing a substance or thing referred to in paragraph (a); and (d) chewing gum or an ingredient or additive in chewing gum, or any substance used in preparing chewing gum; and (e) any substance or thing declared to be a food under a declaration in force under section 6. (It does not matter whether the substance, thing or chewing gum is in a condition fit for human consumption.) (2) However, food does not include a therapeutic good within the meaning of the Therapeutic Goods Act 1989. (3) To avoid doubt, food may include live animals and plants.</p> <p>See also, Section 16 which mentions food handling and ‘dispose of food’.</p> |
| Australia | National Waste Policy Action Plan 2019. | <p>The National Waste Policy Action Plan 2019 created targets and actions to implement the 2018 National Waste Policy.</p> <p>The National Waste Policy Action Plan includes targets and actions concerning food waste prevention, increasing the recovery of food and organic waste, and diverting it from landfill.</p> |
| Australia | PFAS National Environmental Management Plan 2.0. | <p>The PFAS National Environmental Management Plan establishes a practical basis for nationally consistent environmental guidance and standards.</p> |

| Australia – State Level Regulations | | | |
|-------------------------------------|--|---|--|
| New South Wales | <i>Protection of the Environment Operations (Waste) Regulation 2014</i> (NSW). | Deals with transport, reporting, and safe disposal of waste. Does not deal expressly with food waste but contains general information which may be relevant. | |
| Queensland | <i>Environmental Protection Regulation 2008</i> (Qld). | <p>Covers a vast array of topics relating to environmental protection.</p> <p>Part 6 – Food processing including bottling and canning.</p> <p>Part 9 – Waste tracking – refers to food transported under the ANZ Standards</p> <p>Part 12 – Waste Management - refers to composting including organic waste and animal by products and plant materials.</p> <p>Schedule 2 Part 1 – Aquaculture and intensive animal industry.</p> | |
| Queensland | <i>Waste Reduction and Recycling Regulation 2011</i> (Qld). | Section 44 refers to recycling activity – Act, schedule, definition recycling activity which includes reference to organic waste including food and other food products (meat etc). | |
| South Australia | Environment Protection (Waste to Resources) Policy 2010 | Materials declared not to be waste are covered under section 4 and include, ‘material that is ready and intended for imminent use without the need for further treatment to prevent any environmental harm that might result from such use’. | |

| | | |
|-------------------|--|--|
| | (Under the <i>Environment Protection Act 1993</i>). | |
| Victoria | EPA Victoria Commercial Food Waste position. | <p>The Environment Protection Authority Victoria (EPA) has released this position to clarify what constitutes commercial food waste in the Environment Protection (Industrial Waste Resource) Regulations 2009.</p> <p>The Environment Protection Authority Victoria considers commercial food waste to include, 'only the solid component of commercial food waste' (Schedule 1).</p> |
| Victoria | <i>Environment Protection (Industrial Waste Resource) Regulations 2009 (Vic)</i> . | Sets out ways to implement waste hierarchies and prescribes requirements for assessing, categorising, and classifying industrial waste for the purposes of the <i>Environment Protection Act 1970</i> . |
| Victoria | <i>Circular Economy (Waste Reduction and Recycling) Act 2021 (Vic)</i> . | <p>The <i>Act</i> provides the foundation for Victoria's transition to a sustainable and thriving circular economy, including enabling laws for the new container deposit scheme and new state-wide four-stream household waste and recycling system.</p> <p>There is no mention of 'reuse' or 'upcycle'.</p> |
| Western Australia | <i>Environmental Protection (NEPM-UPM) Regulations 2013 (WA)</i> . | Implements the National Environment Protection (Used Packaging Materials) Measure 2011. Includes waste-related provisions which may tie in with disposal of food waste. |

| Australia – State Level Guidelines | | |
|------------------------------------|--|---|
| ACT | Commercial Composting Guide. | Provides existing and prospective operators of composting facilities with information to establish a commercial composting operation. |
| New South Wales | Environmental Guidelines: Composting and Other Organics Recycling Facilities 2004. | Aims to ensure new and existing facilities are well-designed, constructed and operated to ensure minimum impacts of the environment. |
| Queensland | Guideline: Open Windrow Composting Under Environmentally Relevant Activity 53(a) Organic Material Processing by Composting 2019. | The guideline provides best practice environmental management guidance for Environmentally Relevant Activity (ERA) 53(a) Organic material processing by composting and is to be used as a reference document for the regulation of ERA 53(a). |
| South Australia | Compost Guideline 2019. | The guideline sets out the EPA's expectations for the appropriate conduct of composting works in accordance with <i>Environmental Protection Act 1993 SA</i> . |

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| Victoria | Designing, Constructing and Operating Composting Facilities, 2017. | Environment Protection Authority, Victoria. The guideline outlines how the <i>Environment Protection Act 1970</i> and associated policies and Regulations are applied to the assessment of proposals for thermophilic, aerobic composting. |
| Western Australia | Guideline: Better Practice Composting. 2020. Draft for External Consultation. | Department of Water and Environmental Protection, Western Australia. This Guideline provides environmental performance objectives and minimum standards for the construction and operation of composting premises regulated under Pt V of the <i>Environmental Protection Act 1986</i> and the Environmental Protection Regulations 1987. The guideline defines 'better practice' for composting facilities in relation to the Waste Avoidance and Resource Recovery Strategy 2030 (Waste Strategy 2030). |
| Victoria | The Victorian Food Organics Recycling Guide. | A guide for people who manage food operations in organisations to help work out ways to reduce food waste going to landfill, save costs and reduce negative environmental impacts. |
| Victoria | The Path to Half Solutions to halve Victoria's food waste by 2030. | An overview of the waste solutions which can be implemented to assist Victoria in reaching their 'path to half' by 2030. There is no mention of legal or regulatory barriers but does provide case studies in Victoria. |

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| | | <p>The document details 25 food waste solutions which are grouped under four themes:</p> <ol style="list-style-type: none"> 1. Products, processing, and packaging Turn processing waste into other products, get more products to consumers and help consumers enjoy those products for longer. 2. Efficient business operations and supply chain Process foods more efficiently and keep food fresh as it moves from farm to fork. 3. Education and behaviour change Help households and businesses take steps to reduce food waste. 4. Food rescue, recovery and donation Redistribute surplus food and sell it at a discount or give it to people who are doing it tough. |
| Victoria | Metropolitan Waste and Resource Recovery Plan for Victoria, 2016. | The purpose of this plan is to identify waste and resource recovery infrastructure, service needs and how these can be met over the next 10 years for each region in the state. |
| Western Australia | Better practice guidelines for three-bin food organics garden organics (FOGO) services. | These guidelines provide details about better practice three-bin kerbside collection services that include FOGO and apply to standard single-unit dwellings. Local governments seeking to access funding under the Better Bins Plus: Go FOGO program is required to implement kerbside services consistent with these guidelines. |
| Australia – State Level Strategies | | |
| Australian Capital Territory | ACT Waste Management Strategy 2011-2025. | Sets a clear direction for the management of waste in the ACT and highlights that reducing waste requires a collective effort and that waste should be viewed as a resource, rather than garbage. |

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| | | Organic waste – recover organic waste from household and commercial waste sectors; develop markets for organic waste and minimise organic waste going to landfill |
| New South Wales | Waste and Sustainable Materials Strategy 2041. | New South Wales is transitioning to a circular economy over the next 20 years to minimise what we throw away and use and reuse our resources efficiently, making them as productive as possible. The Strategy outlines the actions to take over the next six years (first phase of the strategy) to deliver on the long-term objectives which includes mandating the separation of food and garden organics for households and selected businesses. Stage 1 Plan (2021-27) will require all councils in NSW to introduce residential FOGO collection by 2030. |
| Northern Territory | Waste Management Strategy for the Northern Territory 2015-2022. | The strategy aims to ‘facilitate opportunities to connect waste recovery and reuse markets with key waste producers’. |
| | City of Darwin Waste and Resource Recovery Strategy 2030. | The strategy seeks to improve waste and resource recovery services, including those associated with household FOGO collection. |
| Northern Territory | Circular Economy Strategy 2022-2030. | Released in April 2022, this strategy includes investigating alternative markets for non-specification food to reduce food waste as a priority action. |

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| | | Priority 3, Realise Economic Opportunities includes investigating and supporting business case development specifically looking at alternative markets for non-specification food to reduce food waste (Priority 3.C.2). |
| Queensland | Waste Management and Resource Recovery Strategy. | Queensland's Waste Management and Resource Recovery Strategy, underpinned by a waste disposal levy, provides the strategic framework for Queensland to become a zero-waste society, where waste is avoided, reused, and recycled to the greatest possible extent. |
| Queensland | Queensland Organic Strategy 2022-2032 and Organics Action Plan 2022-2032. | The Strategy aims to improve the management of organic materials along the supply and consumption chain. |
| South Australia | Waste Strategy 2020-25. | The Strategy addresses food waste and single-use plastics through regulatory waste reforms, education and behaviour change and supporting market development and remanufacturing. Includes a target of zero avoidable waste to landfill by 2030. |
| South Australia | Valuing our Food Waste: South Australia's strategy to reduce and divert household and business food waste. | SA's first comprehensive strategy for reducing and preventing food waste being sent to landfill. The Strategy proposes actions to support households and businesses to reduce food waste sent to landfill and further opportunities for the organics recovery and processing sectors in SA. It includes a commitment to provide all households in metropolitan Adelaide with access to an organics collection system by 2025. |

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| Tasmania | DRAFT Waste Action Plan | Provided a framework for the discussion with Local Government, business, and the community on the best way to address Tasmania's waste and resource recovery challenges – includes setting the target of reducing the volume of organic waste sent to landfill by 25% by 2025 and 50% by 2030. |
| Victoria | Recycling Victoria: A new Economy – February 2020. | The plan provides a 10-year policy and action plan for waste and recycling which outlines a plan of reform to establish a recycling system that Victorians can rely on by transforming how the Vic economy uses materials and how the state reuses, repairs, and recycles. The plan commits to halving the volume of organic material going to landfill between 2020 and 2030, with an interim target of 20 per cent reduction by 2025. |
| Western Australia | Waste Avoidance and Resource Recovery Strategy 2030. | Aims to address the challenges and the opportunities that better choices and better waste management present for WA. The Strategy includes changes to the kerbside collection system. |
| International | | |
| UK | WRAP Plan 2015-2020. | This cross-sectoral plan covers food, clothing, and electrical items. The food and drink section of the plan ties in with the Courtauld Commitment and the Hospitality and Food Service Agreement. It aims to re-invent how food products are designed, sourced, and processed, |

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| | | <p>re-think our relationship with food, and re-define what is possible in getting the best value from unavoidable food waste. WRAP also developed 'Love Food Hate Waste' which provides practical strategies for reducing food waste in the household.</p> <p>Page 15 – Sets out high-level goals to be achieved by 2020.</p> |
| UK | UK 'Love Food Hate Waste' Resource Pack for Hospitality and Food Sector. | <p>Voluntary guide designed for a wide range of organisations with advice, ideas, suggested activities, and resources.</p> <p>Page 10-11 'Messages to customers'.</p> |
| France | Report: 'France moves toward a national policy against food waste'. | <p>In 2015, France passed a bill which prohibited large supermarkets from throwing away edible food. There is no official translation of the French legislation available, but this report is a distillation of the French report which led to the legislative change. The proposals contained within it are the result of a yearlong study by the French Ministries of Agriculture and the Environment. Interestingly, a lot of the points expand and develop ideas raised by WRAP.</p> |
| Italy | The Bologna Charter Against Food Waste. | <p>This document was presented to stakeholders during consultation in November 2014, to chart the way toward establishing food waste legislation. May serve as a useful guideline for the Australian 'roadmap' and the documents we wish to release for public consultation prior to the summit in November. Bears similarities to the UK Courtauld Commitment.</p> |
| European Commission | The Roadmap to a Resource Efficient Europe. | <p>The roadmap outlines how Europe's economy can be transformed into a sustainable one by 2050. It proposes ways to increase resource productivity and decouple economic growth from resource use and its environmental impact. It illustrates how policies interrelate and build on each other.</p> |

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| | | Section 5.1 includes 'addressing food'. |
| USA | Upcycled Food Association and Upcycled Food Certification. | Grassroots movement to support upcycled food. |
| Scottish | Food Waste Reduction: Action Plan. | Sets out how Scotland can work to deliver its commitment to reduce food waste by 33% by 2025. |
| Swedish | IVL Swedish Environmental Research Institute Ltd. | This project was initiated by the Nordic Council of Ministers and its waste prevention group and focuses on food waste including strategies to reduce food waste. |

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COOPERATIVE RESEARCH CENTRE

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