

Phasing out exports of waste plastic, paper, glass and tyres

Response strategy to implement the August 2019 agreement of the Council of Australian Governments

March 2020

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Executive summary

We all generate waste and this waste has an impact on our environment. Australian governments, companies and individuals all have a role in working to reduce waste where possible and making productive use of our waste as resources where we can't avoid its generation.

In August 2019 a decision was made by the Council of Australian Governments (COAG) to establish a timetable to ban the export of waste plastic, paper, glass and tyres, while building Australia's capacity to generate high value recycled commodities. Transforming waste material into high value materials will create jobs, build a more sophisticated industry, and provide positive outcomes for the environment and community wellbeing.

The Commonwealth, state and territory governments and the Australian Local Government Association agreed this response strategy at the 13 March 2020 COAG meeting. This response strategy presents a coordinated and ambitious package to implement the COAG waste export ban.

Consultation with peak bodies and affected companies indicates that action by all levels of government is required in the following key areas: driving demand for recycled content; public education to reduce contamination at its source; investment in recycling and waste infrastructure; improving access to and quality of waste tracking data; improving product design and fostering innovation and commercialisation of new technology; and accelerated development of standards for use of recycled material in civil works.

To support targeted action where it has the most impact, governments commissioned market analysis on the impact of alternative options to implement the waste export ban. This analysis considered the costs and benefits of each scenario, investigated current capacity, and identified sources of future demand for recycled material.

The market analysis informed the final material definitions and supported industry's consistent view that clean paper and cardboard and tyres exported for re-treading should not be subject to the ban, as the greatest net benefit is achieved by exempting these materials. Benefits and costs for each jurisdiction are strongly influenced by the level of current reliance on exports and existing processing capacity.

Commitments made to support ban implementation are informed by market analysis findings, industry feedback, and the specific infrastructure and policy needs of each jurisdiction.

Together, commitments from all Australian governments will provide the foundation for achieving the ambitious 2030 targets and actions in our shared National Waste Policy Action Plan. Commitments from all governments and industry, aligned with the opportunities and challenges in this response strategy, will ensure a nationally coordinated response.

The Commonwealth has committed to improving the quality of waste streams, driving demand, supporting investment and leading by example in projects to significantly increase Australia's recycling rates. It has also committed to collaborating with states and territories that do the same.

Introduction

Our drivers

At the community level, there is growing concern about the impact of waste on the environment and on human health. Waste and recycling issues are consistently raised by Australians as among their top environmental concerns. Households want assurance that the material that goes in their recycling bin is reused within our economy, not sent overseas where it may end up in landfill or in the environment. Australians are also concerned about plastic pollution in our oceans, and the health hazards posed by mismanaged or contaminated exported waste.

At the national level, our waste and recycling system was set up to manage waste, not recover resources. Governments and industry are now seeking to cost-effectively capture more materials for recycling. Our domestic waste and recycling sector needs to be future-proofed and resourced to deliver the waste reduction and recycling outcomes that the community expects. Without changes driven by all Australian governments, there is an ongoing risk of stockpiling and illegal waste dumping, rising landfill rates and subsequent greenhouse gas emissions, and business closures as trading markets and the value of materials change.

The National Waste Policy Action Plan (the Action Plan) sets the overarching direction for priority action on waste management and recycling in Australia until 2030. The ban on export of waste plastic, paper, glass and tyres is one of the ambitious national targets included in the Action Plan that was agreed by Australia's Environment Ministers in November 2019. Other complementary targets include reducing the total waste generated in Australia by 10 per cent per person, increasing resource recovery rates to 80 per cent, increasing the use of recycled content by governments and industry, and phasing out problematic and unnecessary plastics.

At the international level, changes in waste import standards in countries around the world have highlighted the need for Australia to better manage its own waste and consider its role in global waste and recycling markets. In 2018, China introduced new restrictions on the recyclable materials it imports through its National Sword Policy. Australia was one of over 100 countries affected by China's restrictions.

China was Australia's largest export market for waste, receiving approximately one-third of Australia's recyclable plastics, paper and cardboard.¹ Following China's decision, other countries have raised concerns about the contamination rates of recyclable materials they are importing.

Market analysis demonstrates that a key benefit of the export ban is the certainty that it creates for industry. A predictable phased ban, rather than sudden and unpredictable changes in export markets, can assist to reduce further shocks to the waste and recycling sector.

¹ Department of the Environment and Energy, *Analysis of Australia's municipal recycling infrastructure capacity*, October 2018.

Figure 1: COAG waste export ban drivers



The first target in the Action Plan, an export ban for waste plastic, paper, glass and tyres, will address each of these community, national and international drivers. Along with complementary response actions, phasing out the export of waste materials will provide certainty to the community that recycling will be managed in Australia to add value to our economy.

Actions by all governments will drive investment in waste and recycling technology, infrastructure and jobs. The ban will ensure that any exported material is a high value resource which is safe for human health and the environment in receiving countries.

Our approach

As a first step, Commonwealth, state, territory and local governments will contribute to implementing a ban on the export of waste products and building Australia's resource recovery capability. Industry will also play its part, creating new opportunities to innovate on how we recover and reuse our resources.

Governments have committed to working closely with each other and with industry to ensure our actions are coordinated and effective. The Commonwealth and all states and territories have consulted with industry and other impacted stakeholders. Through meetings, discussion papers and roundtables, feedback has been received from industry on the expected impact of the export ban and the transitional activities needed to enhance our waste and recycling capacity. Further information on the consultation approach and its findings is at [Appendix A](#).

Informed by industry consultation, the response strategy (this document) has been prepared by the Commonwealth, state and territory governments, and the Australian Local Government Association.

The response strategy is intended to do two things: the first is to explain what the export ban involves, which materials are affected, and the timeframes for implementation. The second is to set out the system-level and material-specific challenges and complementary actions needed by all levels of government and industry to support transition to the ban and drive broader long-term change in Australia's waste and recycling sector.

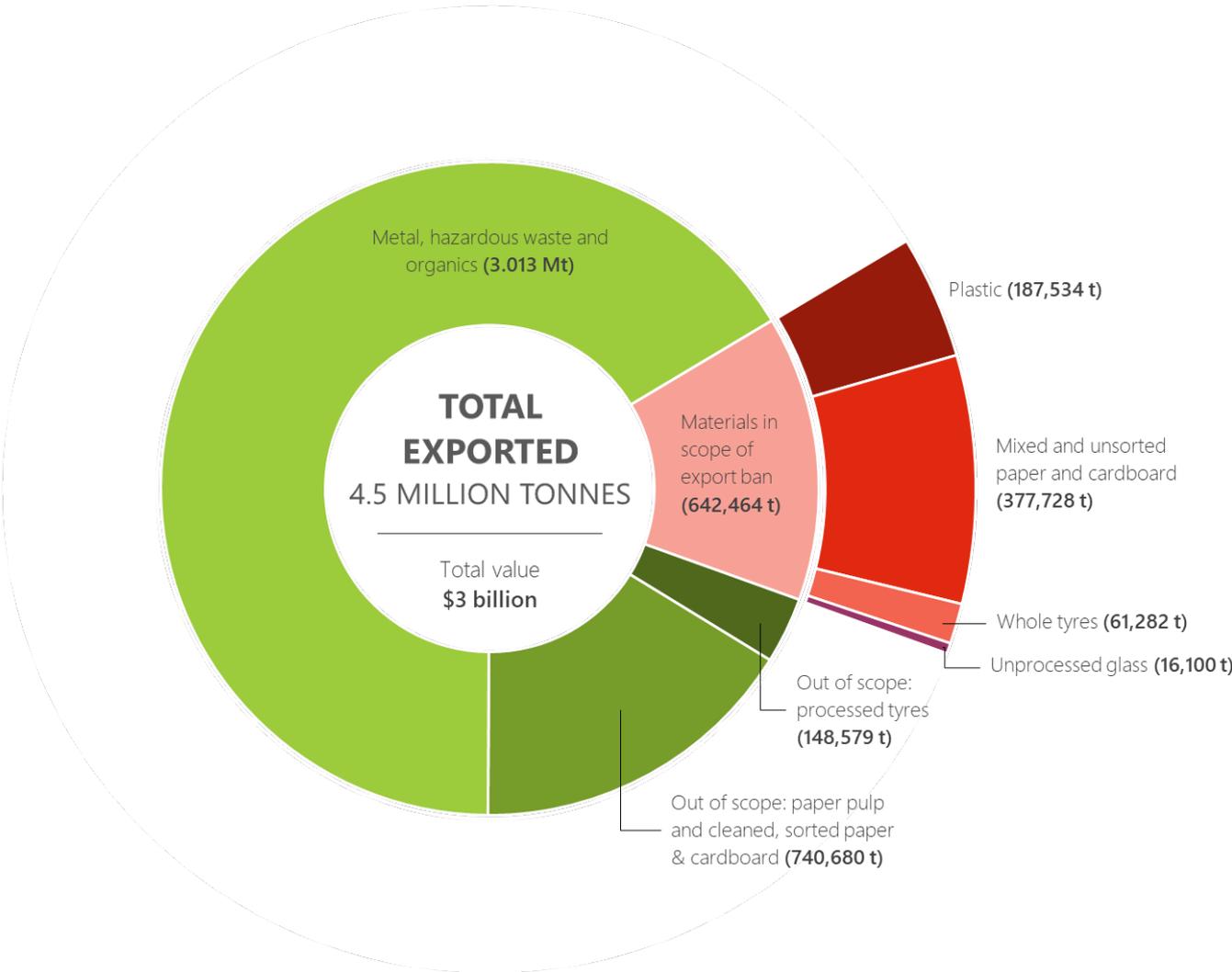
Based on the challenges and opportunities outlined in this document, Commonwealth, state and territory governments will announce specific commitments in the lead up to the ban's commencement.

Waste generation and export snapshot

Australians create around 67 million tonnes of waste each year. In 2018-19, 4.4 million tonnes of this waste was exported. This included 1.4 million tonnes of waste plastic, paper, glass and tyres, representing 32 per cent of total waste export tonnage. The total declared value of these exports was around \$290 million, representing nine per cent of the value of waste exports.

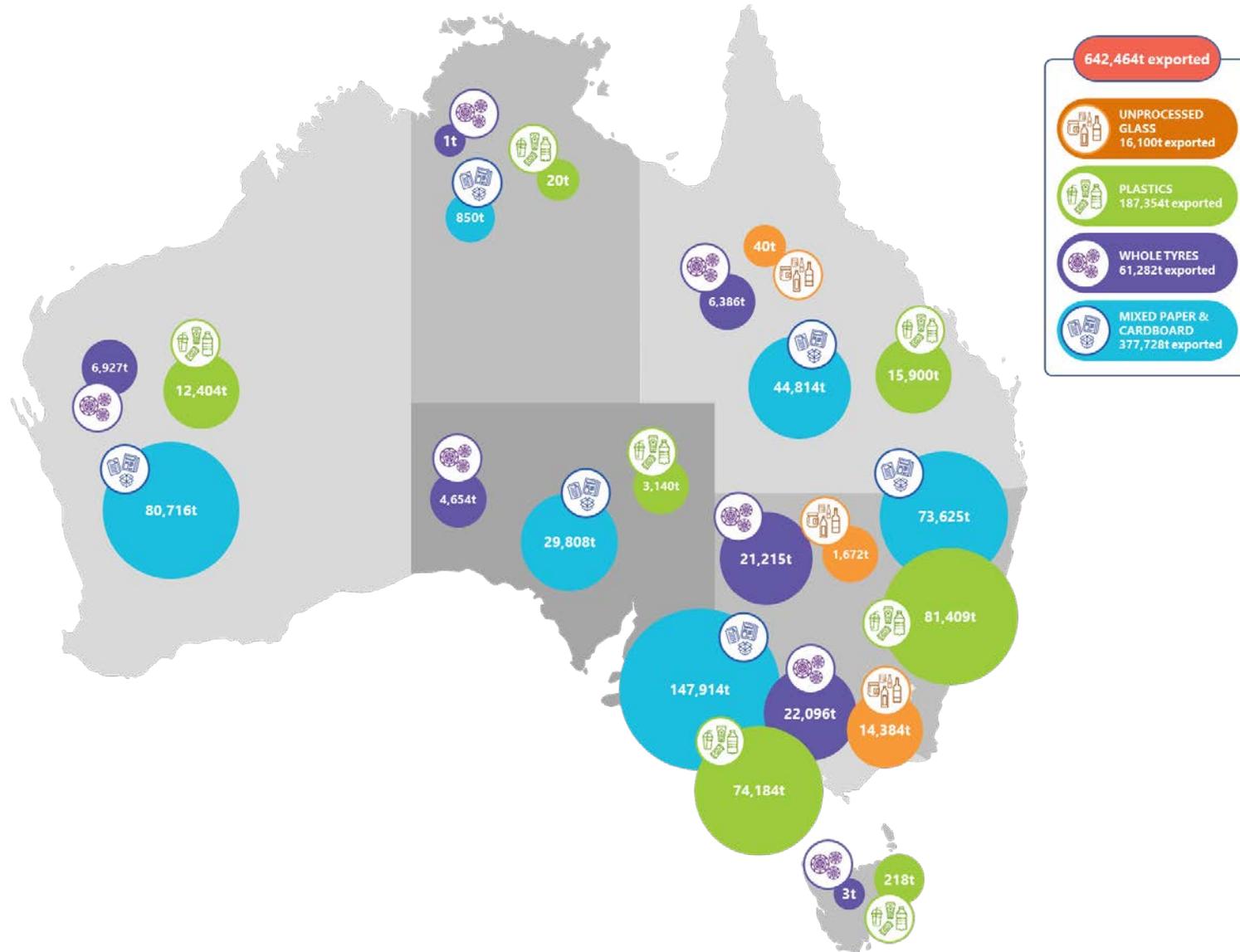
The export ban applies to a proportion of total exports.² The purpose of the ban is not to stop all waste-derived materials from being exported. The intention is to stop the export of untreated and unprocessed wastes which may have a negative human health and/or environmental impact in the receiving country, and to maximise the capability of our waste management and recycling sector to collect, recover, recycle, reuse, and convert waste.

Figure 2: Material volumes - total exported wastes and material in scope of the ban



² Export volumes have been drawn from Australian Bureau of Statistics data by AHECC code. AHECC codes do not differentiate between material banned and exempt for all waste streams. In instances where it has not been possible to establish between banned and exempt material. It has been assumed that all material in a particular code will be subject to the ban.

Figure 3: Australian waste exports and in-scope waste volumes, 2018-19



Data based on ABS export data 2018-19

Material definitions and timing

On 8 November 2019, Commonwealth, state and territory Environment Ministers agreed waste plastic, paper, glass and tyres that have not been processed into a value-added material should be subject to the export ban.

Definitions for the types of material in each waste stream subject to the ban were developed and tested with industry and other stakeholders between late 2019 and early 2020. Through responses to the COAG waste export ban discussion paper and roundtables, stakeholders provided input on their concerns, manufacturing and export practices, and other information which guided the development of specific material definitions.

Changes to the draft material definitions that arose from consultation are summarised as follows:

- Paper and cardboard that is sorted to one type with low contamination levels can be exported. This reflects the role that these materials play in supporting kerbside recycling viability and that these do not require further processing to be ready for manufacturing into new products. It also reflects the low risk that this sorted high-quality material presents to the environment and human health.
- The requirement that glass cullet for export must be washed and colour sorted has been removed. This change reflects industry feedback that glass cullet does not need to be washed and/or of a single colour to be ready for all remanufacturing applications, for example, in fibreglass production or in amber glass packaging.
- Bus, truck, and aviation tyres which are legitimately exported for re-treading can continue to be exported as this practice represents a higher-order end use than destruction via crumbing or shredding.

In November 2019, all Australian Environment Ministers and the Australian Local Government Association agreed that the waste export ban should commence on 1 July 2020 with a phased approach.

Governments consulted on the timetable through the waste export ban discussion paper, individual meetings and roundtables. This timetable is ambitious and will require the cooperation of industry and all levels of government to succeed.

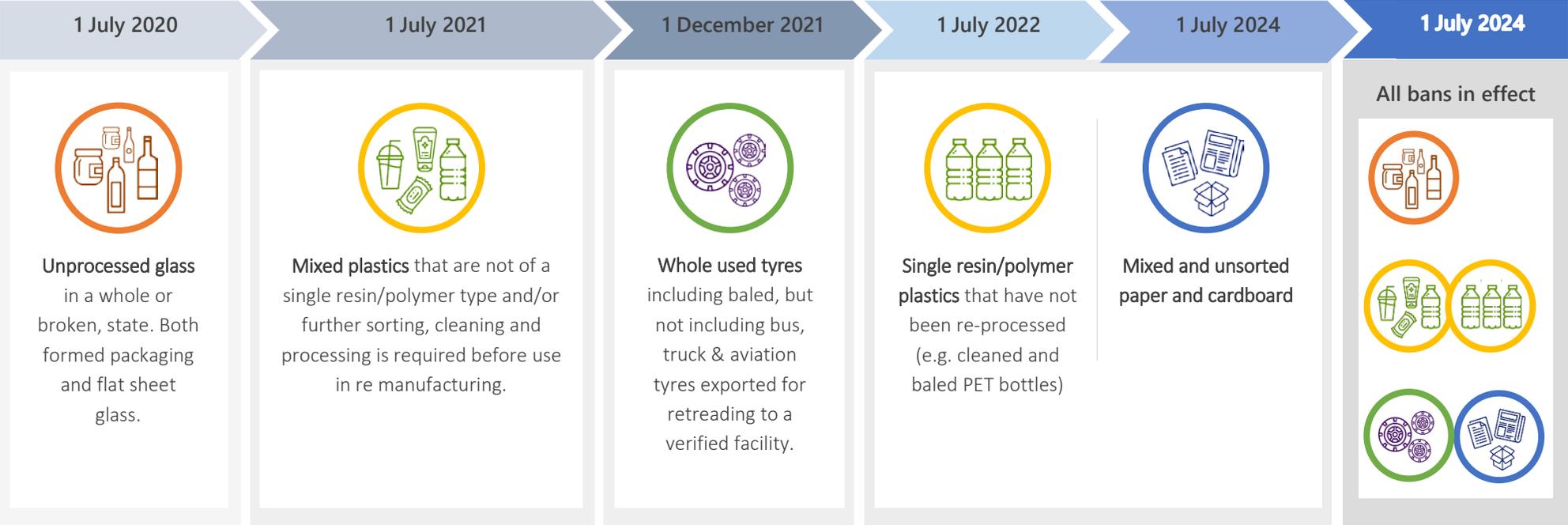
The final definitions and timeframes agreed by COAG are set out in Table 1 below. The rationale that underpins each definition is summarised in the following pages. Consistent with industry feedback, market analysis by the Centre for International Economics confirmed that the ban had the greatest net benefit when it included exemptions for clean sorted paper and cardboard, and truck, bus and aviation tyres legitimately exported for re-treading.

Table 1: Definitions and timeframes for materials in scope of the export ban

Banned material definition	Start date	Examples of materials not in scope
<p>Plastic</p> <p>Phase 1: mixed plastics that are not of a single resin/polymer type and/or further sorting, cleaning and processing is required before use in re manufacturing.</p>	1 July 2021	<p>Plastics that are:</p> <ul style="list-style-type: none"> sorted into a single resin/polymer type and processed for further use (e.g. flakes and pellets); or processed with other materials into a product ready for final consumption (e.g. manufactured to a specific size and specification and in a form ready for direct use as a fuel in a cement kiln).
<p>Phase 2: single resin/polymer plastics that have not been re-processed (e.g. cleaned and baled PET bottles).</p>	1 July 2022	
<p>Paper</p> <p>Mixed and unsorted paper and cardboard.</p>	1 July 2024	<p>Paper and cardboard that is either:</p> <ul style="list-style-type: none"> sorted to a single type, with low contamination levels; processed into pulp; or processed with other materials into a product ready for final consumption (e.g. manufactured to a specific size and specification and in a form ready for direct use as a fuel in a cement kiln).
<p>Glass</p> <p>Unprocessed glass, in a whole or broken state. Both formed packaging and flat sheet glass.</p>	1 July 2020	Glass which has been processed into fines or cullet with low contamination levels.
<p>Tyres</p> <p>All whole used tyres including baled tyres, but not including bus, truck and aviation tyres exported for re-treading to a verified re-treading facility.</p>	1 December 2021	Crumb rubber, buffings, granules, and tyre shred (<80mm).

A visual timeline for the export ban (including in-scope waste volumes) is at Figure 4.

Figure 4: Waste export ban timetable



Effect of the ban on plastic exports

Timing: 1 July 2021 for mixed plastics (Phase 1) and 1 July 2022 for unprocessed single resin/polymer waste plastics (Phase 2).

Definition: Phase 1: mixed plastics that are not of a single resin/polymer type (i.e. further sorting, cleaning and processing is required before use in re-manufacturing). Phase 2: single resin/polymer plastics that have not been re-processed (e.g. cleaned and baled PET bottles).

Rationale: The rationale for maintaining definitions for plastic is that baled PET and HDPE are not input-ready for manufacturing. They contain contaminants and waste materials that are removed in the receiving country when bales are broken down, with a high likelihood of being landfilled or released into marine environments.

Volume of materials affected: A ban on export of waste plastics as defined above will affect the following volumes of materials, based on 2018-19 export data provided by the Australian Bureau of Statistics.³

Table 2: Exported plastic material volumes affected by the ban

Material Type	2018/19 total (tonnes)	NSW	NT	QLD	SA	TAS	VIC	WA	ACT ⁴
Mixed plastic	149,695	68,878	20	8,131	2,041	170	58,500	11,897	1,771
Total waste plastic (includes mixed and single polymer plastics)	187,354	81,409	20	15,900	3,140	218	74,184	12,404	2,773

Effect of the ban on paper and cardboard exports

Timing: 1 July 2024.

Definition: Mixed and unsorted paper and cardboard.

Rationale: Mixed and unsorted paper and cardboard can contain contaminants such as plastic, which can be released into the environment if not carefully managed, and biohazards (due to its absorbent nature). As it involves further steps and cost to recycle, mixed and

³ Information is indicative and based on Australian Bureau of Statistics data on export of materials by AHECC code. Consultation with industry partners indicates likely miscoding of material and that additional tonnage may be being exported. There are limitations in the data on the form of material being exported.

⁴ ACT data are from the ACT Materials Recovery Facility (MRF) based on production figures for 2018-2019, and are provided for completeness. Where these wastes are exported, the quantities will also appear in jurisdictional totals according to locations of relevant ports. As a result, sums from these tables may differ from published national totals.

unsorted paper may be landfilled or burnt in receiving countries, creating potential health and environmental impacts.

Volume of materials affected: A ban on export of waste paper as defined above will affect the following volumes of materials, based on an analysis of 2018-19 export data provided by the Australian Bureau of Statistics.

Table 3: Exported paper material volumes affected by the ban

Material Type	2018/19 total (tonnes)	NSW	NT	QLD	SA	TAS	VIC	WA	ACT ⁵
Mixed and unsorted paper and cardboard	377,728	73,625	850	44,814	29,808	0	147,914	80,716	22,750

Following consultation, there is a better understanding of the role that paper and cardboard sorted to a single type and low contamination plays in supporting kerbside recycling viability and that these do not require further processing to be ready for manufacturing into new products.

Effect of the ban on glass exports

Timing: 1 July 2020.

Definition: Unprocessed glass, in a whole or broken state. Both formed packaging and flat sheet glass.

Rationale: There has been increasing concern in Australia and around the world about the environmental impacts of managing waste glass. Waste glass that is not recycled can add to growing landfill. Unprocessed glass packaging in stockpiles can emit odour and contain residues such as molasses and alcohol, which can leach into the environment. This leachate is high in nitrogen and can harm aquatic animals if it enters waterways.

Unprocessed glass can contain contaminant metals, ceramics and porcelain and would require further processing in the importing country. If processing is unavailable or becomes unviable, then unprocessed glass could be landfilled. It may also be contaminated with heavy metals, flammable materials, asbestos, and other hazardous materials with the potential to cause negative health and environmental impacts in receiving countries.

⁵ ACT data are from the ACT Materials Recovery Facility (MRF) based on production figures for 2018-2019, and are provided for completeness. Where these wastes are exported, the quantities will also appear in jurisdictional totals according to locations of relevant ports. As a result, sums from these tables may differ from published national totals.

Volume of materials affected: A ban on export of waste glass as defined above will affect the following volumes of materials, based on an analysis of 2018-19 export data.

Table 4: Glass material volumes affected by the ban

Material Type	2018/19 total (tonnes)	NSW	NT	QLD	SA	TAS	VIC	WA	ACT
Cullet and other waste and scrap glass	16,100	1,672	0	40	0	0	14,384	0	0

Effect of the ban on tyre exports

Timing: 1 December 2021.

Definition: All whole used tyres, including baled tyres.

Rationale: The environmental and human health impacts of irresponsible disposal of whole waste tyres is well-documented. For example, uncontrolled tyre fires and unregulated pyrolysis plants cause air, water and soil pollution, while tyres stored in the open can store rainwater that creates a breeding ground for disease-carrying mosquitoes and other vermin.

Volume of materials affected: A ban on export of waste tyres as defined above will affect the following volumes of materials, based on an analysis of 2018-19 export data.

Table 5: Tyre material volumes affected by the ban

Material Type	2018/19 total (tonnes)	NSW	NT	QLD	SA	TAS	VIC	WA	ACT ⁶
All whole used tyres, including baled tyres	61,282	21,215	1	6,386	4,654	3	22,096	6,927	1,155

⁶ ACT data are from the ACT Materials Recovery Facility (MRF) based on production figures for 2018-2019, and are provided for completeness. Where these wastes are exported, the quantities will also appear in jurisdictional totals according to locations of relevant ports. As a result, sums from these tables may differ from published national totals.

System-level challenges and opportunities

The COAG waste export ban is the first target under the National Waste Policy Action Plan and is the first step in driving greater domestic waste and recycling capacity.

Industry feedback focused strongly on the need for system-level changes to Australia's waste and resource management practices to support an export ban. This section outlines the challenges and opportunities which will frame specific actions to build the long term strength and capacity of Australia's waste management sector. Each opportunity is allocated to the level of government or industry best positioned to advance its aims.

The Commonwealth is best placed to lead on interventions which relate to ban implementation and national coordination. States and territories are best placed to lead on material specific interventions, as these will vary according to specific jurisdictional challenges.

Local governments are the conduit to households to support them to reduce and manage waste. Regional councils are particularly well placed to advise on opportunities for processing local waste resources into useful value-added products for community benefit.

Address waste origins and generation

A large proportion of waste generated is from single use products and packaging. These products and packaging can contain a blend of material types which inhibit the ability for the material to be recycled in Australia.

There are opportunities for industry and governments to contribute to changing the materials we use in everyday products, in order to reduce the total volume of low-value or hard to recycle material in the waste stream. Where possible, the best outcome is for waste to be managed, processed and returned to productive economic use close to its point of generation.

Industry opportunity: Commit to designing out non-recyclable materials in packaging, particularly for difficult to recycle plastics.

Commonwealth opportunity: Continue to work internationally with willing coalitions to find solutions for difficult to recycle materials coming into Australia.

All government opportunity: Consider supporting the export ban with restrictions on the use of problematic packaging and products.

Reduce contaminated kerbside collection

Contamination rates in kerbside waste collection feature as a significant issue which impacts on the sustainability of collection systems, the value of recycled materials, and the ability for materials to go to their highest value use.

Despite strong community interest and willingness to support strong recycling outcomes, consumer awareness of the 'right' way to recycle is limited and there is no consistent approach to labelling to assist the community to determine whether a product is recyclable in Australia.

Additionally, households face mixed messages about what materials can be recycled, as requirements are often local government specific based on which materials recovery facility receives the recycling.

State, territory and local govt opportunity: Standardise contracting arrangements to align the materials accepted by materials recovery facilities and standardise the required quality of outputs to ensure clean high-value supply for remanufacturing.

All governments opportunity: Support upgrades to material recovery facilities with the purpose of lifting technology to a consistent minimum standard, for example, through optical sorting technology.

All governments opportunity: Provide fit-for-purpose education to households and businesses to make it easier for them to contribute to cleaner waste streams.

All governments opportunity: Consider a clear, simple and enforced labelling system that reflects a national approach to consistent kerbside, and commercial and industrial, collection.

Drive domestic demand for recycled products

Increased demand for recyclable materials as inputs for processing, and for products manufactured from these materials, is needed to make new recycling capacity cost effective. Consistent quality and performance standards and specifications can assist in driving industry and household confidence in the use of recycled content and the value of recycled products.

One way to drive demand is through choosing to purchase recycled products over those that are entirely made of virgin material. This principle applies broadly, for example, constructing roads is core business for governments and involves the purchasing of significant volumes of materials. Recycled products such as rubber crumb and glass as a sand substitute have demonstrated ability to increase the longevity and performance of Australian roads.

All governments opportunity: Build demand for recycled products through purchasing of goods and services at scale.

Industry opportunity: Commit to trialling, championing and marketing the increased use of products with recycled content.

Understand resource volumes, value and movement

Governments have been working collaboratively for several years to improve the availability, consistency and specificity of waste data collection and information, including through the National Waste Report and National Waste Account. The movement of waste through metropolitan and regional areas and states and territories and reporting on imports and exports have been identified as a data gap by all Australian governments.

All governments opportunity: Better understand waste volumes and movement through improved industry reporting. Leverage this work to identify opportunities for jobs and investment in regional areas.

Commonwealth opportunity: Consider mechanisms to support all levels of government and industry to understand local and export markets for recycled commodities.

Invest in new technologies and infrastructure

Market research to assess national infrastructure capacity has identified significant processing gaps for some materials and new capacity coming online for others. There is a substantial capacity gap in Western Australia, particularly for paper processing. For high value plastics such as HDPE and PET, there has been investment in new facilities in the past two years and some of these facilities appear to have spare capacity.⁷ The need to fill existing processing gaps should guide investment decisions in all jurisdictions.

A significant challenge raised in industry consultation is the ability for businesses to secure investment for facilities and equipment upgrades, and to develop and test new technologies for creating value-added products from waste.

Governments have a role to play in ensuring that viable proposals from start-ups and small and medium enterprises receive the support they need to scale up, achieve commercialisation, and compete in the open market. Support offered could involve access to test facilities, expert knowledge, and seed funding for cross-sectoral approaches to solving waste challenges.

All governments opportunity: Co-invest to support commercially viable waste and recycling facilities and support research and development for new technologies and products.

All governments opportunity: Investigate opportunities for regional micro-factories, to enable regional and remote areas to process locally generated waste resources into useful value-added products for community benefit.

State and territory opportunity: Factor in development of high priority recycling and re-manufacturing facilities in land use planning.

Commonwealth opportunity: Monitor and review competition issues in the waste, recycling and manufacturing sectors.

Coordinate regional recycling capacity

Cross-jurisdictional actions are needed to address the particular waste and recycling challenges associated with remote and regional areas, such as Northern Australia. The transport costs involved in moving waste long distances from its source to processing facilities can significantly increase the total cost of recycling. Dispersed populations can also reduce the cost-effectiveness of collection services.

All governments opportunity: Establish regional recycling hubs in strategic locations across Australia to ensure that regional and remote locations are not at a disadvantage compared to metropolitan areas as a result of an export ban.

All governments: The Commonwealth, Queensland, Western Australia and the Northern Territory will work together through the Ministerial Forum on Northern Development to ensure response measures are coordinated across, and meet the collective needs of, Northern Australian jurisdictions. In undertaking this work Northern Australian jurisdictions will work closely with local governments in the region.

⁷ Centre for International Economics, *Costs and benefits of banning exports of waste*, February 2020.

Drive international cooperation

Marine plastic pollution is an issue which goes beyond national borders. Coordination and alignment across the Indo-Pacific region is needed to prevent products like single-use plastic bags from entering the marine environment, and to manage marine plastic debris.

Commonwealth opportunity: Encourage greater international cooperation to combat waste through priority regional forums and existing initiatives.

Streamline approval processes and requirements

For investment in waste and recycling infrastructure to occur in response to material supply generated from the export ban, state, territory and local government approval processes need to be timely, transparent and fit-for-purpose.

Industry has raised the length of time for approval processes as a barrier to investing in major infrastructure projects. Planning approval, community consultation, financing and building takes time. It can take several years to meet requirements and construct a new recycling facility. This can represent a significant cost for business, particularly small businesses.

State and territory and local government opportunity: Review potential barriers to waste and recycling related development applications, including opportunities for more risk-based approaches to avoid unnecessary approval delays.

Outside of regulatory settings, there may be other opportunities to streamline development application pathways for major infrastructure projects. The Commonwealth, for example, has existing mechanisms through the Department of Industry, Science, Energy and Resources to bring together regulators from all levels of government to streamline approval pathways for major projects, as part of the National Business Simplification Initiative.

State and territory and local government opportunity: Consider additional non-regulatory mechanisms, such as education and case management, to provide support for progressing applications for high priority infrastructure projects.

Industry opportunity: Greater collaboration with regulators throughout the approval processes to reduce unnecessary delays.

Consider waste levy settings

Waste levies are currently collected in five states (NSW, Victoria, Qld, SA and WA) and aim to reduce the amount of waste being landfilled and promote recycling and resource recovery. States and territories invest a share of this funding in programs and initiatives to support enhanced waste and resource recovery outcomes. Industry however, has called for a greater proportion of waste levy revenue to be committed to these programs and initiatives.

Recycling operators have proposed that as a supporting industry transition measure, state and territory governments review levy settings to reduce barriers for resource recovery operations. For example, these operators propose that businesses which are recycling material and necessarily sending residual by products and contaminants to landfill should receive a waste levy exemption for this material to provide an incentive for new recycling capacity to come online.

State and territory opportunity: Ensure waste levy settings are operating to support resource recovery and innovation.

Drive product stewardship

Product stewardship is an approach which acknowledges the shared responsibility that producers, sellers, users and disposers have for products and materials throughout their lifecycle.

The majority of extended producer responsibility and product stewardship schemes in Australia are led by industry. Governments have supported and will continue to support the development of voluntary product stewardship schemes. Current voluntary schemes have achieved significant environmental outcomes, however can be slow to implement and hampered by free rider issues where companies with significant market share choose not to participate.

While there is support from the waste and recycling industry for new product stewardship schemes which place mandatory requirements on businesses, groups representing manufacturers have a range of views about mandatory schemes depending on the maturity of their respective schemes. Finalisation of the review of the Product Stewardship Act in 2020 will provide opportunities to reform stewardship arrangements, including opportunities for mandatory schemes where they support implementation of the export ban.

All governments have the ability to create and regulate new product stewardship schemes. The Commonwealth has committed funding through the Product Stewardship Investment Fund to accelerate work on new industry-led recycling schemes, including for batteries, electrical and electronic products, photovoltaic systems and plastic oil containers.

Industry and all governments opportunity: Consider targeted stewardship interventions for packaging, plastic, paper, tyre and glass products.

Material-specific challenges and opportunities

The challenges and opportunities posed by each in-scope material type will be specific to each state and territory, and to local governments.

This section sets out the key material issues as reported by industry and governments and identifies opportunities to effectively implement the ban while also driving broader reform and transformation.

Plastic

The value chain for plastics in Australia is more diverse and less integrated than other sectors of the economy and this is reflected in the industry's feedback. Some businesses have signalled strong support for the COAG export ban and noted likely positive impacts. Others are opposed and have flagged adverse impacts. Perspectives depend on where in the value chain a business operates. For example, the opportunities and challenges for a materials recovery facility (receives revenue from the sale of exported plastic) differ from those for a plastics re-processor (secure supply of low contamination plastic reduces the cost of creating new products from this material).

Plastic is not a single material, but many different materials. Products made from plastic can be engineered to be strong or weak, made from different chemical compositions or be hard or soft, clear or coloured. As these products differ, so do requirements for recycling. A hard, white bottle cannot be recycled into clear wrap. Each type of plastic and plastic waste has different markets and stakeholders.

Reducing reliance on hard to reuse and recycle plastics

Much of Australia's current plastic waste exports, comprise low value mixed plastics that are hard to recycle, often single use items and packaging collected from homes and businesses. Reducing the amount of low value mixed plastic in kerbside collection through waste avoidance and reuse would decrease the cost incurred by local governments to process, landfill or down-cycle this material.

Most states and territories have introduced policies to phase out problematic, single-use plastics. While these efforts are important, few of the measures cover the same products or apply the same timeframes for implementation. This can lead to public confusion and added impost on affected businesses that operate in multiple jurisdictions. The Commonwealth has a role to play in supporting the consistency and harmonisation of these initiatives.

All governments opportunity: Harmonise policies and programs to phase out the use of single-use and hard to recycle plastics.

Creating demand for recycled plastics through procurement

To be able to recycle mixed plastic products back into similar products they need to be sorted, cleaned and processed and it is often cheaper to use virgin plastic. Industry feedback has suggested that local demand for recycled plastics is generally low and needs to be increased if Australia is to recycle the plastic waste currently exported.

There are robust global markets for higher value plastics, specifically PET and HDPE. Materials recovery facilities and container deposit scheme operators advise that access to

global markets results in higher prices that help cover the costs of collection and sorting. Conversely, re-processors and manufacturers have noted difficulties in securing a reliable supply of PET and HDPE at affordable prices that would enable them to expand and increase local re-processing capacity.

For other plastic types, industry has advised that there are currently limited domestic markets to sell into, especially for lower value mixed plastics. Where markets do exist, the returns are not enough to cover the cost of transporting, sorting and processing locally.

There is strong support from industry for governments to create local demand through new procurement policies and standards that mandate the purchase of products made with recycled plastics such as bollards or park benches or for the use of recycled materials in infrastructure projects and other civil works.

Government procurement may be most effective to stimulate domestic markets for lower value mixed plastics. Recycling plastic waste into infrastructure projects and civil works provides an opportunity to create new markets and will need to be underpinned by clear standards to ensure engineering, human health and environmental considerations can be addressed.

Local government opportunity: Preference recycled products when replacing equipment and facilities in community spaces.

All governments opportunity: Review existing standards for recycled plastics and develop new standards where needed to build confidence in the safety and reliability of recycled plastic products.

Industry assistance to invest in new plastics infrastructure

In 2018-19 Australia re-processed around 125 000 tonnes of plastics. To absorb the plastic waste that is currently being exported we will need to increase our plastics recycling capacity by about 150 percent. Industry considers onshore processing is at a disadvantage to overseas operations that have lower operating costs and lower environmental and human health standards.

The machinery required to process the volume of plastic waste currently being exported requires new capital investment. Australia currently has limited capacity to recycle plastic packaging back to food grade standards. Businesses have advised it costs around \$1 million per 1000 tonnes of capacity to clean, sort and process plastics into streams that can be re-used in food grade manufacturing. Based on high global demand for new recycling technology, lead times on purchase of new machinery can be 18 months from order to delivery.

New investment is needed to support solutions such as chemical recycling and processing plastic waste to a standard that is suitable for use in infrastructure and civil works. Where higher order recycling is not feasible, waste to energy may provide a preferable solution than disposal to landfill.

Re-processors and manufacturers have noted the challenges in sourcing a secure and reliable supply of recycled plastic feedstock. The COAG export ban is likely to help overcome this challenge. They have also expressed some concerns that waste to energy facilities will compete with recycling facilities for plastics feedstocks.

Commonwealth opportunity: Support industry to invest in new plastics processing capacity through commercial and concessional loans to bridge market investment gaps, competitive grant funding or taxation measures.

All governments opportunity: Provide longer term certainty in waste to energy policy to help businesses make investment decisions.

Reducing plastics contamination

In co-mingled kerbside collection, plastic products are mixed with other materials such as food, paper, cardboard and glass as well as other non-recyclable material. To be re-made into similar products, these plastics need to be sorted and cleaned. Sorting and cleaning plastics to a standard where they can be reused often costs more than these materials can be sold for, especially domestically.

Packaging and product manufacturers and importers have a clear role to play to ensure that plastic products and packaging are designed to be easily recyclable and that consumers can easily understand which plastic products can be placed in kerbside recycling bins. The desired outcome is that only products and packaging that can be reprocessed or remanufactured should enter the kerbside recycling bin.

Industry opportunity: Design out non-recyclable plastics from consumer packaging products.

All governments opportunity: Phase out unnecessary and problematic plastics that increase contamination in kerbside collection.

All governments opportunity: Work with material recovery facilities to provide a clear set of national standards for kerbside recycling to make it easier for households to determine which plastics can be recycled.

Industry opportunity: Introduce additional closed loop collection systems to reduce contamination and provide cleaner single stream plastic as an input to re-manufacturing.

Plastics research and innovation

Research and innovation will be critical to the successful implementation of the COAG export bans. Australia's local plastics industry has the capability to innovate new products and solutions but will require support to do so at the pace required.

Research and innovation is needed to ensure that products are made from recycled plastics and in turn are recyclable at their end of life. Research and innovation is also needed to create new, easier to recycle plastics to replace difficult to recycle products while meeting design requirements such as extended shelf life for food.

Research and innovation will help bring to life new solutions for difficult to recycle plastics where their use cannot be phased out, and to develop local solutions for the plastics that are not currently recycled in Australia. This may include new technologies such as chemical recycling, or new methods to incorporate plastics safely into alternative end fates such as infrastructure and civil works.

Commonwealth and state and territory opportunity: Establish partnerships between governments and industry for plastics research, innovation and commercialisation of new technologies.

Product stewardship for plastics

While voluntary industry-led packaging targets have been established by the Australian Packaging Covenant Organisation, some plastics collectors and processors are advocating for the introduction of mandatory recycled content packaging targets, underpinned by product labelling which includes information about the recyclability of the packaging.

Commonwealth opportunity: Review the *National Environment Protection (Used Packaging Materials) Measure 2011* in the context of the COAG export ban. A review could also consider regulatory measures including the use of existing organisations as regulatory bodies.

Source separated collection for plastics

Container deposit schemes currently operate in South Australia, the Northern Territory, New South Wales, the Australian Capital Territory and Queensland. Western Australia's scheme will commence in June 2020, Tasmania's will be rolled out in 2022, and Victoria has announced the introduction of a scheme by 2022-23.

Container deposit schemes provide a financial incentive to consumers to return containers for recycling by providing consumers with a 10 cent refund when presented to an approved collection point or depot. Container deposit schemes operate on a cost recovery basis, where all scheme costs, including the refund amounts and costs of collection and recycling, are covered by beverage suppliers.

Return rates vary by schemes, however in 2018-19 the long-established South Australian scheme had a return rate of 76.4 per cent.

Industry feedback has noted that current container deposit schemes vary by state and territory in terms of the method or condition in which materials can be accepted. For example, some schemes require containers to be returned intact, whole and uncrushed, whilst others accept baled and crushed containers.

Container deposit schemes collect large volumes of source separated plastics which are sought after locally and internationally. Up to 50 per cent of plastics redeemed in the NSW container deposit scheme are exported. Domestic processing capacity is developing but will take more time to establish. Furthermore, as more schemes across Australia are established, and more clean streams of plastics are made available, the domestic demand for the material may lead to a drop in value for scheme operators.

Container deposit schemes, by their design are required to accept containers which have positive recycling outcomes. National harmonisation on containers which are, and are not problematic is an important part of aligning schemes going forward.

State and territory opportunity: Identify common problematic plastic containers and work towards improving the recycling outcomes or phasing out problematic containers in a harmonised way across all schemes. This will be overseen by the Container Deposit Scheme Jurisdictional Committee, which has been endorsed by Environment Ministers to work towards harmonisation issues.

Paper

Australia's mixed paper exports are likely to struggle to find markets in the future⁸ making the COAG export ban an opportunity to develop our domestic management and markets of mixed paper. The export income from high-value clean cardboard exports offsets the costs of domestic collection, sorting and handling of recovered paper domestically.⁹ Continuing the export of clean cardboard and sorted paper will maintain the current support of paper recovery systems for clean streams and manage the shift to domestic re-processing of the previously exported mixed paper. However, new approaches are needed to manage the mixed paper from kerbside collections.

Reducing paper contamination

Paper and cardboard make up about 46-57 per cent¹⁰ of kerbside recycling bin. The quality and value of mixed paper from municipal collections is affected by contamination from broken glass in co-mingled systems, from residual food matter, and from inappropriate disposal of batteries in recycling bins.

Source separation can occur in the household, at the kerbside, and through 'return and earn' and 'away from home' recycling. A separate kerbside bin for paper (or glass – a common paper contaminant) could increase the value of recovered paper. The addition of a bin to the kerbside system would result in upfront and ongoing costs that would likely be passed on to households. Other challenges, such as retrofitting existing housing stock to accommodate additional bins, would also need to be considered.

Governments can consider innovative ways to separate municipal collection by material stream, for example recycling hubs in public spaces or collection schedules which cycle through material streams to avoid collection vehicle congestion or the need for additional collection vehicles.

State, territory and local government opportunity: Improve the quality of recovered paper by taking action to separate common contaminants from the co-mingled system, including broken glass, food waste, and batteries.

Creating demand for recycled paper through procurement

The challenge in generating domestic demand is significant, with some industry analysts suggesting the local market for recovered paper is saturated with no incentives to expand existing paper processing capacity.

All governments opportunity: Increase consumption of domestic recycled paper and cardboard through procurement of recycled photocopy, printing, tissue and packaging paper.

⁸ China's import of mixed paper has been reducing since 2017. China's introduction of a <0.5% contamination rate, and India's 1% set for March/April 2020, for mixed paper imports signal the changing international paper markets particularly for low value mixed paper.

⁹ Industry Edge, *Assessment of Australian paper & paperboard recycling infrastructure and 2018-19 exports, including to China*, October 2019.

¹⁰ Department of the Environment and Energy, *Analysis of Australia's municipal recycling infrastructure capacity*, October 2018.

Industry assistance to invest in new paper processing infrastructure

Current domestic paper and cardboard processing capacity cannot absorb the additional volume of mixed paper from municipal collection that is currently being exported. High capital costs to install modern technology, volatile international markets with fluctuating commodity prices and long and expensive planning approvals make attracting investment a challenge.

Financial support for new processing capacity in South East Queensland and Victoria has been proposed by industry. There are anecdotal estimates of \$30-100m build cost for a facility with processing capacity of 100,000-150,000 tonnes per annum, dependent on input contamination levels. However, the economics of the export of domestically generated pulp is contested.

Some industry feedback depicts pulp as a low value product in a competitive international market affected by currency fluctuations, which is water intensive to create and expensive to transport. Alternate industry feedback indicates that pulp can be relatively water efficient and dried to 10 per cent water content (marginally higher than cardboard) and baled for remanufacturing.

All governments opportunity: Further investigate new processing methods and infrastructure needs for paper to create value added products.

Paper research and innovation

With an export ban in place, a lack of reprocessing facilities in Western Australia, the Northern Territory and South Australia will increase the cost of recovery of mixed paper in these jurisdictions. Without sufficient interventions, in Western Australia and the Northern Territory mixed paper will likely be landfilled as shipping to a domestic market in the eastern or southern states is cost prohibitive. The recovery of mixed paper in regional and remote areas is likely to be uneconomic unless local and scalable solutions are identified.

Support is needed for research and innovation into alternative uses for recovered paper, particularly in regional areas where value-added products and jobs can be generated within communities.

State and territory government opportunity: Fund research into innovative solutions for regional and remote areas to manage mixed paper. For example, micro paper mills; composting facilities; creation of building insulation; creation of soil conditioners for agriculture, forestry and landscaping; and opportunities to drive economies of scale in Northern Australia.

Glass¹¹

Based on industry feedback, an export ban for unprocessed glass is not expected to have a significant market impact as currently exported volumes are a relatively small proportion of the total waste stream. Consultation with industry has revealed that markets for unprocessed glass from container deposit schemes are emerging due to the higher quality of this material. While minor processing is required for container deposit scheme material to be of an acceptable quality for export to international markets, in order for the material to be ready for re-manufacturing, onshore processing (known as beneficiation) capability would need to be increased.

Some concerns have been raised about the scarcity of domestic buyers, as two major glass packaging manufacturers dominate the Australian market.

There are minimal short term interventions required to implement the export ban on unprocessed glass, however there are opportunities to support ongoing efforts to increase recycling rates for glass and reduce the volume of material that currently goes to landfill.

Domestic demand for recycled glass

There is currently limited use of recycled glass for local glass container manufacturing and use in civil construction. Some infrastructure and supply chains are in place to increase the use of glass in construction materials such as recycled glass sand, road base and concrete, and there are opportunities to increase capacity in the sector.

Domestically produced glass packaging has to compete with glass packaging manufactured overseas and imported, which may be cheaper. This cost differential can be based on a range of factors including wages, environmental protections, and economies of scale.

Where glass is of high quality, its first order use should be in a glass remanufacturing process, rather than in infrastructure projects. Glass from container deposit schemes is preferred over the glass that comes through municipal solid waste collection because it is generally cleaner and more suitable for food grade applications.

Australian glass manufacturers have stated that they could take more cullet for remanufacturing if it met appropriate quality requirements. The growth of container deposit schemes nationally is expected to provide a larger volume of cleaner glass for use in remanufacturing.

Where glass is not of a sufficient quality to be manufactured into glass bottles, or there is insufficient demand, a preferred fate is utilisation in construction.

To support procurement of recycled glass, there is a need to develop national specifications and standards to increase confidence in the use of recycled crushed glass and glass fines in construction and civil works (particularly roads). Local governments are looking to utilise glass fines in civil works but in some cases have indicated uncertainty regarding appropriate engineering specifications, for example the percentage of glass fines appropriate for inclusion in a road, in comparison to a footpath.

¹¹ In preparation for reuse in a range of applications, recovered glass can either be roughly crushed, processed into cullet of a specified size, or processed into fines.

Industry has called for an update to the waste regulations, so that collected glass is considered a valuable feedstock rather than a waste. Industry preference is for a framework that allows them to produce and store recovered glass in sufficient quantities to meet demands for a sand substitute for larger infrastructure projects.

All governments opportunity: Increase use of recycled glass content in civil works and infrastructure projects to stimulate demand for glass that cannot be remanufactured into glass packaging.

State and territory and Commonwealth opportunity: Develop and align specifications for the use of recycled glass in a range of construction applications.

Reducing glass contamination

There is an oversupply of low-quality glass cullet in Australia, resulting in low prices and generally making recycling uneconomic, unless glass is down-cycled into crushed glass for use in civil works.

Source separation of glass would result in a cleaner glass stream, help avoid loss of glass suitable for remanufacturing through breakage and reduce contamination of other recyclables. Source separation would improve the overall quality of glass that is collected and increase the capacity for recycled glass to be recovered for cullet production and remanufacturing. This is being trialled by several local councils.

There are also opportunities to reduce contamination by avoiding glass containers that are problematic in Australian recycling systems. For example, glass containers that have significant amounts of plastic shrink wrap introduce additional plastic contamination to glass recycling processes.

State, territory and local government opportunity: Consider source separation of glass to improve quality and avoid contamination of other materials from breakage. This could be achieved through away from home glass recycling through bottle banks and extended container deposit schemes, or through recycling glass in a separate kerbside bin.

State and territory opportunity: Identify common problematic glass containers that lead to contamination issues and work towards improving the recycling outcomes or phasing out problematic containers in a harmonised way nationally.

Industry assistance to invest in new glass processing infrastructure

Supplies of unprocessed glass need to be located close to the glass manufacturing businesses due to the high cost of transport. New reprocessing (beneficiation) capability in targeted locations could avoid costly shipping for remanufacturers and make recycling more economic.

Commonwealth, state and territory government opportunity: Support industry to increase capacity to beneficiate glass cullet and fines in Australia, so glass can be remanufactured back into new glass bottles or other required products.

Tyres

Industry assistance to invest in new tyre processing infrastructure

Australian businesses that rely on the export of whole baled tyres, particularly passenger tyres, have expressed concern about the impact of the ban on their viability. This is particularly the view of small and medium sized businesses. Some of these businesses have indicated an interest in moving from low start-up cost operations such as tyre baling to tyre shredding or pyrolysis.

There is industry and peak body support for the view that there is sufficient spare processing capacity in Australia to manage the volume of used tyres which would need to be processed domestically under the export ban. Targeted investment may be needed in some instances to ensure there is sufficient capacity close to the source of used tyre generation.

State, territory and Commonwealth opportunity: Consider targeted financial incentives to increase industry capacity to process tyres for export or use in domestic markets.

State and territory government opportunity: Work with operators to ensure that environmental risks are appropriately managed where recycled tyre products are produced and stored to service large infrastructure contracts.

Accelerate development of standards for tyre derived products

Industry has advised that national standards and specifications for use of tyre derived products in infrastructure, particularly roads, would assist in increasing their uptake and demand. Standards would reduce the perceived risk associated with using recycled materials by providing specific conditions that need to be met in order to attain an approved level of performance. Specifications prescribe materials types, qualities and dimensions, and could include requirements related to tyre derived products. Greater procurement and design specifications for the use of Australian produced rubber crumb would assist in building demand.

All governments and industry opportunity: Introduce specifications for locally made tyre-derived products to help build domestic demand.

Tyre research and innovation

Industry has advised that early stage research and development activities for new uses of tyre derived products currently occurs, but there is limited support to scale up and commercialise innovative solutions. Known innovative applications include the use of recycled rubber crumb in permeable pavements, which can assist in managing flood risks in urban areas.

Support for commercialisation and upscaling of new technologies beyond the pilot/trial stage would provide increased opportunities to use larger volumes of tyre derived products.

All governments opportunity: Partner with industry to conduct research into high value tyre reuse applications, such as binders for roads and permeable pavements.

Improved tracking of tyre fates

Operators are exporting tyre materials under a range of export codes which may not reflect their end-of-life fate. Industry education, monitoring and compliance will be particularly relevant to enforcing the export ban for whole tyres.

All governments opportunity: Develop systems to track the fate of end of life tyres, including working with tyre product exporters to improve accuracy of information captured in export data.

Product stewardship for tyres

The effectiveness of the current voluntary stewardship scheme for tyres is impacted by free riders. A co-regulatory or mandatory scheme could assist in ensuring there is better visibility of the activities of all market players and the flow of tyres through the economy; provide more resources to accredit and audit overseas facilities; support better collection processes; and incentivise tyre re-processing.

Commonwealth opportunity: Investigate the feasibility of moving the existing tyre stewardship scheme to a co-regulatory or mandatory scheme under the *Product Stewardship Act 2011*.

Recovery of mining and agricultural tyres for processing or re-treading

Anecdotal evidence related to the fate of mining and agricultural tyres in Australia is that these products are often landfilled in situ rather than presented for recovery. Mining and agricultural tyres are well suited to re-processing applications such as production of high-value rubber crumb. Consistent with COAG's objective to build Australia's capacity to generate high value recycled commodities, industry has a role to play in committing to responsibly manage and recover these tyres, rather than lowest value disposal into the environment.

Industry opportunity: Commitments are needed from major users of off-road mining and agricultural tyres to collect these products and arrange for processing or re-treading for reuse. This opportunity can provide new jobs in regional and remote communities.

Next steps

Commitments to support the ban

The National Waste Policy, agreed by all Australian governments, provides a national framework for waste and resource recovery. It seeks to protect the health of communities and reduce environmental impacts by increasing recycling and reducing waste. Implementation of the Policy is supported by the National Waste Policy Action Plan which sets targets and actions to guide investment and national effort.

Industry feedback has focused strongly on the need for system-level changes to Australia's waste and resource management practices to support an export ban. Governments agree that there are short and longer term changes required to achieve the export ban and future-proof our waste management and resource recovery systems. There is also a role for governments to provide the policy certainty that is needed to drive market-led responses.

Existing commitments reflect the high priority of waste management reforms nationally, and the strong community support for continued improvement. The export ban presents new challenges and opportunities for Australia's waste and recycling sector. New commitments will ensure the ban positions Australia to take control of our waste and generate high value recycled commodities.

Each jurisdiction has its own unique operating environment, challenges and opportunities when it comes to waste management. Based on the system-level and material-specific opportunities identified in this response strategy, jurisdictional priority actions are outlined on the following pages.

Commonwealth commitments

The Commonwealth is strongly committed to reducing waste, increasing recycling rates and building capacity in Australia's waste and recycling industry. Since 2019, the Commonwealth has committed more than \$167 million to support significant improvements in our recycling rates and shift our waste management and resource recovery sector onto a more sustainable footing.

The Commonwealth has committed to wide-ranging commitments under the National Waste Policy Action Plan, including involvement in 53 of the 80 actions being delivered under the ambitious plan. The actions involving the Commonwealth complement and support the implementation of better waste management plans by state and territory governments, local government and industry.

Implementing the waste export ban successfully will require the collective efforts of all governments and industry. States and territories will continue to retain their primary responsibility for regulating waste and recycling, and local government and communities will continue their critical role providing services and solutions in local communities.

The Commonwealth will play its part by providing national leadership and coordination on system-level actions and investing with state and territory governments, local governments and industry to unlock the critical upgrades that will lead to a step-change in recycling capacity.

Existing commitments which support the waste export ban

The Commonwealth is already delivering a \$167 million Australian Recycling Investment Plan to increase Australia's recycling rates, tackle plastic waste and litter, and accelerate work on new recycling schemes. This was announced in 2019, before COAG's agreement to introduce a waste export ban.

The Australian Recycling Investment Plan focuses on creating the right investment environment to commercialise new technologies, prevent pollution from entering our oceans and create valuable new products. It includes funding to support the manufacturing of lower emissions and energy-efficient recycled content products, new product stewardship schemes and new and innovative solutions to plastic recycling. It also includes funding for new ways of incorporating recycled plastics in manufacturing and construction.

New commitments to support delivery of the waste export ban

Industry feedback has focused on the need for system-level changes to Australia's waste and resource management practices to support an export ban. The Commonwealth agrees there are short- and longer-term changes required to deliver the waste export ban and future-proof our waste management and resource recovery systems. This will be achieved by providing the policy certainty needed to drive market-led responses and, where required, supporting industry transformation.

The Commonwealth is considering actions to position the waste and recycling industry for the future by investing in infrastructure, facilitating demand and funding innovation. Commitments will be needed to:

- invest in industry efforts to absorb waste volumes no longer being exported and innovative solutions for hard-to-recycle waste

- lead by example and stimulate demand for recycled material through procurement in major infrastructure projects and development of new standards
- improve waste data capture and tracking of materials, to support the implementation of the ban and to support strong compliance outcomes.

On 2 March 2020, the Prime Minister announced the Commonwealth will co-invest in critical recycling infrastructure with state and territory governments and industry on a 1:1:1 basis.

The Commonwealth will also amend the Commonwealth Procurement Rules to ensure Commonwealth agencies consider environmental sustainability and use of recycled content as a factor when determining value for money.

The Commonwealth's commitments are expected to be announced in the first half of 2020.

New South Wales commitments

The NSW Government remains committed to working with all levels of government, the waste and resource recovery industry and the community to improve and strengthen NSW recycling systems.

The NSW Government already has a range of strategies and initiatives in place to drive improved waste and recycling outcomes. The *NSW Waste and Resource Recovery Strategy 2014-21* sets ambitious targets to reduce waste generation and increase recycling rates across all waste streams and materials.

To deliver these ambitious recycling targets, the NSW Government has invested significantly in waste avoidance and resource recovery. Under the *Waste Less, Recycle More* initiative, \$802 million has been invested over nine years to support local communities, councils and businesses to reduce the impacts of waste on the environment. It is the largest waste and recycling funding program in Australia.

In 2018, the NSW Government announced a range of actions in response to China's enforcement of the National Sword Policy. This included a support package of up to \$47 million to help local government and industry to respond to global recycling challenges associated with the policy. The support package included a range of short, medium and long-term initiatives to ensure kerbside recycling continues and to promote industry innovation.

NSW will build on these commitments as part of the response to the COAG waste bans and broader goals to maximise the use of valuable resources and move towards a circular economy.

Existing commitments which support delivery of the ban

The NSW Government has already committed to a range of initiatives that will support the successful delivery of the ban.

The Government is developing a *20-Year Waste Strategy* that is focused on delivering a sustainable, reliable and affordable waste system. The Strategy, informed by the *NSW Circular Economy Policy Statement* released in 2019, will create a vision and roadmap for reducing waste, driving sustainable recycling markets and improving the waste infrastructure network across the State. The Strategy will consider the options available to ensure NSW can manage its own waste following the export bans, within a broader framework.

The NSW Government is developing a comprehensive *NSW Plastics Plan* alongside the *20-Year Waste Strategy*. The Plan will build on existing government and industry initiatives and identify ways to reduce single-use plastic and support the recovery of plastic in a circular economy.

The Government is continuing to invest in enhanced recycling and remanufacturing capacity as part of the *Waste Less, Recycle More* initiative. In December 2019, NSW announced nearly \$23 million in infrastructure funding for wastes impacted by the export ban.

NSW has had a highly successful Container Deposit Scheme, Return and Earn, in place since December 2017. In just over two years, consumers have now returned more than three billion beverage containers for recycling through the Return and Earn network. The scheme has fundamentally changed people's behaviour and thinking around litter and made a real difference to litter and recycling outcomes in NSW.

While Return and Earn is primarily designed as a litter reduction initiative, it has also had broader positive outcomes on beverage container recycling in NSW. Beverage containers collected through the NSW CDS are collected and sorted without contamination from other types of waste, ensuring they retain their value as high-quality recyclable material. This has led to an increase in the value and demand for scheme materials in commodities markets both domestically and internationally. By providing this growing stream of recyclable material, and reducing the reliance of industry on virgin materials, Return and Earn has become a key contributor to the emerging circular economy in NSW.

In addition, the scheme has resulted in broader positive outcomes including creating new circular economy jobs, producing high quality materials for recycling, creating innovative solutions for resource efficiency and fostering behaviour change through strong community engagement.

New commitments to support delivery of the ban

NSW is undertaking further strategic analysis of current and future needs on waste impacted by the ban, in conjunction with the *20-Year Waste Strategy* development. This information will be used to develop a comprehensive NSW response to the COAG bans, which will include systems-level actions in areas including:

- incentivising and supporting new and enhanced infrastructure capacity for materials impacted by the ban
- market development opportunities, including increasing the use of recycled content through government procurement
- pursuing national best practice standards on kerbside recycling collection
- supporting enhanced research and innovation
- working with all jurisdictions to expand the number and coverage of product stewardship schemes.

Victoria commitments

The Victorian Government is committed to a reliable and effective recycling industry, and shifting Victoria to a circular economy. In February this year, the Victorian Government released a ten-year plan to reform our waste and recycling sector. *Recycling Victoria: A new economy* will invest more than \$300 million to transform our recycling sector and drive investment in world class infrastructure and technology. It will make Victoria's future recycling system more sustainable, create cutting-edge local industries and support more than 3900 new local jobs.

This significant package of reforms is in addition to more than \$135 million invested over the last five years to deliver waste and recycling initiatives.

Key projects within *Recycling Victoria* include:

- \$129 million for initiatives to reform kerbside recycling with a four-bin household system, including a separate kerbside glass collection system.
- \$96.5 million to drive research, expand the local processing and manufacturing industry and create more products from recyclable materials. This includes \$28 million to boost the Recycling Victoria Infrastructure Fund for additional processing infrastructure and \$30 million for the Recycling Markets Acceleration Package to make Victoria a leader in recycling innovation and support the development of end-markets for products with recycled content.
- \$71.4 million to ensure high-risk and hazardous wastes are managed safely.

Existing commitments which support delivery of the ban

Prior to *Recycling Victoria*, in 2018 the Victorian Government developed the \$37 million Recycling Industry Strategic Plan (RISP) as an immediate response to major changes to global recycling markets. This was complemented by a further \$34.9 million package of recycling reforms in 2019. Together these programs and initiatives have been targeted to:

- stabilise the recycling sector and provide support to councils and industry to maintain kerbside recycling;
- increase investment in resource recovery infrastructure;
- support the development of new markets to process recycled materials, including to improve the quality of products with recycled content; and
- expand education programs to help the community to recycle more effectively and reduce contamination of kerbside recycling.

New commitments to support delivery of the ban

Recycling Victoria will support delivery of the export ban, including through:

- standardising state-wide kerbside recycling services, with a separate glass collection system. This and a container deposit scheme (introduced by 2022/23) will help reduce contamination of kerbside mixed paper and cardboard and will create high quality glass and plastic for recycling.

- building strong domestic markets for priority recovered materials with a \$30 million Recycling Markets Acceleration package to make Victoria a leader in recycling innovation, creating new products from recycled materials which will include glass, plastic and rubber. This is complemented by a \$17 million program to bring together businesses, government and academics to drive research and development of new technologies for processing and remanufacturing materials.
- increasing oversight of recycling and establishing a new dedicated waste and recycling Act and a new waste authority by 2021 to make sure our recycling system is reliable and transparent.
- a \$28 million boost to double the Recycling Victoria Infrastructure Fund to \$56 million, with an immediate Expression of Interest process for new waste and recycling infrastructure that will enable us to identify an initial portfolio of high priority projects in Victoria by mid-2020.

Potential areas for this new investment in Victoria include developing secondary and tertiary processing infrastructure for material streams affected by the proposed ban, such as:

- processing lower value, mixed paper captured by the ban and additional manufacturing capacity for paper-based products with recycled content;
- sorting additional plastics and providing higher quality material streams for export or downstream processing, new plastic flaking and pelletising capacity, and manufacturing (such as food grade packaging);
- beneficiation and manufacturing capacity to support the use of greater quantities of glass in civil construction applications and new glass to glass manufacturing processes (beyond beverage container manufacturing); and
- additional tyre shredding and crumbing capacity.

Queensland commitments

The Queensland Government launched its Waste Management and Resource Recovery Strategy on 1 July 2019. The Queensland Waste Strategy, along with a number of other initiatives including the commencement of the container refund scheme on 1 November 2018; a ban on single-use plastic bags on 1 July 2018; reintroduction of the waste disposal levy on 1 July 2019; and the current commitment to ban the supply of specific single-use plastics form part of the Queensland Government's response strategy.

Queensland's input to the response strategy reflects resource recovery and infrastructure development priorities, with a focus on regional capacity building.

It is important to ensure that the response strategy recognises Queensland's unique challenges in relation to the logistics involved in transporting recyclables, and the low volumes of recyclable materials generated in more remote locations. Queensland is currently finalising the Waste and Resource Recovery Infrastructure Report, which recommends consideration of hub-and-spoke models to maximise resource recovery opportunities from regional and remote centres. The report provides the basis for a targeted, planned approach to ensure that infrastructure approvals and upgrades are scoped and sequenced in a manner that reflects needs over time.

Existing commitments which support delivery of the ban

Queensland's Waste Strategy documents the State's ambitious 2050 targets of a 25% reduction in household waste, a 90% waste recovery rate, and 75% recycling rates across all waste types; to be delivered under the three strategic priorities of reducing the impact of waste on the environment and communities, transitioning to a circular economy for waste, and building economic opportunity.

Importantly, the priorities set by the Waste Strategy align with the National Waste Policy Action Plan and the proposed national waste export ban.

Queensland's existing commitments which support delivery of the ban include:

- A commitment of through the Resource Recovery Industry Development Program which has already provided more than \$50 million to facilitate industry development
- A Resource Recovery Transport Assistance Package and Small Scale Equipment Grants Program – in recognition of the need to encourage resource recovery and recycling in remote regional areas through transport and infrastructure initiatives
- A sustainable procurement and recycled content action plan
- Leading the development of a voluntary battery stewardship scheme
- Contributing to development of the PV stewardship scheme
- Assessing the feasibility of increased uptake of processed glass, plastic and crumbed rubber into roads and major infrastructure
- Contributions to implementation of the National Food Waste Strategy
- Implementation of national packaging targets.

The Queensland Waste and Resource Recovery Infrastructure Report sets the framework for the development of a Statewide Waste Infrastructure Plan and Regional Waste Infrastructure Plans, commencing with plans for North Queensland and Far North Queensland, which are expected to be completed during 2020. In addition, Queensland is developing an Indigenous Waste Strategy and Regional Action Plans to address the specific challenges faced by individual indigenous communities.

In 2018, Queensland launched its Container Deposit Scheme. The scheme has realized the collection and return of over 1.4 billion containers, with more than \$140M being returned to the community. The CDS has established more than 320 facilities across the State and the scheme utilises an auction portal to maximize the revenue from recycled materials. Clean, baled plastic can be sold through the scheme as a legitimate tradeable commodity.

In addition, the Queensland Government released a Plastic Pollution Reduction Plan in late 2019, incorporating headline actions including a ban on selected single use plastic items.

A number of other Action Plans are in development and planning under the Waste Strategy, including an Organic Waste Action Plan; a Textile Waste Action Plan; and a Litter and Illegal Dumping Plan.

Western Australia commitments

Waste management in Western Australia is primarily managed through two pieces of legislation – the *Environmental Protection Act 1986* and the *Waste Avoidance and Resource Recovery Act 2007* (WARR Act).

The *Closing the Loop: Waste reforms for a circular economy* consultation paper was released in February 2020. The paper contains detailed legislative proposals to improve waste management; Western Australia's waste levy; and assist in moving the State to becoming a sustainable, low-waste, circular economy in which human health and the environment are protected from the impacts of waste. The *Review of the waste levy consultation paper* canvasses broader strategic issues related to the future of the levy's design.

The WARR Act establishes a five-member Waste Authority that advises government on waste matters and administers the Waste Avoidance and Resource Recovery Account which receives not less than 25 per cent of the funds raised by the waste levy.

Western Australia's *Waste Avoidance and Resource Recovery Strategy 2030* is the second strategy to be developed under the WARR Act. It was released in 2019 after extensive community consultation and has three objectives: avoid the generation of waste; recover more value and resources from waste; and protect the environment by managing waste responsibly. The strategy is subject to review at least every five years and is supported by an annual action plan that ascribes actions and resources to eight focus materials that include:

- Paper and cardboard: office paper, newspaper and magazines
- Plastics: packaging and containers
- Glass: packaging and containers

The Western Australian Governments *Our Priorities: Sharing Prosperity* initiative establishes 12 priorities, or targets, to deliver better outcomes for all Western Australians. One of these target areas, 'A liveable environment', includes a specific target that at least 75 per cent of waste generated in Western Australia is reused or recycled by 2030.

Existing commitments which support delivery of the ban

More than \$20 million is allocated annually to waste related programs and initiatives as outlined in the business plan available at www.wasteauthority.wa.gov.au. These include the container deposit scheme, actions to reduce single use plastics, behaviour change and education, funding for local government management of household hazardous waste and Better Bins infrastructure.

The Western Australian Government has established the Community and Industry Engagement program (CIE) which provides grant funds each year to initiatives that support the State's move towards a more circular economy. A recent focus for CIE funding has been for the development of infrastructure that assists in the recovery of materials collected through the kerbside yellow bin recycling service managed by local governments. In 2019, more than \$3.4 million was awarded from the Waste Avoidance and Resource Recovery Account through two CIE grants rounds. Additional funding for the CIE will be included in the 2020/21 annual business plan.

Western Australia's container deposit scheme 'Containers for Change' commences on 2 June 2020 and will mark a significant move towards improved recovery and source separation of beverage container recyclables. The scheme requires eligible containers to be recycled. Continued access to markets for clean, sorted containers will validate the substantial efforts that the community and industry will invest in managing materials more effectively through this scheme.

The State Supply Commission's Sustainable Procurement Policy and Disposal of Goods Policy are being reviewed to reduce waste, increase recycling and increase use of recycled products in goods and services procurement, and incorporate any new requirements into relevant guidance materials. In addition, all relevant State Government Common Use Agreements will be reviewed as they fall due for renewal, to promote opportunities for agencies to reduce their purchase of disposable plastic based products and increase their purchasing of recycled and low-waste products.

The Government and Waste Authority are developing a major long-term behaviour change campaign covering social marketing, media, education and engagement to support consistent messaging and behaviours on waste avoidance, resource recovery and appropriate waste disposal. The behaviour change campaign will commence in 2020 and includes social research to determine initial program focus; a staged program design by specialist behavioural change and social marketing experts for a three-year program; and design and delivery a suite of creative assets.

New commitments to support delivery of the ban

Western Australia will seek expressions of interest from the market to establish local processing infrastructure capacity, in particular plastics processing and crumb rubber production with funding from the Commonwealth.

The Western Australian Government will provide \$15 million of funding to support local processing plastics and tyres, and a contribution of up to \$5 million for access to industrial zoned land.

This investment in local processing capacity will complement a behaviour change program targeted at improving householders' recycling habits and knowledge, the requirement for local governments to produce waste plans that demonstrate how they will achieve State Waste Strategy targets, and ongoing investments through the Community and Industry Engagement funding program for actions that directly address materials subject to the export ban. WA will complement the COAG ban by prioritising these actions in the funding criteria.

Under the CIE, local governments are required to provide waste plans that demonstrate how they will achieve State Waste Strategy targets. Ongoing investments through the CIE funding program will directly address materials subject to the export ban. Western Australia will complement the COAG ban by prioritising these actions in the funding criteria.

South Australia commitments

With highly effective legislative and policy frameworks in place, South Australia has been strongly committed to reducing waste, increasing recycling rates and building capacity in the State's waste and recycling industry and more recently building a circular economy over many years. Coordination of activities between Green Industries SA (GISA) in promoting industry development and the Environment Protection Authority (EPA) as the environmental regulator has been a key element to the ongoing success of South Australia in waste management and resource recovery.

Each year since 2003 South Australia has provided funding to support significant improvements in our recycling and shifting our waste management and resource recovery sector onto a more sustainable footing, developing new technology and researching community behaviours and attitudes. The state has a waste and recycling infrastructure plan, released in February 2018.

The State has recently released the next 5 year waste strategy for public consultation. This is the fourth such 5 year strategy and supports the COAG waste export ban through new proposed policies and programmes across multiple waste streams, whilst also supporting a circular economy.

GISA effectively spends most of its expenditure authority on a variety of elements that underpin the ban. Over the next three years this amounts to \$50m.

Existing commitments which support delivery of the ban

South Australia through GISA is already delivering a multi- million investment plan to accommodate the impacts from China Sword, and related import policies across the region in relation to exported recyclable materials/ commodities. That \$11.5m over 4 years is focussed on improving the quality of recyclable commodities, (especially plastics, fibre, and glass) through infrastructure improvement developing new markets (additional \$1m), public education (\$2.8m) and is itemised in GISA's annual business plan which is transparent and publicly available. A further \$2m is available as infrastructure loans.

In addition, GISA is also investing in Councils to transition and modernise their systems, enabling better data collection and increased diversion away from landfill to recycling and re-manufacturing. GISA also funds waste education and litter reduction programs to schools and the community through KESAB (Keep South Australia Beautiful), building knowledge, understanding, awareness and interest in young people and others.

Green Industries SA has also been investing in the commercialisation of new ideas and technology. The export ready PREP tool used by the Australian Packaging Covenant Organisation is one example of technology which has been successfully commercialised from the GISA 2016 innovation program. Five others were also developed and commercialised. Another program is underway.

Container Deposit Scheme and review: South Australia has had a container deposit scheme in place for over 42 years that helps keep streams of glass and plastic separate from general kerbside recyclable collection, maintaining the cleanliness and value of these materials. The EPA working with GISA, is currently undertaking detailed analysis of kerbside recycling and other factors together with continuing stakeholder engagement to determine if there would be

benefits to expanding the scope of the scheme to select other materials. The SA EPA is leading national work exploring CDS harmonisation opportunities around scope, approvals/labelling and deposit rate.

Procurement: South Australia has been pro-active in trialling and also directly purchasing recycled content materials for roadmaking, and using recycled plastic as lumber replacement for signage, sleepers, etc. there is work about to be undertaken which will build a policy on sustainable procurement for the public sector. Local Government has also been keen to be involved in procuring products which use recycled materials, and GISA has provided seed funding to enable this market development research and development activity.

Sharing knowledge: In all of the aspects of export bans and related activities as they are described in the recently released National Waste Policy, South Australia remains keen to share its knowledge and experience with other states.

Reducing Single Use Plastics: The state government's national leadership to phase out problematic and unnecessary single-use plastic products such as straws, drink stirrers, cutlery and other products has received strong community support in response to the release of the 'Turning the tide on single-use plastic products' discussion paper. Key stakeholder consultation through establishment of a Taskforce, and supporting the delivery of a plastic-free precinct pilot program in which participants are encouraged to replace single-use plastics with reusable and/or compostable alternatives complement and underpin the government's approach.

Export market development: Australian technology isn't common in the industry, yet there are opportunities to develop and export our intellectual property and licence new systems, approaches and ideas, not just commodities. South Australia has held the Global Leadership Forum in Circular Economy for the past 2 years, with a view to allowing international leaders the experience of seeing first hand circular economy applications, ranging from energy, waste and recycling to innovation and water management. South Australia has some exporters of waste and recycling technology and this provides the opportunity to be seen and heard in situ, not at a conference setting.

Regulatory base: a robust regulatory system is required to provide industry with the right settings to invest and innovate. The *Environment Protection Act 1993* was updated in late 2017 to support modern needs and the EPA is pursuing a series of related regulation and policy changes to further enhance fairness and clarify the sector to maximise opportunities to realise the benefits of a more circular economy.

Planning reform: following an extensive review process, South Australia is currently implementing the biggest modernisation of its planning system in 20 years underpinned by the *Planning, Development and Infrastructure Act 2016*

New commitments to support delivery of the ban

The focus for South Australia will align with the new Waste Strategy and support the Commonwealth's commitments on system-level opportunities. Through a combination of demonstrable policy, strategy and financial incentives key areas for South Australia's support are:

- plastics sorting and processing

- new fibre processing opportunities
- new glass fines processing for input to road making
- other market development opportunities as they arise.

Tasmania commitments

The Tasmanian Government is committed to working with all levels of government, the resource recovery sector and the community to improve waste management and resource recovery. The Government has over the past four years acted on several pressing waste management issues in Tasmania. This includes investment in controlled waste and waste tyre processing facilities, tightening the regulation of large waste tyre stockpiles, and assisting with the roll-out of national product stewardship schemes. The Government has also amended the Tasmanian *Litter Act 2007* to provide for increased penalties for illegal dumping and developed an online system to improve reporting of littering and dumping.

The Tasmanian Government is taking a strategic approach to the way it manages waste and resource recovery through the development of Tasmania's *Draft Waste Action Plan*. This Plan adopts the ambitious but achievable waste and resource recovery targets from the *National Waste Policy Action Plan 2019* (80 per cent recovery rate for all waste streams by 2030) and sets out a number of priority areas that require action in Tasmania. It provides a framework for addressing identified priorities and will ensure that Tasmania can address any additional challenges that may be faced in implementing the waste export ban.

Existing commitments which support the waste export ban

The *Draft Waste Action Plan* for Tasmania sets out waste and resource recovery targets for Tasmania and outlines three policies to achieve these targets.

The first is planning for a transition to a Circular Economy by seeking opportunities to introduce Circular Economy principles to a number of Tasmanian sectors (e.g. tourism, higher education and STEM, agriculture, aquaculture and renewable energy). This longer-term policy goal and support to adapt to the export bans will be partly delivered by the other two major commitments in the Plan: the introduction of a state-wide waste levy and a Container Refund Scheme (CRS).

The waste levy will help to achieve an increase in diversion of waste from landfill over time and provide an ongoing funding stream for waste management and resource recovery activities, while the CRS will increase the recycling of eligible drink containers and help to increase their value.

The *Draft Waste Action Plan* also recognises the need to improve waste data collection and management, provide for infrastructure planning and support the waste management and resource recovery sector. This includes helping to boost demand for domestically produced recycled products through adopting sustainable procurement practices across State and local government.

New commitments to support delivery of the waste export ban

The Tasmanian Government will support the introduction of the waste export ban through partnering with the Commonwealth and industry to deliver commitments that increase Tasmania's capacity to effectively process recyclable materials.

Further details on the co-funded commitments will be provided by the Tasmanian Government by the end of the Second Quarter 2020.

Noting that the majority of Tasmania's exported waste products go to Victoria, the Tasmanian Government will also work closely with the Victorian Government to ensure that both states' commitments are well aligned.

Australian Capital Territory commitments

Existing commitments which support delivery of the ban

The ACT has committed to working towards the implementation of commitments arising from a range of drivers including the ACT Waste Feasibility Study and National Waste Policy Action Plan, with a specific emphasis on the COAG waste export ban. This includes improving rates of resource recovery in the Territory through implementing a Container Deposit Scheme, reducing contamination through community education initiatives such as the Recycle Right campaign, and developing innovative waste data systems.

The Territory is party to and contributes to a number of national fora including the Australian Packaging Covenant Organisation and is helping to reduce the use of problematic and unnecessary plastic packaging through the National Packaging Targets, and will also be introducing ACT legislation to phase out unnecessary and problematic single-use plastics.

New commitments to support delivery of the ban

Stakeholder consultation has highlighted the need for a range of actions to support the delivery of the Ban in the ACT. This includes:

- Liaising nationally to ensure a coordinated approach to developing standards to support the use of recycled material, as well as infrastructure funding and development, between jurisdictions and the Commonwealth.
- Identifying significant procurements, such as major road projects, that could use recycled content in government infrastructure procurement. There is the possibility to incorporate glass and certain plastics in road surfacing projects into the future. There is a commitment to recruiting new staff resources to these tasks.
- Examining what upgrades to the ACT's Material Recovery Facility (MRF) are required to allow the production of 'value-added' materials, along with the identification of sustainable markets for these products, including expanding the use of recycled material in the local economy. Current upgrades being considered include capability to wash and flake plastics and wash glass or cullet. The ACT is working with the Canberra Region Joint Organisation (CRJO) on a Regional Waste Prospectus to highlight a strong, cross-border approach to benefit the whole Canberra Region. This includes a proposal for Commonwealth financial support for MRF upgrades.
- Taking decisive regulatory action to ban the sale and/or supply of select single-use plastic items in the ACT. This will be achieved through a new Plastic Reduction Act which will implement a staged ban on the provision of single-use plastics. The first phase will be a ban on single-use cutlery, plastic stirrers and polystyrene takeaway food and beverage containers. Phase 2 is proposed as a ban on single-use fruit and vegetable 'barrier bags', oxo-degradable plastic products and straws. The government will also implement a ban on the provision of single-use plastic at ACT Government events. The final phase will be a sustainable regulatory framework to manage problematic and/or unnecessary plastic in the future.

Northern Territory commitments

In the Northern Territory, waste is regulated under the Northern Territory's *Waste Management and Pollution Control Act* (WMPC Act) and the *Environment Protection (Beverage Containers and Plastic Bags) Act 2011* (EPBCPB Act). The WMPC Act provides for the management (including treatment and recycling) of recyclable waste products through a general environmental duty and through licences and approvals. The EPBCPB Act establishes the administrative and financial arrangements for the Northern Territory's container deposit scheme (CDS) and for the ban on lightweight single-use plastic bags.

The Northern Territory, along with the Commonwealth and other states and territories endorsed the National Waste Policy: Less Waste More Resources and the National Waste Action Plan for the implementation of the Policy.

The CDS has been in effect since 2012; and the NT has had a ban on lightweight plastic bags since 2011. The success of these programs is evident by the high return rate of beverage containers (reported at 84 per cent in 2018-19) and the general acceptance of the plastic bag ban.

The Northern Territory will continue to explore opportunities that could assist in the stimulation of the resource re-use and recycling industry in the NT.

Existing commitments which support the waste export ban

The Northern Territory is committed to working with industry, the community and other jurisdictions to implement the Council of Australian Governments' decision to ban the export of waste tyres, plastics, glass and paper from Australia and to facilitate opportunities to reduce, recycle and reuse waste in the Northern Territory.

The NT is improving its tracking of waste through the development and implementation of an electronic waste tracking system. This will increase our understanding of the volumes and movement of waste products in the Northern Territory, and importantly where opportunities exist to improve waste reuse and recycling.

The NT has committed to reforming its container deposit scheme by 2021 through the implementation of the recommendations from an independent review of the scheme. These reforms will improve flexibility and scope of the scheme to provide for greater opportunity for recycling, increase accessibility to the scheme in regional and remote areas and improve the understanding of the end of life materials recycled through the scheme.

Market opportunities in the waste sector are currently being investigated through an independent analysis due to be completed in May 2020. A Waste Summit scheduled for 1 and 2 April 2020 will provide an opportunity for industry, governments (Territory and local), communities and research organisations to provide expert advice to inform this study.

Technical specifications in the NT will be reviewed to allow more recycling and reuse. Northern Territory Government Procurement Managers will be encouraged to consider recycling in reuse in their project design and documentation. This includes the potential reuse of recycled content in construction and maintenance activities.

The Northern Territory Government has committed \$1 million to provide grant funding to facilitate waste management resource recovery in regional and remote communities.

The NT will work with industry and other key stakeholders to identify problematic and unnecessary single-use plastic packaging in the NT, and work collaboratively with other jurisdictions to develop nationally consistent data classifications, definitions and specifications for recycling.

New commitments to support delivery of the waste export ban

In order to further support the implementation of the export ban and facilitate development of a local circular economy for certain waste products, the NT will investigate

- A reduction in the use of single use plastics
- Increased opportunities to recycle products, especially in regional and remote areas
- A greater focus on the reuse of recyclable products locally
- Industry development and infrastructure to facilitate the growth of the waste sector.

The Northern Territory will work with the Commonwealth and other stakeholders to examine the market impacts, gaps, and opportunities associated with the COAG waste export ban. This will include identification of specific industry development incentives to support Northern Australia's transition towards a circular economy, with a particular focus on regional and remote markets.

The NT's commitments are expected to be announced in the first half of 2020.

Measuring success

The National Waste Report is a national measure of waste and resource recovery in Australia, with the 2018 National Waste Report providing a baseline for measuring national progress on achieving the targets and actions in the Action Plan. In addition, the national waste account integrates economic and environmental data to improve our understanding of the challenges and opportunities for Australia's waste and resource recovery industries. The account will provide contemporary information to help measure progress on delivering the agreed national targets, including the waste export ban.

Measuring the impact of the export ban will take into account a range of factors, including:

- Tracking expected increases in Australia's processing capacity related to materials which are in scope of the ban.
- Achieving the landfill targets specified in the National Waste Action Plan, to avoid increasing the diversion of waste to landfill.
- Tracking the value of exported waste-derived products, with the expectation that negative value exports (paying other countries to take our waste) will be reduced.
- Environment Ministers will consider updates annually on the progress of the ban.

Success will also be measured by the comprehensiveness of the commitments made by all levels of government and industry to support industry transition and transformation.

Appendix A – Consultation overview

Feedback mechanisms

Since COAG's August 2019 announcement, Australian governments have been consulting widely with industry and other impacted stakeholders. To date, the Commonwealth taskforce responsible for overseeing ban implementation has met with and spoken to over 100 individual businesses about the expected impact of the ban on their operations. Industry views have also been sought on current challenges and the types of transition activities needed to secure longer term change in the waste and recycling sector.

As a mechanism for formal written feedback, a discussion paper was released by the Commonwealth on behalf of all jurisdictions, which was open for submissions between 13 November and 3 December 2019.

Of the total 103 submissions, over half of the respondents were supportive or neutral towards the ban. Most submissions were made by businesses and organisations whose primary location is in New South Wales, followed by Victoria and Queensland. There were 55 submissions by businesses whose primary activity includes collecting, sorting, processing, manufacturing, supplying and exporting plastics, paper, glass and tyres.

All non-confidential submissions are available on the Department of Agriculture, Water and the Environment's website, <https://www.environment.gov.au/protection/waste-resource-recovery/coag-waste-export-ban-consultation>.

The states and territories also held industry roundtables between 25 November and 18 December 2019 to better understand local or state-based issues. These drew more than 80 attendees. The Commonwealth also convened a national roundtable on 10 December 2019 with national peak bodies.

A COAG consultation Regulation Impact Statement (RIS) was released on 20 December 2019 seeking input from industry and interested stakeholders on the regulatory and non-regulatory options under consideration to implement the waste export ban. Consultation on the RIS closed on 12 February 2020, with a total 54 submissions received. Informed by input from stakeholders on regulatory and non-regulatory options, a Decision Regulation Impact Statement was provided to COAG in March 2020 to support its final decision on the ban.

Findings overview

Key themes arising from submissions and industry roundtables included:

- Support for mandated government procurement to fill the expected short-term gap in domestic demand for recycled materials.
- Strong preference for the ban to exclude clean sorted cardboard and paper which are high value, ready for re-manufacture, and do not negatively affect the environment or human health in receiving countries.
- Support for mandatory product stewardship and extended producer responsibility schemes across waste streams.
- Support for reducing reliance on hard-to-recycle products such as mixed material packaging.
- Support for expedited development application timeframes to support investment in new infrastructure, and risk-based licensing requirements.
- Concern around organisational readiness for the ban.
- Concern from businesses who do not currently produce 'value added' materials that the ban would impact their ongoing viability.
- Concern that insufficient domestic demand is likely to result in further landfilling of waste materials.
- Concern from businesses that they would be left with stranded assets like baling equipment.
- Issues from local councils around costly renegotiation of contracts with waste management providers.

Appendix B – Waste export facts and figures

The Commonwealth has collected and compiled data and information to underpin decisions on which materials should be subject to the export ban. This Appendix provides facts and figures on in-scope waste streams, the sources of this material, where material is exported from, and the end fates of material once it is exported.

Table 1: Types of waste that are relevant to the export bans

Waste material	Summary
Plastics	<ul style="list-style-type: none"> Of the exports affected by the ban, plastics comprised 29% of the tonnage (187,354 tonnes) and 34% of the value (\$43.4 million). The higher-value plastic types (PET, HDPE) are 19% of the waste plastics exported, 72% of the value. This material has strong markets both domestically and internationally. Low-grade mixed plastic types are 80% of the waste plastic exported, 72% of the value. Largely from municipal recycling, this material has less market demand both domestically and internationally. Of all waste plastics exported, 34% is sent to Indonesia, 30% to Malaysia, 9% to the Philippines, 6% to Thailand, 6% to Taiwan and 6% to China. 43% of Australia's exported waste plastic leaves from NSW, 40% from Victoria, 8% from Queensland.
Paper and cardboard	<ul style="list-style-type: none"> Mixed paper comprised 59% of the export tonnage (377,728 tonnes) and 59% of the value (\$74,972 million¹²). These materials are largely from municipal recycling sources and are often contaminated by food, glass fines and plastics making them more difficult to recycle. Of all the waste paper and cardboard exported under five export codes, 48% is sent to China, 14% to Indonesia, 13% to India, 9% to Thailand, 7% to Vietnam and 5% to Malaysia. 39% of Australia's mixed paper exports leaves from Victoria.
Glass	<ul style="list-style-type: none"> Glass comprised 2.5% of the export tonnage (16,100 tonnes) and 0.56% of the value (\$716,000). Of all the waste glass exported 79% is sent to Malaysia. 90% of Australia's exported waste glass leaves from Victoria.
Tyres	<ul style="list-style-type: none"> Tyres comprised 19.5% of the total export tonnage (61,282 tonnes) and 6% of the value (\$7.83 million). Of all waste tyres exported, 47% is sent to India, 34% to Malaysia and 7% to South Korea. 35% of Australia's exported waste tyres leaves from NSW, 36% from Victoria and 11% from Western Australia.

Source: Based on ABS and ABF data (2018-19).

¹² As a result of fluctuating global markets, the value of mixed paper has been in decline since the second half of 2017. This trend continued in 2019 with prices declining in October, and negative prices for some low quality mixed paper bales.

Appendix C – Current waste plastic, paper, glass and tyre exports

Export of waste plastic

In 2018-19, plastic accounted for 29 per cent of total waste exports (mostly to Asia). 81 per cent of waste plastic exports are low-grade mixed plastics which usually comprise various unprocessed products made from different polymer types. Comingled / kerbside recycling is a major source of mixed plastics currently exported.

Some polymer types, mainly ethylene (PET, PE-HD, PE-LD and PP) are also exported separately. These may have undergone some processing, for example plastic bottles from container deposit schemes or plastic that has been sorted from other waste or by polymer, or plastic that has been washed and flaked.

NSW (43 per cent) and Victoria (40 per cent) are the largest exporters of waste plastic, accounting for over two thirds of exports. Some waste plastics from other jurisdictions is likely to be transported to and exported from these states.

Export of waste paper and cardboard

In 2018-19 about 5.6 million tonnes (Mt) of paper and cardboard waste was generated in Australia. Of the 3.4 Mt (60 per cent) of paper and cardboard recovered 1.118 Mt was exported, with an estimated total value of \$235.1 million.

Cardboard from commercial and industrial (C&I) collection (59 per cent) and mixed paper from municipal collections (34 per cent), make up most of the exported paper and cardboard material, with smaller quantities of recovered office paper, newsprint and pulp being exported.

C&I recovers the majority (68 per cent¹³) of Australia's recovered paper and cardboard with substantial volume being post-consumer paper recovery due to the business-to-business nature of the use of packaging. Increasing e-commerce and home deliveries will increase co-mingled kerbside collections and the passage through materials recovery facilities.

In 2018-19, Victoria was the largest exporting jurisdiction of mixed paper at about 39 per cent. NSW and WA both exported about 20 per cent, Queensland 12 per cent, South Australia 8 per cent and the Northern Territory 0.23 per cent. The ACT and Tasmania were nil as their mixed paper is transported to other jurisdictions for export or managed domestically.

Export of waste glass

According to the National Waste Report 2018, 1.1 million tonnes of waste glass was generated in Australia. 612,000 tonnes was recovered for recycling and only 16,100 tonnes was exported, with an estimated total value of \$716,000. Glass is exported under one customs code, so it is not clear from this information in what form glass has been shipped. However, industry consultation indicates that glass is exported as cullet and a small percentage as glass

¹³ Industry Edge, *Assessment of Australian paper & paperboard recycling infrastructure and 2018-19 exports, including to China*, October 2019

finer (pool filtration media). Recycled glass is primarily used for domestic manufacturing, including in glass packaging.

Victoria was the largest exporting jurisdiction of recovered glass, representing 90 per cent of all national exports.

Export of waste tyres

In 2018-19, around 43 per cent by weight of tyres sold in Australia were passenger tyres, 33 per cent truck tyres, and the remainder were off-road tyres.

In 2018-19, 465,000 tonnes of tyres reached end of life in Australia. Around 208,000 tonnes or 45 per cent of these tyres were processed locally, disposed of onsite (mainly mining tyres), sent to landfill or stockpiled. A further 255,000 tonnes were estimated to be exported, as baled whole or shredded tyres as fuel for cement kilns or electricity generation, or pyrolysis for fuels and steel recovery. Whole used tyres were also exported for reuse or re-treading overseas.¹⁴

India is the major receiving country for Australian waste tyres, importing around 39 per cent of all tyres exported; Malaysia and South Korea received 28 per cent and 19 per cent of our end of life tyres respectively.

¹⁴ Envisage Works, *Tyre flows and recycling analysis – Project Report*, October 2019