

# Recovered Resources Market Bulletin

March–May 2020

Victorian Market Intelligence Pilot Project (edition #12)



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## Summary

This is the 12<sup>th</sup> of a series of pilot monthly bulletins that Sustainability Victoria (SV) and the Waste Management and Resource Recovery Association of Australia (WMRR) are distributing to the community, industry and government to provide an overview of the kerbside recycling markets in Victoria.

The bulletins provide an up-to-date picture of the health of resource recovery markets, ongoing challenges and opportunities in the sector, and details of the actions taken to improve the resilience and recovery performance of kerbside recycling.

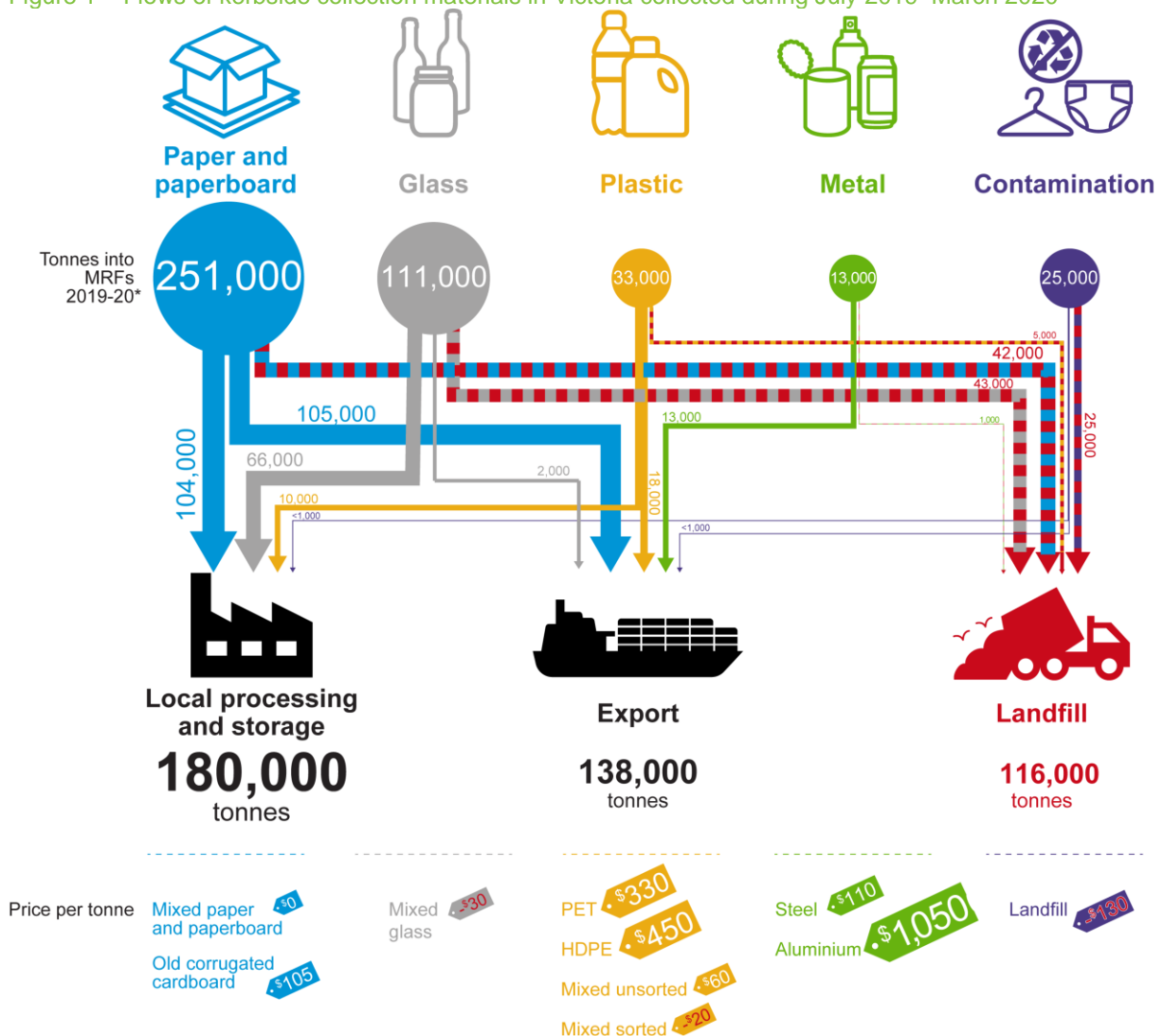
This bulletin includes export data to the end of March 2020, and pricing updates to the end of April 2020. This is the first bulletin released since the coronavirus (COVID-19) global pandemic.

Following a successful 12-month pilot program and evaluation, SV and WMRR are producing three additional monthly bulletins while considering a future bimonthly or quarterly release. The bulletin format may also be updated, but the core time-series kerbside market datasets will continue.

## Market overview

Provided in Figure 1 below is an overview of the flows of kerbside collected recyclables over the first nine months of the 2019–20 financial year.

Figure 1 – Flows of kerbside collection materials in Victoria collected during July 2019–March 2020\*



*\* Note that flows are for the first nine months of the 2019–20 financial year.*

Of the 436,000 tonnes of kerbside materials collected 320,000 tonnes or 73% were sent to downstream processing (including export), and 120,000 tonnes or **27% was sent to landfill**.

The landfilled quantity is unusually high as it includes 54,000 tonnes of kerbside recyclables sent directly to landfill due to the temporary closure of the former SKM MRFs (now operated by Cleanaway) across August–November 2019. It is also reported that there are increased quantities of contamination entering kerbside recycling collections, and being sent to landfill, since the beginning of the year.

There continues to be an estimated **100,000–200,000 tonnes of kerbside recyclables in metro storage (including glass)**, mostly accumulating throughout 2018. The eventual fate of this material is unclear, but a reasonable proportion is likely destined for landfill disposal at some point in the future.

Victoria has a heavy reliance on the export of recyclable materials. In March 2020 Victoria's exports were:

- 41% of national post-consumer paper & paperboard (47,000 tonnes of 114,000 tonnes). Compared to the 46% in February and 32% in January 2020.
- 47% per cent of national post-consumer plastic (4,000 tonnes of 9,000 tonnes). Compared to the 50% in February and 56% in January 2019.

The exports outlined above include material sourced through commercial and industrial collections (not just municipal kerbside collected materials), and some interstate material (e.g. from Tasmania). However, the data above illustrates the strong dependency of Victorian post-consumer markets on export markets, and the continuing need for **additional local remanufacturing capacity and demand in Victoria**.

## **Kerbside recycling markets: March–May developments**

### **Market-wide developments**

**Development 1 – MRFs and reprocessors are generally operating as usual.** There are no reported disruptions to major Materials Recovery Facility (MRF) operators or downstream reprocessors as at 7 May. The impact of the coronavirus (COVID-19) pandemic is not yet as significant as might have been anticipated. Anecdotally major MRFs are reporting that they are up 10% in throughput in April.

**Development 2 – SV, the Department of Environment, Land, Water and Planning (DELWP) and the Waste and Resource Recovery Groups (WRRGs) are being highly active in seeking further information and monitoring developments, to manage the impacts of the current circumstances.**

**Development 3 – Communications around contamination progressing.** In early May SV provided recycling contamination communications materials to industry and councils to reduce contamination in kerbside recycling bins, including a [website](#) to search individual items. SV, DELWP, WRRGs and the Environment Protection Authority (EPA) are also coordinating key messaging to households about illegal dumping of hard waste and e-waste, and safe disposal and storage of household chemicals.

**Development 4 – Logistical issues with exporting scrap materials currently a significant issue.** Empty container availability is low, shipping vessels have been cancelled or deferred, and freight price rate increases are reported. There are some additional issues or port restrictions in other countries (e.g. tin-plate steel cans into India).

**Development 5 – The series of new actions announced on the 24 February 2020 under the new [Recycling Victoria](#) package of policies.** With \$129 million in funding, including the

statewide rollout of a four-bin waste and recycling system (with separate glass bin) starting in 2021.

**Development 6 – The introduction of a Victorian container deposit scheme in 2023.** With the adoption of CDS in WA in late 2020 or 2021 and Tasmania in 2022, all Australian states and territories will have a container deposit scheme in operation. The Australian Packaging Covenant Organisation (APCO) has also formed a national CDS Working Group to facilitate nationally coordinated improvements and alignment in schemes.

**Development 7 –** The Victorian Government is working towards the categorisation of waste collection as an essential service, supported by a new Act and waste authority.

**Development 8 – Complementary to the Recycling Victoria package of policies the Recycled First policy was announced on 2 March 2020.** While the detail on the policy is not yet available, it will drive the large-scale use of recycled materials in more than 100 major road and rail projects across Victoria.

**Development 9 – COAG released the [Waste Response Strategy](#) on 13 March on phasing out exports of waste plastic, paper, glass and tyres.** The unprocessed glass ban is the first on the timetable and will commence 1 July 2020. The mixed plastics ban is the next and will commencement on the 1 July 2021.

**Development 10 – APCO released the national [Our Packaging Future](#) strategy document.** The report provides the strategies and actions framework for achieving the 2025 National Packaging Targets. It is highly relevant to Victorian kerbside recycling markets, and the purpose of these bulletins. The focus of the document is on improving packaging design, improving collection and reprocessing systems, and expanding end-markets for the recovered materials.

**Development 11 – Lack of independent data on contamination levels in kerbside collections.** The picture on changes to kerbside recycling contamination levels in kerbside recycling bins due to the coronavirus (COVID-19) pandemic and changed consumption patterns is unresolved. Some but not all MRF operators have reported an increase in contamination.

**Development 12 –** A number of businesses across different levels of the recovery chain are reporting delay of payments by clients. This is leading to cash flow issues for recycling sector businesses, aggravated by lower sales trading volumes in general.

## Paper & paperboard

**Development 13 – Less supply of paper, but also less demand.** There continues to be demand for recovered paper, especially old corrugated cartons (OCC) but there is also evidence that the price has softened due to reduced demand for finished packaging.

**Development 14 – Less cardboard available for recycling.** Supply of recovered paper from the Commercial & Industrial (C&I) sector has, in total, seen a large reduction due to the pandemic. Major retail sources continue to provide large volumes of material, but secondary C&I supply (smaller retailers) has slowed to a trickle, especially related to shopping centres and similar facilities.

**Development 15 – Pandemic is occurring in a context of record low pulp prices.** Global pulp prices remain low, and at the bottom of their cycle. This is feeding into sustained lower prices for recovered paper and paperboard, with notable exceptions related to key points of disruption.

**Development 16 – Accelerated reduction in availability of newsprint for recycling.** Kerbside newsprint volumes have reduced, resulting in minimal and perhaps no sorting of mechanical grades (mixed newspaper and magazine material) in recent months. This may change to targeted sorting as supply becomes critical for some end-users of this material.

## Glass packaging

**Development 17 – Reduced use of recycled glass.** Due to the reduced beneficiation capacity from the GRS closure, the level of recycled glass (cullet) into new glass packaging has been reduced to 31%. This is despite strong pressure from brandowners seeking increased recycled content in their packaging.

**Development 18 – Media reports suggest that O-I may be purchased by Visy.** The major glass packaging producer and recycler, Owens Illinois, has put its Australian operations up for sale. The current speculation is that Visy Packaging may become the purchaser.

**Development 19 – Kerbside reform announced.** The Victorian Government has announced that it will assist local government to introduce a separate four bin collection system from 2021. Four Victorian Councils have already introduced this service configuration, with the City of Yarra to join them later in 2020.

## Plastic packaging

**Development 20 – Virgin resin prices for PET, PE and PP are low and will go lower.**

The low prices for oil and gas, along with massive new virgin resin manufacturing capacity in the Middle East, Northeast Asia and North America across the 2017–2022 period, are resulting in downwards trending virgin resin prices, that are already at the lowest prices in many years. This reduces the competitiveness of recycled resin grades with virgin resin for the foreseeable future.

**Development 21 – Local processing capacity and market demand remains insufficient.**

There has been some downturn in supply of sorted kerbside plastics to local reproducers due to the current circumstances, but collections still exceed local processing capacity. There continues to be a significant gap between strong brandowner demand and local reproducer capacity for food contact grade recycled plastics.

**Development 22 – In March the PACT Group announced the development of a large PET recycling plant in Albury in partnership with Cleanaway and Asahi.** The plant will be completed in late 2021 and have a capacity of 28,000 tonnes. With supply from Cleanaway kerbside sorting sites, and a commitment from Asahi to use the recycled material in their packaging, the development offers a model for similar plastic recycling plants with closed loop supply chains between manufacturers and recyclers.

**Development 23 – Installation of a new plastics optical sort facility at Campbellfield by Polytrade to sort kerbside rigid plastic packaging is due for completion May 2020.** This will add around 10,000 tonnes of sorting capacity for plastics into the system.

**Development 24 – Overseas markets will deteriorate further.** Post-consumer plastics import restrictions into south-east Asian countries, including Thailand, Indonesia, Vietnam and Malaysia are placing many reproducers in those countries under severe stress due to insufficient supply to the end of February. These countries are the main destinations of Victorian scrap plastic exports. The current situation has now increased this pressure even further and many business failures in these overseas companies appear inevitable.

## Metal packaging

**Development 25 – Some stockpiling by MRF operators and scrap metal traders in Victoria.** India is not currently issuing import permits for tin-plate steel can bales. India is the main destination of this material from Victoria (and globally). This is causing stockpiling by MRF operators and scrap metal traders here in Victoria. This is not yet a major issue. Aluminium beverage can bales are not impacted by these import restrictions, but are impacted by the container movement logistical issues previously outlined.

## Market implications and investment opportunities

Here we develop a future looking synthesis of the key implications of the developments, and also provide a quick summary of some of the key investment opportunities that are potentially available.

### Market implications

- **Freight movements have been slowed across April and will be impacted in May:** Victorian export freight movements of scrap paper and paperboard are stable across March, but the second half of April and May conditions have and will deteriorate.  
Empty containers are not in the right locations and ships are travelling light or being cancelled. One major international shipping company stated they are planning for a worse-case scenario equating to 40% drop in trade over the next couple of months.
- **Recycled commodity prices are fairly static to date:** To the end of April there have been no significant decreases in the commodity values of any main kerbside materials. HDPE bottle prices may have dipped 10–20%. Global pulp prices remain low. Tin-plate steel can trading is hampered, however, this hasn't yet started to significantly impact the steel can price.
- **Pressure on MRFs is increasing:** Export movements are even more hampered, this will impact export exposed MRF operators and traders cash flow in the short to medium term.
- **Situation unlikely to return to pre-pandemic conditions:** Looking further ahead, when movement restrictions are reduced, the pressure on kerbside recycling may be anticipated to reduce but is unlikely to go back to pre-pandemic levels. Household adaptation to e-commerce and home deliveries is already well-established. The accelerated migration is unlikely to be fully re-wound.
- **Glass beneficiation capacity needs to increase:** The clean-up of the GRS site and reduction in glass stockpiles is welcome but will only be sustained if the glass beneficiation capacity is increased. This holds the key to meeting recycled content targets and demand, including the pathway for separately collected glass back into packaging.
- **Additional polyethylene and polypropylene reprocessing capacity is required:** The announced PET recycling plant in Albury is important. Similar large-scale infrastructure for polyethylene and polypropylene will be needed if packaging recycling targets are to be met. The Polytrade optical sorting facility in Campbellfield is welcome new capacity to value-add kerbside plastics here in Victoria.
- **End-market development for recycled plastics is growing in importance:** In an environment of low and trending lower virgin resin prices for PET, PE and PP, the end-markets for recycled plastics require massive expansion and competitive support from virgin resin with its uncoded externalities.

### Investment opportunities

#### Market-wide

- MRF modifications for improved separation and contaminant control.
- Community based recycling drop off points with a focus on cardboard, EPS, and soft plastics.
- Safe undercover bale storage with sprinklers.

#### Fibre

- Large scale pulping capacity for recovered paper, either separately or integrated with virgin fibre manufacturing.

- Reprocessing of coated paper and board, especially polymer coated, into non-paper products.
- Procurement of locally manufactured recycled end-products to encourage reprocessing investment.
- Commercial site cardboard compaction equipment.

### **Glass**

- Beneficiation capacity increase. Either new plant or expansion of existing capacity to accommodate Cleanaway generation and the new kerbside bin and CDS collected glass over the next couple of years.
- Glass kerbside bin purchase. Potential state/local government shared cost of rollout linked to uniform bins with maximum recycled content, purple lids and hot stamped education message.

### **Plastics**

- Reprocessing equipment for HDPE and PP from consumer sources. Preferably into food grade quality resin.
- Wash equipment for new and existing plastics recycling plants.
- Separation equipment for PET/PE/PP at MRF or reprocessing sites.
- Commercial LDPE compaction and collection equipment.

# 1. Introduction

## 1.1 About this bulletin

This is the 12<sup>th</sup> of a series of pilot monthly bulletins that Sustainability Victoria (SV) and the Waste Management and Resource Recovery Association of Australia (WMRR) are distributing to the community, industry and government to provide an overview of the kerbside recycling markets in Victoria.

This bulletin includes updates related to ABS export data to the end of March 2020, and pricing updates to the end of April 2020. This is the first bulletin released since the coronavirus (COVID-19) global pandemic.

The bulletins provide an up-to-date picture of the health of the markets, the ongoing challenges and opportunities, and action taken to improve the resilience and recovery performance of kerbside recycling.

The bulletins are a synthesis of monthly updates of ABS export data and published market reports, and more in-depth quarterly updates informed by extensive consultation with industry, government and community stakeholders.

Each bulletin includes a monthly update that includes:

- market overview and current developments
- export data and receiving country updates
- commodity price tracking
- kerbside quantity flow approximations
- market developments and activity updates.

A deeper look at a special topics is provided. The special topic explored in Section 3 for this month is:

- Recycling markets in a pandemic.

SV and WMRR are currently evaluating the ongoing frequency and format for the bulletin, potentially shifting to a modified format and quarterly basis going forward. We will keep all subscribers updated on the plan for the future of the Recovered Resources Market Bulletins.

Please contact SV if you have any comments or questions on this bulletin, or suggestions for future issues:

- Cate Turner – Manager Recycling Industry Support ([cate.turner@sustainability.vic.gov.au](mailto:cate.turner@sustainability.vic.gov.au))
- Luke Richmond – Data Analyst ([luke.richmond@sustainability.vic.gov.au](mailto:luke.richmond@sustainability.vic.gov.au)).

## Who is this bulletin for?

This bulletin is for anyone with an interest in kerbside recycling in Victoria. It presents a holistic overview of material flows and related markets, through generation, sorting, reprocessing, re-manufacturing and end-product markets.

[Bulletin #1](#) presents details of the stakeholders involved in kerbside recycling, and the roles that they can play in shifting kerbside recycling and markets to a more resilient and sustainable future.

The glossary for all the terms used in the bulletin is available [here](#).

## Structure of the bulletin

This bulletin has seven sections:

- **Market summary** – An overview of kerbside material flows, \$ values, and the key issues, opportunities and activities.
- **Introductory section** (this section) – A more detailed and integrated overview of kerbside material markets across all material types (paper & paperboard, glass packaging, plastic packaging and metal packaging).
- **Material specific sections** – Four sections on each material groups (paper & paperboard, glass packaging, plastic packaging and metal packaging). Each section provides: an overview of the material markets; the latest available information on prices, demand and supply; commentary on the key product end-markets for recovered materials; export and/or interstate market activity; and a summary of market risks, opportunities and developments.
- **Special topic areas** – A deeper look at a special topic area or two each month.

## History and context

Around half the world's kerbside packaging was received by China until the end of 2017. While the current recycling market shocks may be the most significant, across even the past decade there have been downturns in the recycled materials market caused by the:

- Global Financial Crisis (GFC) in 2009.
- New Chinese regulations in 2011 aimed at reducing the imports of highly contaminated post-consumer materials.
- Aggressive enforcement in 2013 by the Chinese of the 2011 regulations, through a campaign known as 'Operation Green Fence'.

A key aspect of the export restrictions is a maximum contamination threshold of 0.5 per cent for imported bales of post-consumer mixed paper & paperboard and mixed plastics. This threshold is very low and MRFs internationally, including Victorian MRFs, are not capable of meeting the 0.5 per cent contamination threshold.

See [bulletin #1](#) for a more detailed outline of the history and context of the issues explored in these bulletins. All previous bulletins are available [here](#).

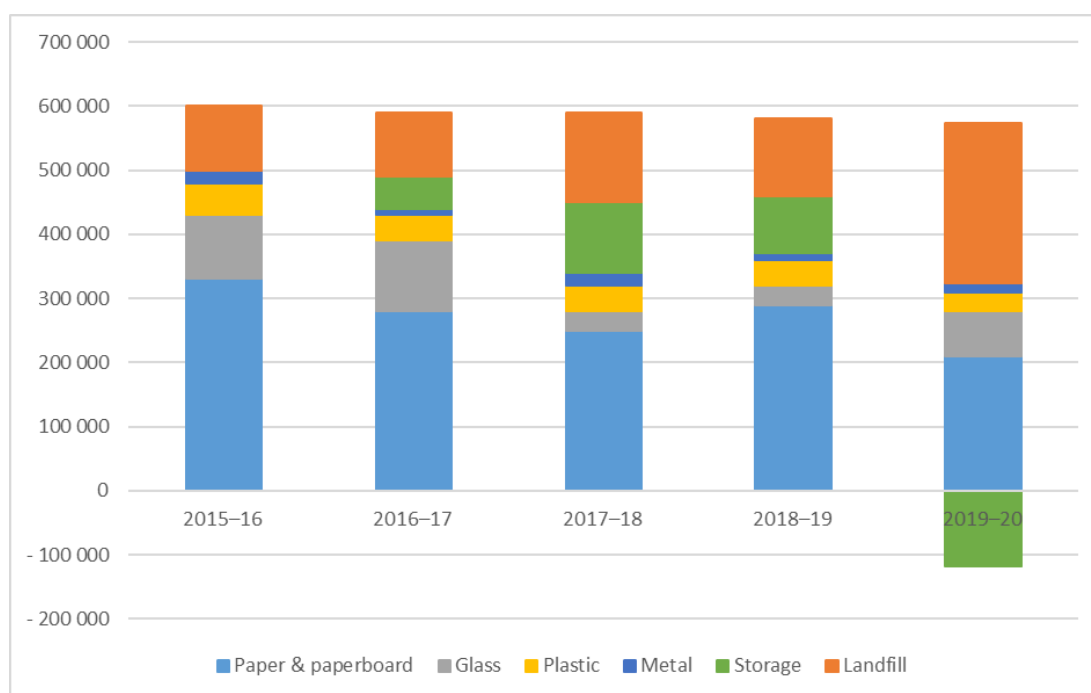
### 1.2 Overview of kerbside recycling flows

Victorian kerbside recyclables collection and sorting systems have been steady over the past three years at around 550–600,000 tonnes per year. After operating losses of 100,000 tonnes of contaminant material and unrecovered recyclables, an estimated 450–500,000 tonnes are available for reprocessing in a typical year. Paper grades and glass account for 85 per cent or more of this processed material by weight.

Not all of the 500,000 tonnes of sorted recyclables are necessarily then processed further into materials ready for the manufacture of new products, and since 2016–17 significant quantities of sorted and unsorted recyclables have been placed into storage due to poor markets or operational problems, and either remain in storage or have been sent to landfill (which has occurred at high levels across 2019–20).

Figure 1.2.1 and Table 1.2.1 provides estimates of annual MRF outputs. Note that 2019–20 data is part-year data for the nine months across July 2019–March 2020 only. Also note that the reduction in storage during 2019–20 of 118,000 tonnes of stored material was all sent to landfill and contributes to the landfill (orange) quantity.

Figure 1.2.1 – Victorian MRF outputs by material category (tonnes)



Note: 2019–20 data is partial financial year across the nine months July 2019–March 2020.

Table 1.2.1 – Victorian MRF outputs by material category, including stockpiled material estimates

Material category	2015–16	2016–17	2017–18	2018–19	2019–20
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Paper & paperboard	330 000	280 000	250 000	290 000	210 000
Glass	100 000	110 000	30 000	30 000	70 000
Plastic	50 000	40 000	40 000	40 000	30 000
Metal	20 000	10 000	20 000	10 000	13 000
Storage <sup>a</sup>	0	50 000	110 000	90 000	- 118 000
Landfill <sup>b</sup>	100 000	100 000	140 000	120 000	250 000
<b>Totals</b>	<b>600 000</b>	<b>590 000</b>	<b>590 000</b>	<b>580 000</b>	<b>455 000</b>

Source: SV (2017; 2018; 2019) and industry consultation.

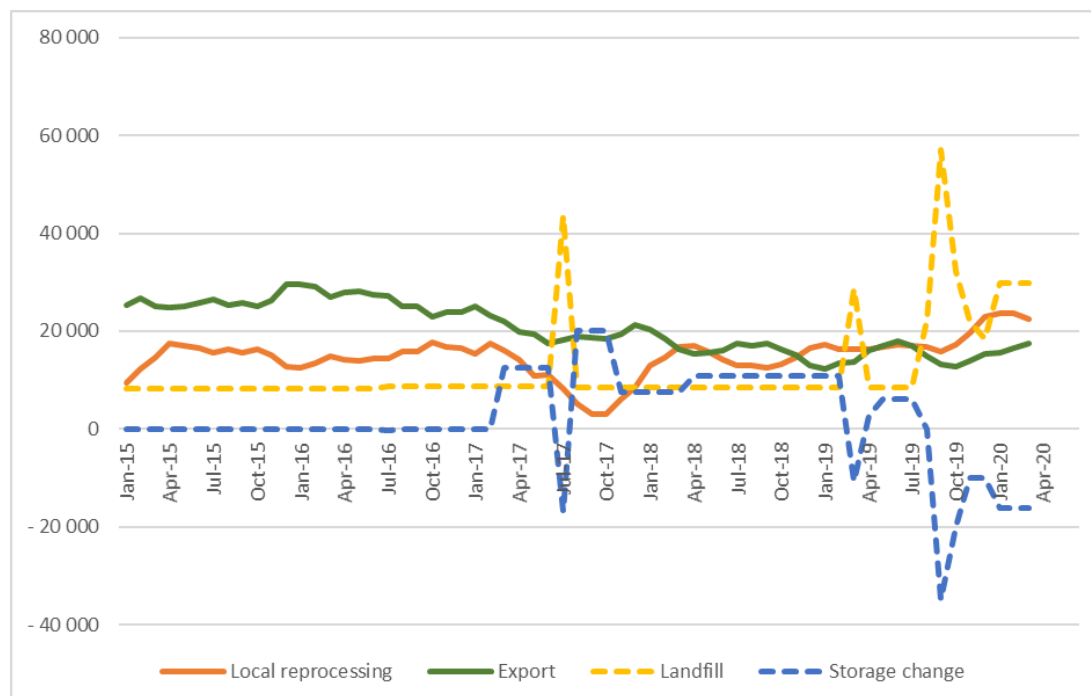
a) Note that there was net growth in storage across 2015–16 to 2018–19, but it has dropped in 2019–20.

b) Includes an estimated 30–40,000 tonnes of fire-related losses in July 2017, 20,000 tonnes of licence compliance related disposal in March 2019, and 110–120,000 tonnes of operational and safety related disposal in 2019–20.

Figure 1.2.2 presents indicative monthly data on the destinations of Victorian MRF outputs. Exports of kerbside materials fell in 2017 and then more sharply in 2018, with some growth in exports across the first quarter of 2020.

There has been some response by the local reprocessing sector in taking up previously exported material since the beginning of 2018, with some new processing capacity builds. This new capacity, primarily in glass (to construction) and plastics reprocessing, should start to have a more significant impact on Victorian recovery rates during the second half of 2020.

Figure 1.2.2 – Destination of Victorian MRF outputs from kerbside sources (tonnes/month)



Note 1: Data in the table above have been estimated based on publicly available sources, with totals verified through consultation.

Note 2: Historical total monthly MRF outputs have been approximated to enable comparison with monthly ABS customs export data. 'Local reprocessing', 'Landfill' and 'Storage change' estimates are indicative only.

Note 3: The 'Storage change' plot is an estimation of the change in material stored or stockpiled in that month.

Note 4: Storage includes estimates of both sorted and baled materials, and unsorted (but baled) materials. It excludes longer-term stored materials from before January 2015, which is most significantly legacy glass storage.

Note 5: Landfill estimates include MRF licence compliance related disposal to landfill, and fire related losses to atmosphere. Landfill data presented are an approximation based on annual waste to landfill rates.

Source: ABS (2020) and Envisage Works.

SKM MRF site clean-ups occurred across September and October 2019, which resulted in possibly 20,000–40,000 tonnes going to landfill to enable facilities to start operating.

In addition, EPA Victoria has been taking ongoing action to improve the safety of the GRS glass stockpile in Coolaroo since the end of October. This has included removing around 100,000–110,000 tonnes of material from the stockpile to mid-April 2020, with some sent to Repurpose It in Epping for recycling, and some highly contaminated material sent directly to landfill.

Legacy SKM storage of unsorted and sorted kerbside material (primarily now in third party owned warehouses), and stockpiled glass at the GRS facility in Coolaroo, is reported to be approximately 150–200,000 tonnes (including glass). There continue to be no reports on the fate of material in warehouse storage (as of the end of April), but some may have been disposed to landfill at the direction and expense of the warehouse owners.

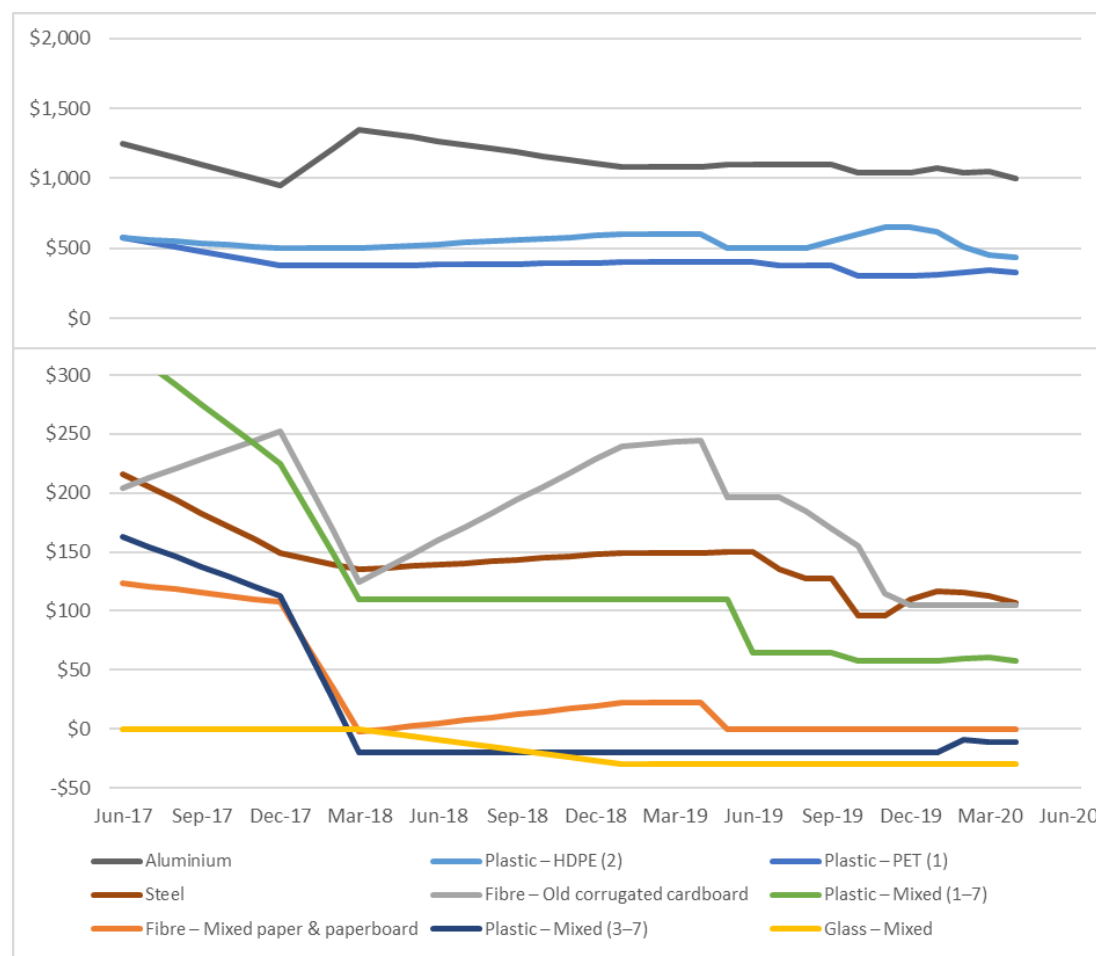
The storage of kerbside materials represents a significant risk to the companies holding these materials.

### 1.3 Market risks, opportunities and activities

Victoria has a heavy reliance on exporting kerbside materials. In March 2020 Victoria made up an estimated 40% of Australian exports of post-consumer materials that might have a kerbside source, compared with 43% in February and 32% in January.

Recovered paper markets have dropped significantly since November 2019. Prices for all grades of recovered paper and paperboard have deteriorated, with OCC prices in particular falling heavily in November and December 2019, but stabilising across January–April.

Figure 1.3.1 – Victorian recovered kerbside materials commodity values (\$/tonne)



Source: Industry consultation and published sources. Prices are approximated at the out-going MRF gate and to end-January 2020. Prices are indicative only.

Table 1.3.1 provides pricing on selected virgin material commodities that are (generally) competing with recycled material. It is important to note that the kerbside material commodity values presented in Figure 1.3.1 are estimated prices at the out-going MRF gate, and prior to any secondary processing (and the associated processing costs).

It is important to note that the very low or negative prices presented above are indicative only, as little or no spot market trading is occurring.

Table 1.3.1 – Virgin material commodity values end January 2020 (\$/tonne)

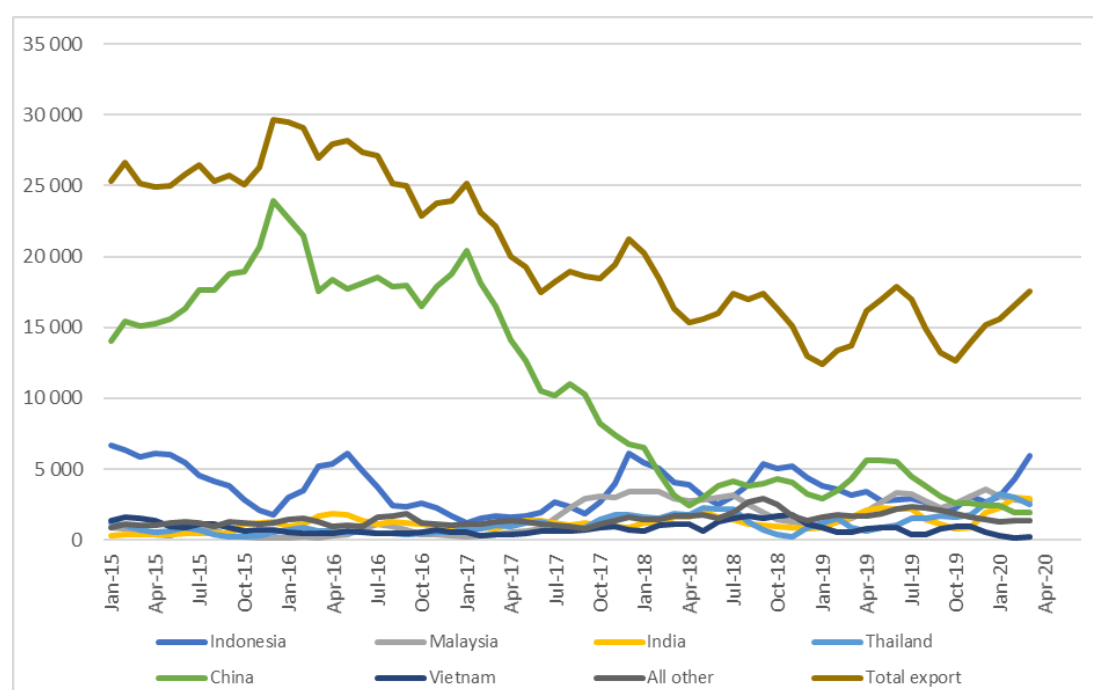
Material category	Value	Comments
Fibre – Bleached softwood kraft (BSK) pulp	\$800–\$850	BSK and BHK pulps are not directly competing with recycled fibre in the Australian market. Values provided to give some context on virgin pulp prices.
Fibre – Bleached hardwood kraft (BHK) pulp	\$650–\$700	
Glass – Virgin material inputs	\$550–\$650	Estimate based on typical flint glass composition.
Plastic – PET (1) virgin resin	\$1,350–\$1,450	-
Plastic – HDPE (2) virgin resin	\$1,400–\$1,500	-
Plastic – PVC (3) virgin resin	\$1,000–\$1,200	Unplasticised PVC.
Plastic – LDPE (4) virgin resin	\$1,400–\$1,500	-
Plastic – PP (5) virgin resin	\$1,450–\$1,550	-
Plastic – PS (6) virgin resin	\$1,800–\$1,900	-
Steel	\$400–\$450	London Metal Exchange (LME) post-consumer steel scrap price
Aluminium	\$1,900–\$2,000	LME aluminium alloy

## 1.4 Export market review

A summary of Victorian exports since January 2015 is provided in this section. In March 2020, Indonesia, Malaysia and India were the three main export destinations for Victorian recovered kerbside materials. See Figure 1.4.1 for Victorian exports of kerbside materials, by country of destination, across the period of January 2015 to March 2020. The significant drop-off in exports across 2017 and 2018 is clearly apparent.

Exports across the first nine months of the 2019–20 financial year are an estimated 137,000 tonnes, which is almost exactly the same as the corresponding period in 2018–19 of 136,000 tonnes.

Figure 1.4.1 – Victorian recovered kerbside materials, to export country (tonnes/month)



Source: ABS (2020) and Envisage Works

Table 1.4.1 below provides annual Victorian exports of kerbside materials, by country of destination, across the period of 2015–16 to 2019–20.

Table 1.4.1 – Annual Victorian recovered kerbside materials, to export country (tonnes/yr)

Country <sup>a</sup>	2015–16 (tonnes)	2016–17 (tonnes)	2017–18 (tonnes)	2018–19 (tonnes)	2019–20 <sup>b</sup> (tonnes)
Indonesia	47 000	25 000	44 000	46 000	29 000
Malaysia	4 000	7 000	35 000	23 000	26 000
India	14 000	13 000	16 000	17 000	16 000
Thailand	6 000	9 000	19 000	12 000	20 000
China	234 000	200 000	78 000	51 000	25 000
Vietnam	8 000	6 000	10 000	14 000	5 000
All other	14 000	16 000	16 000	24 000	16 000
<b>Total</b>	<b>327 000</b>	<b>276 000</b>	<b>218 000</b>	<b>187 000</b>	<b>137 000</b>

Source: ABS (2020) and Envisage Works

a) Countries ranked by average of last three months of exports.

b) Partial year across July 2019 to March 2020.

Table 1.4.2 – Most recent monthly change in Victorian recovered kerbside materials, to export country (tonnes/month)

Country	February 2020 (tonnes)	March 2020 (tonnes)	% change (%)
Indonesia	4 300	5 900	37%
Malaysia	2 800	2 800	0%
India	3 000	2 900	-3%
Thailand	3 000	2 500	-17%
China	2 000	1 900	-5%
Vietnam	100	200	100%
All other	1 300	1 400	8%
<b>Total</b>	<b>16 500</b>	<b>17 600</b>	<b>7%</b>

Source: ABS (2020) and Envisage Works

## 1.5 Overview of status of countries with post-consumer import restrictions

Provided here is an overview of the status (as of March 2020) of countries that receive major kerbside related post-consumer exports from Australia:

- **Bangladesh** – No identified changes in import conditions. There have been no specific import restrictions identified for paper and paperboard, and the identified requirement for post-consumer plastics imports is that they do not contain any toxic or radioactive substances.
- **China (restrictions on post-consumer plastic, paper, metals, and other types of post-consumer)** – No change to the import restrictions which began in March 2018 and

became more extensive at the end of 2018. The contamination threshold is currently 0.5 per cent.

At the end of December 2019, the Chinese foreshadowed a new standard on recycled plastic imports to take effect in April 2020. The new standard requires that all recycled pellets in the same shipment must have consistent physical properties. This change will probably further restrict imports of recyclate into China from all suppliers globally, whether in flake or pellet form. The introduction of this new standard may have been delayed due to the current circumstances.

- **India (restrictions on post-consumer plastics)** – India announced bans in March 2019 prohibiting post-consumer ‘solid plastic’ from being imported into the country, including in special economic zones. Exports of kerbside plastics from Victoria to India are fairly low, so this does not have major implications for exports. However, India is less likely to start importing significant quantities of post-consumer plastics.

The pandemic is reported to have severely disrupted logistics systems and freight movements onto India. As a result India is currently not issuing import permits for tin-plate steel can scrap (along with many other materials) during the Indian lockdown. It is anticipated that this situation will be resolved relatively soon.

It was reported in January 2020 that India is planning on tightening its quality standards and imported mixed paper will be allowed a maximum of 1% contamination. Increased inspections are also reported to be planned.

- **Indonesia (new inspection regime)** – It was reported in early bulletins that as of 1 April 2019 all (100 per cent) post-consumer paper imports into Indonesia will be inspected at ports (up from around 10 per cent previously). However, in practice, it appears so far that inspection rates are somewhat elevated, rather than covering all imports. The contamination threshold (impurity limit) is 0.5 per cent, which is the same as China. Indonesia has sent some kerbside materials back to Australia in 2019 (August and September), but nothing in 2020 as yet.
- **Malaysia (restrictions on post-consumer plastics)** – Restrictions implemented from July 2018, with a significant impact on post-consumer plastics imports. Many import permits were revoked following these restrictions coming into force. In May 2019, reports circulated in the media regarding further import restrictions for waste plastics. The Malaysian Environment Minister noted that plastics will be returned to their country of origin. Malaysia has sent relatively small quantities of kerbside materials back to Australia in 2019, but nothing in 2020 as yet.
- **Taiwan (restrictions on post-consumer paper and plastics)** – Restrictions implemented from October 2018, with only OCC and other higher quality grades accepted. There are also restrictions on post-consumer plastics. Little material from Victoria has been shipped to Taiwan.
- **Thailand (restrictions on post-consumer plastics)** – Restrictions implemented from August 2018, to escalate over the next two years, with tighter controls on e-waste imports also foreshadowed. Low quality plastic waste imports may be banned from 2021.
- **Vietnam (restrictions on post-consumer plastic, paper, metals and other types of post-consumer scrap products)** – Restrictions implemented from around August 2018, with further tightening of post-consumer imports from late February 2019. Low quality plastic waste imports may be banned from 2025.

## 2. Resource markets

### 2.1 Kerbside recovered paper & paperboard (~27 kt/month)

#### Market developments this month

**Development 1 – Less supply of paper, but also less demand.** There is still demand for recovered paper, especially OCC but there's evidence that the price has softened due to reduced demand for finished packaging.

**Development 2 – Less cardboard available for recycling.** Supply of recovered paper from the C&I sector has, in total, seen a large reduction due to the pandemic. Major retail sources continue to provide large volumes of material, but secondary C&I supply has slowed to a trickle, especially related to shopping centres and similar facilities, however anecdotally due to home shopping there is more cardboard in kerbside bins.

**Development 3 – Pandemic is occurring in a context of record low pulp prices.** Global pulp prices remain low, and at the bottom of their cycle. This is feeding into sustained lower prices for recovered paper and paperboard, with notable exceptions related to key points of disruption.

**Development 4 – Accelerated reduction in availability of newsprint for recycling.** Kerbside newsprint volumes have reduced, resulting in less sorting in recent months. This may change to targeted sorting as supply becomes critical for some end-users of this material.

#### Material overview and market summary

Recent months have seen significant changes in patterns of consumption and therefore recovery of all resources, including paper and paperboard.

It is impossible to ignore the role of packaging – especially corrugated boxes – in paper and paperboard utilisation, on the one hand, and recovery and recycling on the other. As demand shocks related to the pandemic impacted different countries and regions, inevitably, supply-chains were disrupted. In turn, this disrupted recovery, with variable outcomes.

The major impact of this reduction has been on OCC, the staple of the paper and paperboard recycling sector. Domestic reprocessors have access to most of the fixed and good quality supply they require through C&I sources. The C&I supplies are supplemented by lower quality kerbside collections, where the preferred kerbside supply is sorted MRF material that has a better quality fibre mix due to demographic reasons and/or additional sorting at the MRF.

Inevitably, with retail shifting increasingly online and deliveries being made routinely to households, household kerbside volumes of OCC are increasing. The percentage of kerbside paper & paperboard that is now cardboard and boxboard is not known, but is probably 70% or more.

The implication of this is that reprocessors are, in aggregate and over time, likely to take a larger volume of kerbside material into their facilities, placing equipment under increased pressure and resulting in larger volumes of unusable material or processing waste requiring disposal.

Looking at old newsprint (ONP), both the supply and demand for ONP is continuing to collapse, driven by closures of regional newspapers and reportedly large declines in newspaper publishing. Other grades of paper driven by advertising are also in short supply, due to the cessation of printing of catalogues and brochures by most retailers and brand owners.

Mainly obtained through kerbside collections, the supply of recovered paper has reportedly declined significantly enough for some collectors to cease any sorting for ONP. As a consequence, ONP is in short supply.

Major end-users of ONP include the moulded fibre (e.g. egg cartons) and pet care (e.g. kitty litter) manufacturers. These end-users are increasingly sourcing other, less suitable supply options, including OCC.

On face value, this is likely to be a shorter-term experience, with demand for quality fibre anticipated to drive increased sorting to specification. However, this will only occur to the extent the collectors and end-users can recover the additional costs of specific sorting, through the prices for their products.

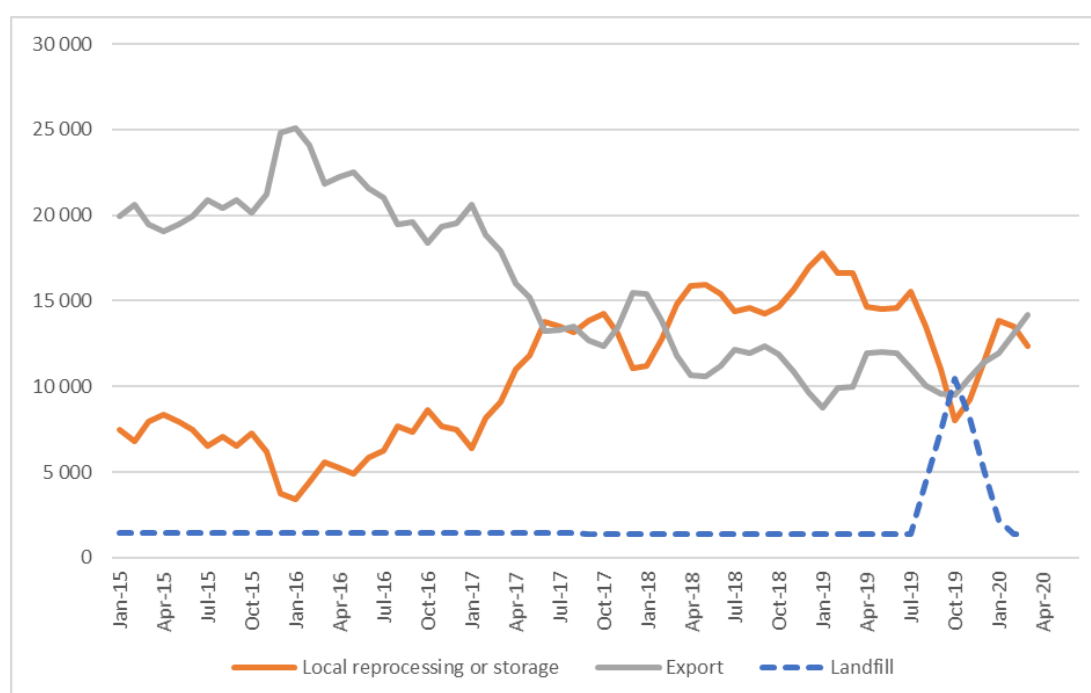
If they are unable to increase their prices, end users will continue to source alternative supply, including from virgin fibre sources.

It is notable that this situation is likely to continue post-pandemic, with the evidence of the last decade being that there is no recovery in newsprint demand (and therefore ONP supply) after significant declines.

Global pulp prices remain suppressed as a result of the pandemic, with notable exceptions in some markets. In the largest market – China – pulp prices have moved sideways for the most part. Exceptions included a period when supply and demand disruptions were evident in March and through to at least late April, when there was a spike in the price of OCC.

Figure 2.1.1 provides data on movements in export and local destinations of kerbside collected paper & paperboard since the beginning of 2015. Exports had been trending upwards since the last quarter of 2019. However, April/May exports are anticipated to show a significant decrease when this data is released.

Figure 2.1.1 – Destination of Victorian MRF outputs (tonnes/month) – Kerbside paper & paperboard



Note 1: Historical total monthly MRF outputs have been approximated in Figure 2.1.1 to enable comparison with monthly ABS customs export data. The overall trends are the key aspect of the figure.

Note 2: The combined 'Local reprocessing or storage' estimate is indicative only, and these fates will be presented separately if this level of data becomes available. Landfill excludes disposal from storage and is an approximation based on annual waste to landfill rates.

Source: ABS (2020) and Envisage Works

## Prices, demand and supply

Increased volumes of kerbside collected mixed recovered paper may contain more OCC and less ONP, but they also contain a reportedly wider range of contaminants, reducing the overall quality and value of the fibre. So much so that much of the material is not even receiving a primary sort, meaning on current policy and market settings, it is likely being sent to landfill.

There is essentially no price for kerbside recovered paper & paperboard material.

Industry advice is that OCC spot pricing is being driven by consistent supply and the need of collectors and sorters to return cash to their businesses. The local market appears directed towards price taking.

## Key end-markets and related specifications

There remain no new end-markets for kerbside recovered paper. It is anticipated there may be some new or marginally expanded opportunities in coming months, but these are likely to arise incrementally, rather than as new facilities or products.

Examples include locally produced food packaging such as moulded fibre egg cartons and fruit trays. That sector's production is very strong currently, including thanks to the 'home baking' renaissance and at least one brand owner has commenced discussions on developing a local product for their dry goods. The challenge to that development may well be finding sufficient quantities of the right quality of fibre (mainly long fibres from softwood trees that have typically been found in ONP).

Continued discussions and some development activity on the future recycling of particular coated packaging grades have been a feature of the domestic market over the last two months. Sometimes considered too complex, there appears to be renewed vigour in the discussions that reflects the underlying value of the fibre.

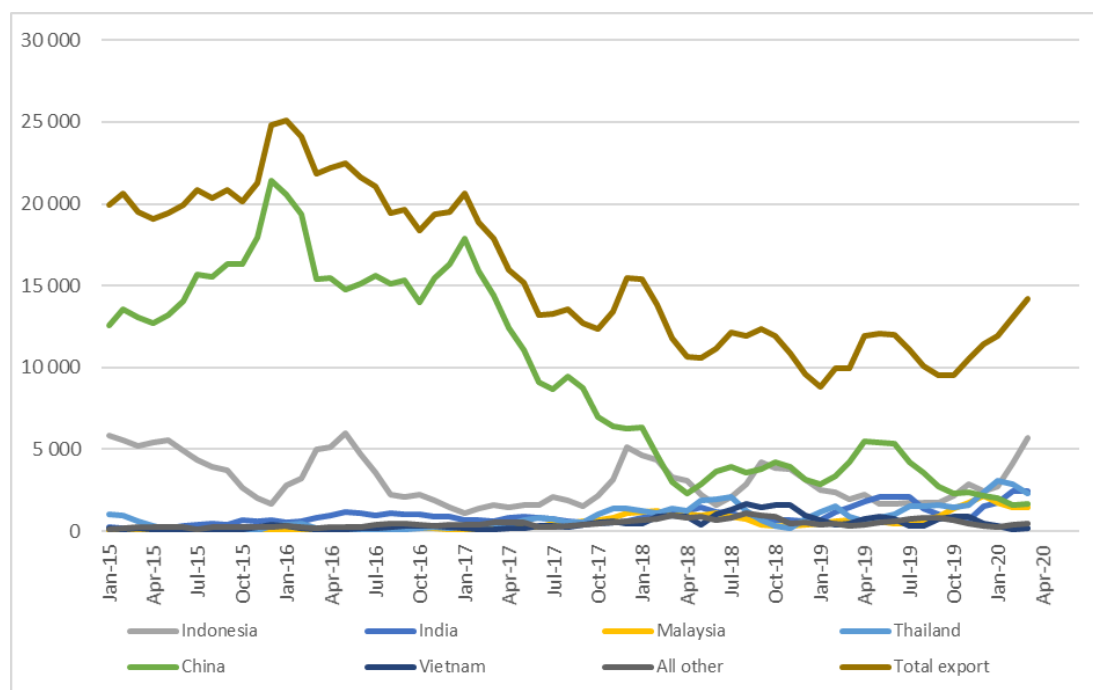
There is significant interest in a major recovered paper pulp facility being developed to produce for both the domestic and international markets. There are a variety of challenges to this being realised, but it seems widely understood that the 'size of the prize' may make those challenges worth adopting.

## Export and interstate market review

Across September and October, kerbside related exports from Victoria fell below 10,000 tonnes, but have rebounded somewhat across the November to March period. However, significant falls across April and May are anticipated.

Even before the pandemic, Victorian 2019–20 exports were on track to be similar to 2018–19 exports, which had the lowest exports since at least 2014–15.

Figure 2.1.2 – Victorian recovered kerbside paper & paperboard, to export country (tonnes/month)



Source: ABS (2020) and Envisage Works

Table 2.1.1 – Annual Victorian recovered kerbside paper & paperboard, to export country (tonnes/yr)

Country <sup>a</sup>	2015–16 (tonnes)	2016–17 (tonnes)	2017–18 (tonnes)	2018–19 (tonnes)	2019–20 <sup>b</sup> (tonnes)
Indonesia	45 000	22 000	35 000	32 000	25 000
India	8 000	10 000	10 000	14 000	14 000
Malaysia	1 000	2 000	11 000	7 000	12 000
Thailand	2 000	4 000	14 000	11 000	18 000
China	204 000	173 000	69 000	49 000	23 000
Vietnam	2 000	3 000	7 000	13 000	4 000
All other	3 000	5 000	7 000	7 000	5 000
<b>Total</b>	<b>265 000</b>	<b>219 000</b>	<b>153 000</b>	<b>133 000</b>	<b>101 000</b>

Source: ABS (2020) and Envisage Works

a) Countries ranked by average of last three months of exports.

b) Partial year across July 2019 to March 2020.

Table 2.1.2 – Most recent monthly change in Victorian recovered kerbside paper & paperboard, to export country (tonnes/month)

Country	February 2020 (tonnes)	March 2020 (tonnes)	% change (%)
Indonesia	4 100	5 700	39%
India	2 500	2 400	-4%
Malaysia	1 500	1 400	-7%
Thailand	2 900	2 300	-21%
China	1 600	1 600	0%
Vietnam	100	200	100%
All other	400	400	0%
<b>Total</b>	<b>13 100</b>	<b>14 000</b>	<b>7%</b>

Source: ABS (2020) and Envisage Works

Into May China will be increasing use of scrap paper, and India appears set to loosen some of its strict lockdown provisions. In early May, the downside market risk appears to have shifted to Indonesia, where the impact of the pandemic is growing rapidly.

### Market risks, opportunities and activities

Recognition of the essential characteristics of the paper and paper products supply chain may have been difficult to avoid during the accelerated purchasing of toilet paper and tissue products, but was really most significant when considered from the packaging papers perspective.

Where would the nation's food supplies have been without corrugated boxes, pallet slip sheets and other forms of recycled packaging materials?

While that demand must eventually wind back to some extent, at the same time, the increased demand for recyclable, renewable and locally produced materials underscores a major development opportunity for the sector, compared with some other material substrates.

The risks to the realisation of those opportunities are however very real. A backslide to previous behaviours by consumers, a return to supply-chain indifference by producers or a slowdown in the innovative developments that have seen products hit the market with a rapidity only seen in a crisis could all see the opportunities for increased local use of recycled fibre not be realised to an reasonable extent.

## 2.2 Kerbside recovered glass packaging (~9 kt/month)

### Market developments this month

**Development 1 – Reduced use of recycled glass.** Due to the reduced beneficiation capacity from the GRS closure, the level of recycled glass (cullet) into new glass packaging has been reduced to 31%. This is despite strong pressure from brandowners seeking increased recycled content in their packaging.

**Development 2 – Media reports suggest that O-I may be purchased by Visy.** The major glass packaging producer and recycler, Owens Illinois, has put its Australian operations up for sale. The current speculation is that Visy Packaging may become the purchaser.

**Development 3 – Kerbside reform announced.** The Victorian Government has announced that it will assist local government to introduce a separate four bin collection system from 2021. Four Victorian Councils have already introduced this service configuration, with the City of Yarra to join them later in 2020.

### Material overview and market summary

The closure of the Glass Recovery Services (GRS) beneficiation facility, the loss of license and it being placed in external administration in January 2020, is resulting in significantly increased quantities of recovered glass from the Cleanaway (formerly SKM) MRFs in Laverton and Coolaroo going to the Alex Fraser glass recycling plant in Laverton for crushing into road base and asphalt construction applications as a sand product.

The quantities are possibly in the order of 400–700 tonnes per day at the current time. The Alex Fraser Laverton facility is currently processing around 400 tonnes per day into asphalt and other construction applications.

There are at least two other sites in Melbourne providing glass material into road construction products. One of these is the Repurpose It facility in Epping, which can campaign wash crushed glass to produce an aggregate that meets specifications for road construction. It is worth noting though that the focus of this facility is on processing excavated construction material (mostly clean fill) to produce aggregates sorted by size profile and is not on glass washing.

The demand for packaging glass-based sand replacement product is high in Victoria as it competes well on price and quality with quarried sand.

With the constrained Victorian beneficiation situation there is also interstate transfers now occurring of cullet to meet Victorian furnace needs. It will not be possible to achieve increased recycled content in glass packaging until beneficiation capacity increases in Melbourne and Sydney. Polytrade is developing a new beneficiation plant in Sydney.

There remains a large stockpile of glass at the closed GRS plant in Coolaroo of approximately 40,000 tonnes. The EPA stepped into managing site safety under its environmental protection powers from late October 2019, and so far has removed an estimated 120,000 tonnes of material from the site to mid-April. This has been done to address hot spots in the stockpiles and to improve access for emergency services vehicles.

Much of the recently removed material has been assessed as heavily contaminated and landfilled. Some material which is predominantly glass, has gone for road construction and asphalt production.

The losses of glass in collection and sorting has motivated several councils to consider collecting glass packaging at kerbside in a separate container. This also improves the quality of paper and cardboard by removing small glass fragments from the recycled fibre.

Glass separate collections have commenced at Hobsons Bay and Macedon Ranges Council areas in February. The City of Yarra has announced it will follow this with a glass recycling bin from early June, after running a trial to 1,300 households in June 2019. Warrnambool Council has also issued a glass only bin for 3,400 residents with future expansion planned. All these councils have used purple lids for glass recycling with most opting for a four week collection cycle.

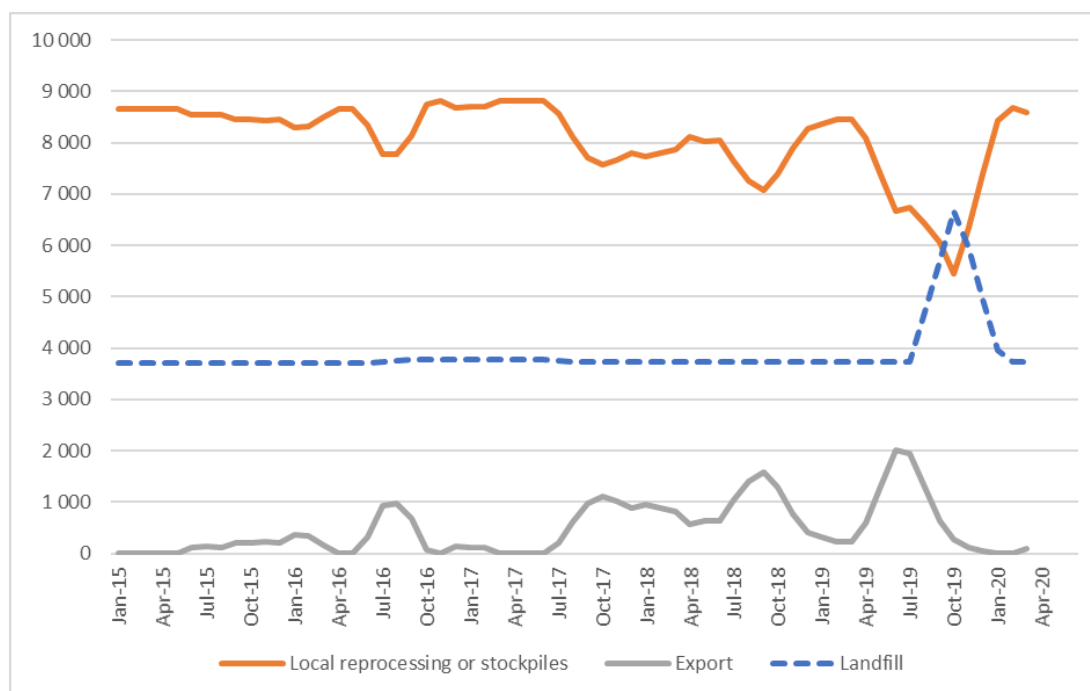
In its recently released policy Recycle Victoria, the Victorian Government announced the statewide introduction of a glass recycling bin from 2021. In addition, there has also been an announcement that a container deposit scheme will be developed and introduced, and this is also likely to result in significant quantities of uncontaminated glass suitable for use in new glass packaging.

The experience of other states and territories suggests that glass packaging returned through container deposit schemes is significantly cleaner and has a higher demand and value compared with glass from MRFs. This material still requires beneficiation for contaminant control, sizing and colour sorting, and at this stage is not all being returned to glass packaging. The demand for more recycled glass back into packaging also then needs to be driven by brandowners and O-I.

The major glass packaging producer and recycler, O-I, has announced that it is looking to sell its Australian and New Zealand operations. The current speculation is that Visy Packaging may become the purchaser.

Figure 2.2.1 provides data on movements in export and local destinations of kerbside collected glass since the beginning of 2015. Glass exports are generally low and sporadic.

Figure 2.2.1 – Destination of Victorian MRF outputs (tonnes/month) – Kerbside glass



Note 1: Historical total monthly MRF outputs have been approximated in Figure 2.2.1 to enable comparison with monthly ABS customs export data. The overall trends are the key aspect of the figure.

Note 2: The combined 'Local reprocessing or storage' estimate is indicative only, and these fates will be presented separately if this level of data becomes available. Landfill excludes disposal from storage and is an approximation based on annual waste to landfill rates.

Source: ABS (2020) and Envisage Works

## Prices, demand and supply

Gate fee rates for MRFs sending material for beneficiation can vary, based on quality and quantities. Gate fees of \$0 /tonne at the outgoing gate of the MRF (EXW MRF) to -\$30 /tonne are reported, if the glass is going to beneficiation. Prices are even lower if the glass is going into other applications (such as construction).

Delivered MRF sorted mixed glass destined for road base or asphalt production incurs a gate fee that is greater than the fee into beneficiation, but less than a landfill gate fee. On average it is expected to be around -\$80 /tonne (so a significant cost to the MRF operators).

There was a small amount of separated glass going directly from pubs and clubs to beneficiation, but this has ceased during the recent COVID-19 lockdown.

The cost of beneficiation for food grade is estimated at around \$150–\$200 /tonne but is dependent on the source and processing requirement of the incoming glass.

Following beneficiation O-I then receives the glass cullet from beneficiation plants in most major cities nationally, including Melbourne at its Spotswood facility. The price paid by O-I to these facilities has remained largely unchanged in recent years.

The reduced beneficiation capacity has restricted the amount of glass suitable for production.

Cullet use in packaging manufacture has therefore dropped and now makes up 31 per cent of the input to O-I glass manufacture in Victoria. Some glass cullet has been transferred to plants in NSW and SA to fulfill colour requirements in these states.

## Key end-markets and related specifications

Beyond taking used glass packaging back into packaging production, there are a range of other secondary markets that can be used, but these do not offer a high market price. These include the major market of glass into asphalt, road base material and sand for construction, and smaller markets for abrasives, and filter media.

## Export and interstate market review

Glass cullet is generally not exported due to its low value and significant weight relative to shipping costs. There has been little reported export of glass for recycling from Victoria in 2020 (only a few hundred tonnes). The ban on the export of unprocessed (i.e. not beneficiated) glass will come into force from July 2020.

## Market risks, opportunities and activities

The closure and transfer of ownership of SKM sorting facilities to Cleanaway has now resulted in the sorted packaging glass being sent to Alex Fraser for use as a sand substitute in asphalt.

The risks to glass recycling relate to the fact that there is significantly more glass in supply than there is beneficiation capacity. Other end-markets for the glass, such as the construction sector, are needed, even though this results in the glass being down-cycled into construction materials.

## 2.3 Kerbside recovered plastic packaging (~5 kt/month)

### Market developments this month

**Development 1 – Virgin resin prices for PET, PE and PP are low and will go lower.** The low prices for oil and gas, along with massive new virgin resin manufacturing capacity in the Middle East, Northeast Asia and North America across the 2017–2022 period, are resulting in downwards trending virgin resin prices, that are already at the lowest prices in many years. This reduces the competitiveness of recycled resin grades with virgin resin for the foreseeable future.

**Development 2 – Local processing capacity remains insufficient.** There has been some downturn in supply of sorted kerbside plastics to local reproducers due to the current circumstances, but collections still exceed local processing capacity. There continues to be a significant gap between strong brandowner demand and local reproducer capacity.

**Development 3 – In March the PACT Group announced the development of a large PET recycling plant in Albury in partnership with Cleanaway and Asahi.** The plant will be completed in late 2021 and have a capacity of 28,000 tonnes. With supply from Cleanaway kerbside sorting sites, and a commitment from Asahi to use the recycled material in their packaging, the development offers a model for similar plastic recycling plants with closed loop supply chains between manufacturers and recyclers.

**Development 4 – Installation of a new plastics optical sort facility at Campbellfield by Polytrade to sort kerbside rigid plastic packaging is due for completion May 2020.** This will add around 10,000 tonnes of sorting capacity for plastics into the system.

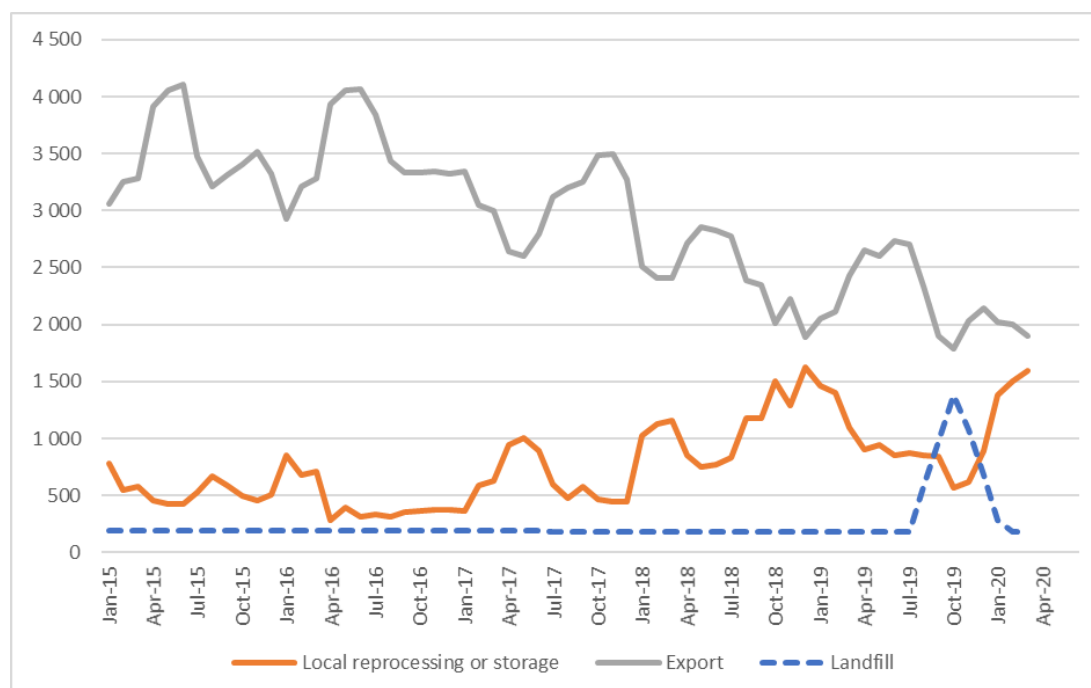
**Development 5 – Overseas markets will deteriorate further.** Post-consumer plastics import restrictions into south-east Asian countries, including Thailand, Indonesia, Vietnam and Malaysia are placing many reproducers in those countries under severe stress due to insufficient supply to the end of February. These countries are the main destinations of Victorian scrap plastic exports. The current circumstances have now increased this pressure even further and many business failures in these overseas companies appear inevitable.

### Material overview and market summary

Plastics collected through kerbside collections are generally sent to MRFs and sorted from commingled recycling into either a single mixed plastics grade (1–7 plastic-polymer mix), or more commonly three grades, which are PET, HDPE and the residual mixed plastics grade (a 3–7 plastic-polymer mix, but with some residual quantities of PET and HDPE still present).

Figure 2.3.1 provides data on the change in exports of kerbside recovered plastic packaging since the beginning of 2015. The trend in exports across the first quarter of 2020 has been downwards, and April/May export performance is anticipated to continue this trend. It is likely that reasonable quantities of baled mixed kerbside plastic packaging continue to be placed into storage by MRF operators.

Figure 2.3.1 – Destination of Victorian MRF outputs (tonnes/month) – Kerbside plastic packaging



Note 1: Historical total monthly MRF outputs have been approximated in the figure above to enable comparison with monthly ABS customs export data. The overall trends are the key aspect of the figure.

Note 2: The combined 'Local reprocessing or storage' estimate is indicative only, and these fates will be presented separately if this level of data becomes available. Landfill excludes disposal from storage and is an approximation based on annual waste to landfill rates.

Source: ABS (2020) and Envisage Works

Baled PET and HDPE packaging is processed and remanufactured locally, and also exported to a range of countries. The main overseas destinations in the first quarter of 2020 have been Malaysia (65%) and China (17%). Across the first half of 2019 Indonesia made up 47% of Victorian kerbside plastics exports, but exports to Indonesia across the last quarter of 2019 and first quarter of 2020 have been negligible.

### Prices, demand and supply

There continues to be reasonably strong local and export markets for clean PET bales that are collected and sorted to specification. Internationally reported traded spot prices fell from \$400 /tonne (EXW MRF) in June 2019 to around \$300 /tonne in December. However, prices appear to have held fairly steady at this lower level across October–April.

The price of recycled resin is linked to the price for virgin resin. PET resin prices have been experiencing increasing downward pressure over the first quarter of 2020. However, this has been offset by the deteriorating exchange rate. When the exchange rate improves it can be expected that virgin PET resin prices (in AUD) will go down, decreasing the competitiveness of recycled PET with virgin PET.

The situation has worsened significantly for HDPE over the first four months of 2020. Prices for washed and flaked/pelletised material have softened since December from around the \$600–\$650 /tonne level to \$450–\$500 /tonne by the end of April 2020.

HDPE virgin resin prices fell significantly across the second half of 2019, and further falls appear likely over the next few months, due to the combination of reduced demand due to the pandemic and new polyethylene capacity coming online globally. The new PE capacity that is scheduled for completion across the 2020–2023 period is massive and represents another 20% or more on top of existing capacity at the end of 2019. It is hard to overstate the significance of this new capacity and low oil/gas prices, and the potential negative implications for HDPE and LDPE recycling markets over the longer term.

The market for mixed plastic packaging bales continues to be very poor at \$0 /tonne or less, assuming it can be sold.

### Key end-markets and related specifications

Exported plastics packaging has specifications relating mostly to contamination levels. The positive sorting of PET and HDPE that is undertaken at MRFs allows the baled material to generally meet these specifications without major difficulty or manual sorting input.

Previously plastics packaging has been overwhelmingly exported to China, until the latest round of restrictions. Since September 2019 Malaysia has been the largest destination for Victoria kerbside plastics. For the 12 months prior to this Indonesia had been the major destination.

Across the first quarter of 2020 China is still the second largest destination of post-consumer plastics exported from Victoria, after Malaysia. China has been slowly receiving increasing quantities, off a very low base, since the middle of last year.

### Export and interstate market review

Plastic packaging exports from Australia compete in receiving countries with plastics from the US, Europe and many other countries. It is destined for wherever the demand requires material for production. Generally, demand and pricing will increase or decrease based on worldwide supply and demand conditions.

There are concerning reports that post-consumer plastics import restrictions into south-east Asian countries, including Thailand, Indonesia, Vietnam and Malaysia, are now placing processors in those countries under severe stress due to insufficient supply. The very large plastics reprocessing capacity that has relocated to these countries across 2018 and 2019 would be effectively starved of supply.

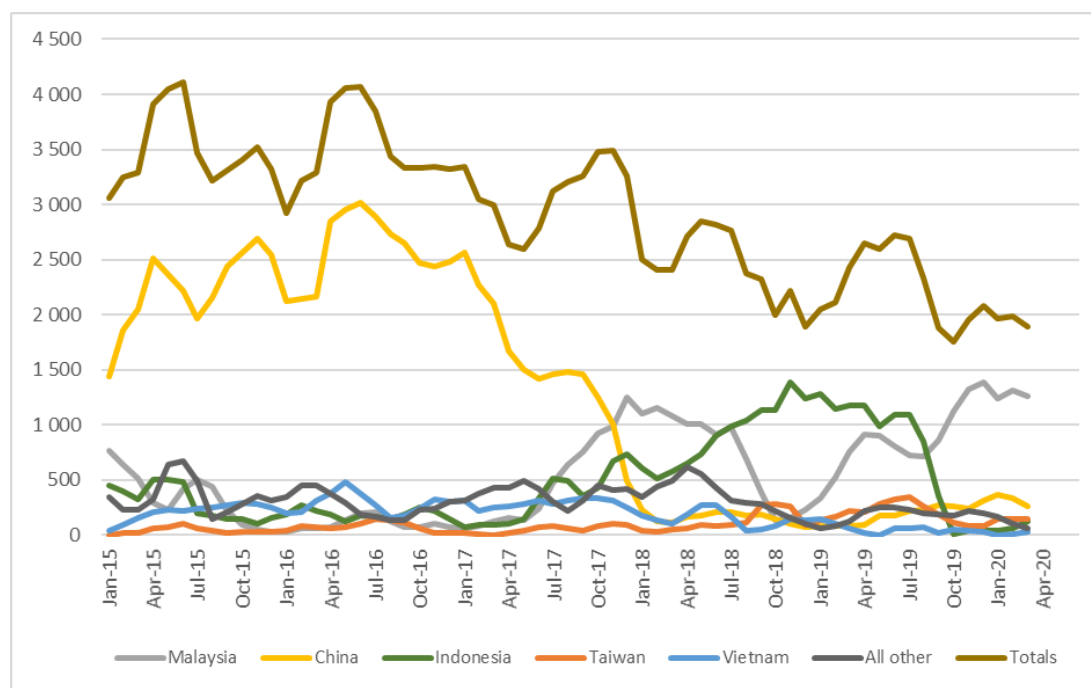
Post-consumer plastic imports into Malaysia appear to have been fairly steady or even growing across the first quarter of 2020. Imports into China appear to be growing, but only slowly.

The Chinese Government has foreshadowed a new standard on recycled plastic imports to take effect in the first half of 2020. The new standard may require that all recycled pellets in the same shipment must have consistent physical properties. However, the specific details are still unknown. This change will have a minimal impact of Victorian export markets as relatively little scrap plastics are exported to China at the current time. However, it does indicate that China is less likely to reopen its ports to anything other than high-quality recyclate at any time in the future.

Exports of kerbside recovered mixed plastic packaging have dropped dramatically over the past few years (see Table 2.3.2), and are continuing a mostly downwards trend into the first quarter of 2020.

The falls since the 2016–17 year were driven entirely by lost sales to China, with exports to Indonesia and Malaysia taking up some of this material. The saturation and restriction of imports into Indonesia has left Victoria highly exposed to Malaysian import conditions, albeit at a lower level than the historical level of exposure to China.

Figure 2.3.2 – Victorian recovered kerbside plastic packaging, export country (t/month)



Source: ABS (2020) and Envisage Works

Table 2.3.2 – Annual Victorian recovered kerbside plastics, to export country (tonnes/yr)

Country <sup>a</sup>	2015–16 (tonnes)	2016–17 (tonnes)	2017–18 (tonnes)	2018–19 (tonnes)	2019–20 <sup>b</sup> (tonnes)
Malaysia	1 900	1 500	11 300	6 800	10 000
China	29 600	27 200	8 200	1 600	2 500
Indonesia	2 100	2 000	7 200	13 800	2 600
Taiwan	700	700	800	2 500	1 500
Vietnam	3 600	3 100	3 000	1 000	300
All other	3 900	3 700	5 000	2 400	1 600
<b>Total</b>	<b>41 800</b>	<b>38 200</b>	<b>35 500</b>	<b>28 100</b>	<b>18 500</b>

Source: ABS (2020) and Envisage Works

a) Countries ranked by average of last three months of exports.

b) Partial year across July 2019 to March 2020.

Table 2.3.3 – Most recent monthly change in Victorian recovered plastics, to export country (tonnes/month)

Country	February 2020 (tonnes)	March 2020 (tonnes)	% change (%)
Malaysia	1 300	1 300	0%
China	300	300	0%
Indonesia	100	100	0%
Taiwan	100	100	0%
All other	100	100	0%
<b>Total</b>	<b>1 900</b>	<b>1 900</b>	<b>0%</b>

Source: ABS (2020) and Envisage Works

### Market risks, opportunities and activities

There continues to be significant and growing demand for high-quality PET and HDPE packaging recyclate for remanufacturing into many applications, included packaging, here in Australia. In addition, strong export markets exist for high-quality sorted and washed flake and pellets. However, a significant shortfall exists in suitable reprocessing capacity locally.

There is significant new capacity that has either started operating in the last year, or is reported to be coming online in the next 1–3 years. A summary of this capacity, that has a kerbside packaging focus, is provided in the following table. Note that the estimated capacity figures in this table are highly provisional. We will continue to update this list as information on new reprocessing facility commitments become public.

Table 2.3.3 – Major new Australian plastics reprocessing facilities proposed (kerbside packaging focussed)

Facility name	Location	Est. capacity (tonnes/yr)	Highest reprocessing level	Other comments
Advanced Circular Polymers (ACP)	Somerton VIC	20 000–70 000	Sorting and shredding/granulation	Non-food grade flake production
Coca-Cola Amatil / Veolia	Unknown	Unknown	Sorting, shredding/granulation and pelletising	Food grade rPET and rHDPE production
PACT Group / Cleanaway	Albury NSW	28 000	Sorting, shredding/granulation and pelletising	Food grade rPET and rHDPE production
PACT Group	Wacol QLD	7 000	New product manufacture	LDPE film processing
Martogg LCM	Dandenong VIC	23 000	Sorting, shredding/granulation and pelletising	Food grade rPET production
Recycled Plastics Australia	Kilburn SA	10 000–20 000	Sorting, shredding/granulation and pelletising	Non-food grade flake and pellet production
<b>Total</b>	<b>-</b>	<b>83 000–143 000</b>	<b>-</b>	<b>-</b>

Markets for mixed polymer and low value post-consumer plastic packaging continue to be under-developed or non-existent.

As strong markets exist for clean and sorted PET, HDPE, LDPE and PP, the use of these plastics in consumer packaging, without other polymer additives, would see more packaging sorted and sold at high prices.

## 2.4 Kerbside recovered metal packaging (~2 kt/month)

### Market developments this month

**Development 1 – Some stockpiling by MRF operators and scrap metal traders in Victoria.** India is not currently issuing import permits for tin-plate steel can bales. India is the main destination of this material from Victoria (and globally). This is causing some stockpiling by MRF operators and scrap metal traders here in Victoria. This is not yet a major issue. Aluminium beverage can bales are not impacted by these import restrictions, but are impacted by the container movement logistical issues previously outlined.

**Development 2 – Tin-plated steel packaging prices have fallen a little from January 2020 to the end of April 2020, with estimated typical spot prices falling from around \$120 /tonne (MRF EXW) to \$100 /tonne over the 3–4 month period.** Aluminium beverage can prices have softened by an estimated 10% over the same period.

### Material overview and market summary

Steel and aluminium cans, mostly recovered through kerbside recycling collections from households, account for only a small fraction of overall metals recovery from Victoria.

MRFs are well equipped to separate these materials from household collections into marketable grades of recyclate, which although small in volume (around 3–4 per cent of the average household recycling bin) represent a valuable source of revenue for MRFs.

Recovered steel packaging is considered a low-value form of steel post-consumer, but it still saleable into overseas markets, sometimes by blending it into mixed grade steel products (e.g. 'black iron'). It is not purchased by local smelter operators in any volume.

It is reported that India is not currently issuing import permits for tin-plate steel can bales. India is the main destination of this material from Victoria (and globally). This is causing some stockpiling by MRF operators and scrap metal traders here in Victoria, but has not yet had a significant impact on prices, as the MRF operators and scrap metal sector are accustomed to withholding supply for extended periods of time until prices are adequate. For this reason the Indian import restrictions are not yet a major issue.

However, this represents yet another cash flow issue for businesses, and as for other materials supply chain participants metal traders report much higher levels than normal of delayed payment.

Aluminium beverage can bales are not impacted by these import restrictions, but are impacted by the container movement logistical issues previously outlined.

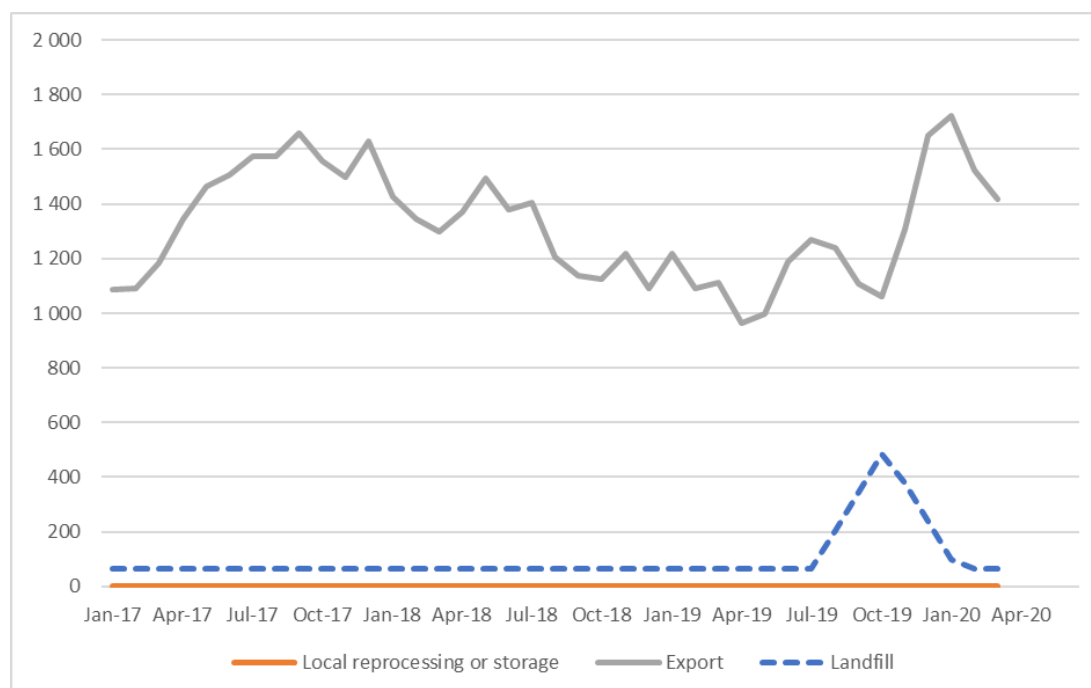
There is no longer any tin-plated steel sheet or aluminium can sheet produced in Australia, with all of it imported.

The baled steel and aluminium packaging is sent to a fairly wide range of countries, with the main destinations being India, South Korea, Thailand and Taiwan in the first quarter of 2020. Almost all recovered metal packaging is sold into export markets, with no Victorian tin-plated steel or aluminium packaging identified as being reprocessed in Australia.

Australia's post-consumer metal exports are not experiencing difficulties comparable to some other recycling streams in the wake of the Chinese National Sword restrictions. This is due in part to China not being a major destination for these materials prior to the National Sword import restrictions, and post-consumer metal packaging being only a very small part of post-consumer metal markets globally.

Figure 2.4.1 provides data on the change in exports of kerbside recovered metal packaging since the beginning of 2017. Exports have been trending somewhat downwards since the beginning of 2020, and April/May exports are anticipated to show a significant decrease when this data is released.

Figure 2.4.1 – Destination of Victorian MRF outputs (tonnes/month) – Metal packaging



Note 1: Historical total monthly MRF outputs have been approximated in the figure above to enable comparison with monthly ABS customs export data. The overall trends are the key aspect of the figure.

Note 2: The combined 'Local reprocessing or storage estimate is indicative only, and these fates will be presented separately if this level of data becomes available. Landfill excludes disposal from storage and is an approximation based on annual waste to landfill rates.

Source: ABS (2020) and Envisage Works

## Prices, demand and supply

There is now little steel or aluminium packaging post-consumer reprocessed in Australia. However, international markets for these commodities remain strong.

There is no significant distressed storage of steel or aluminium packaging. However, this could change over the next 2–3 months for steel cans should Indian ports remain closed.

Previously there have been no limits on quantity of steel or aluminium packaging into international markets. However, we currently have a taste of how that could change. The next 2–3 months will be important for scrap steel can markets globally.

Tin-plate steel packaging is not reprocessed in Australia, is low value, and there are reports of high levels of contamination. It is increasing risk of future import restrictions by receiving countries, particularly if mixed grade post-consumer steel imports (e.g. black steel grades) are restricted. It is worth noting that black steel is designated as an essential material by the Indian Government, and import restrictions are not likely.

The price of steel packaging is strongly linked to global steel pricing. The current price received for baled steel packaging is around \$100 /tonne (EXW MRF).

The price of shipped aluminium packaging is linked to virgin aluminium pricing. The current price received for baled aluminium beverage cans is approximately \$950–\$1050 (EXW MRF).

## Key end-markets and related specifications

Exported steel packaging has specifications relating to contamination levels and bale density. The sorting that is undertaken at MRFs allows the baled material to meet these specifications without major difficulty or manual sorting input. A similar situation exists for aluminium packaging.

Generally steel and aluminium packaging is recycled back into the respective post-consumer metal pools and go into durable applications such as vehicles, building materials and many other products.

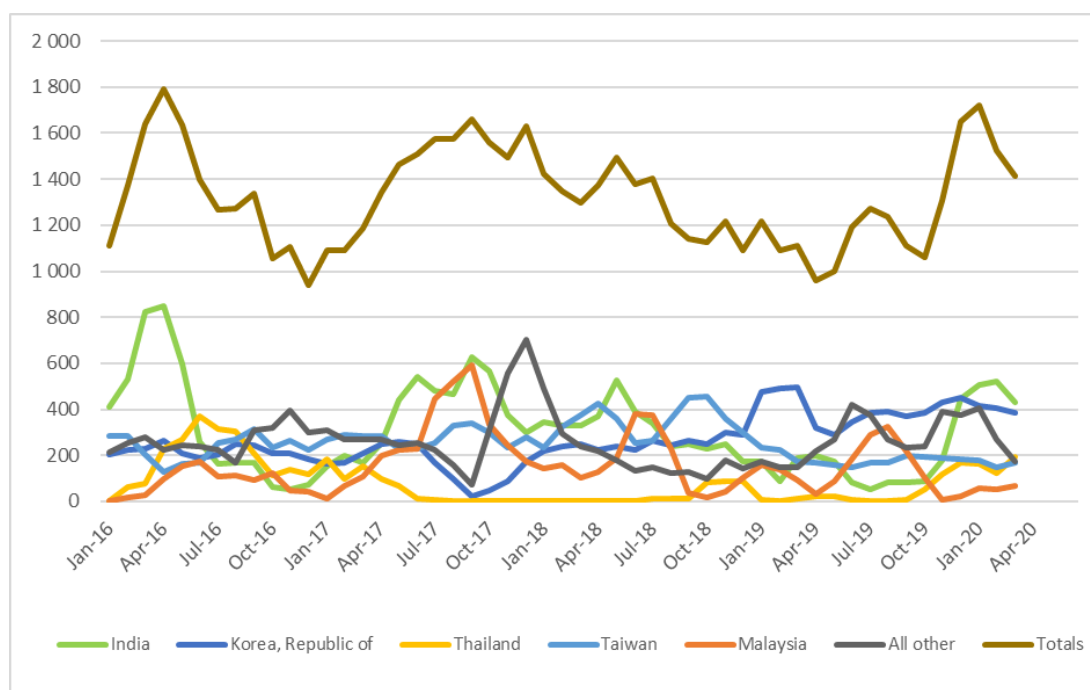
### Export and interstate market review

The exported steel and aluminium packaging are sold into large markets with most metal coming from non-packaging sources. The material flows from all countries and is destined for wherever the demand requires material for production. Unlike some other materials, there is no way of knowing the origin of the steel or aluminium in new product. Demand and pricing can increase or decrease based on worldwide supply and demand conditions.

If a large market such as India suffered a longer-term contraction in economic activity due to coronavirus (COVID-19) this could result in ongoing price reductions. The worldwide virgin steel and aluminium production capacities are also changing and a contraction or expansion in capacity will influence pricing.

Exports of kerbside recovered metal packaging have remained fairly steady over the last few years, but with a downward trend across 2018–19, and some recovery since, driven in the last 5–6 months up a general upswing in exports to India to the end of March. However, it is anticipated that the Indian exports will drop off sharply over April and May, and that this material is currently being stockpiled locally rather than exported to other countries.

Figure 2.4.2 – Victorian recovered kerbside metal packaging, to export country (tonnes/month)



Source: ABS (2020) and Envisage Works

Table 2.4.2 – Annual Victorian recovered kerbside metals, to export country (tonnes/yr)

Country <sup>a</sup>	2015–16 (tonnes)	2016–17 (tonnes)	2017–18 (tonnes)	2018–19 (tonnes)	2019–20 <sup>b</sup> (tonnes)
India	5 200	2 400	5 100	2 400	2 400
South Korea	2 600	2 600	2 000	4 000	3 600
Thailand	1 400	1 800	0	400	800
Taiwan	2 700	3 100	3 700	3 300	1 600
Malaysia	500	1 400	3 400	1 500	1 100
All other	5 500	3 300	3 600	2 200	2 700
<b>Total</b>	<b>17 900</b>	<b>14 600</b>	<b>17 800</b>	<b>13 800</b>	<b>12 200</b>

Source: ABS (2020) and Envisage Works

a) Countries ranked by average of last three months of exports.

b) Partial year across July 2019 to March 2020.

Table 2.4.3 – Most recent monthly change in Victorian recovered metals, to export country (tonnes/month)

Country	February 2020 (tonnes)	March 2020 (tonnes)	% change (%)
India	500	400	-20%
South Korea	400	400	0%
Thailand	100	200	100%
Taiwan	100	200	100%
Malaysia	100	100	0%
All other	300	200	-33%
<b>Total</b>	<b>1 500</b>	<b>1 500</b>	<b>0%</b>

Source: ABS (2020) and Envisage Works

### Market risks, opportunities and activities

The global steel and aluminium markets have both been able to consistently absorb metal packaging from kerbside systems, better than the local or global markets for any of the other packaging materials. This is primarily due to the lack of barriers in using MRF-sourced metal packaging into many steel and aluminium market outlets.

If there was a dramatic negative shift in supply/demand at a global level, this could lead to significant price reductions for baled steel or aluminium packaging. However, there is no reason to believe that this is currently a major risk. Although the Indian import restrictions require careful monitoring.

### 3. Special topic

Each bulletin examines a special topic area or two. These provide a deeper examination of specific issues of interest to a broad audience, while updating and building on the core information and time-series data that are integral to the bulletin each month.

Unsurprisingly, this bulletin takes a particular look at the issue of the day – coronavirus (COVID-19).

Please refer to the earlier bulletins for the numerous special topics explored in those editions.

## Recycling markets in a pandemic

### By IndustryEdge

Global recycled material markets have never experienced anything like the current crisis.

No, not the demand-side shock of the Chinese (and now broader) import quality prohibitions that continues to beset the market with hitherto unimagined challenges. Rather, the combined challenge of simultaneous demand and supply shocks wrought by the novel coronavirus, COVID-19.

Later in this article we will outline what happens when demand and supply shocks coincide in a market, for now it is enough to say that chaos – unpredictability – reigns, because we have no historical data of a similar event upon which to rely.

However, meaningful data is starting to become available, for particular recycled materials.

### Recovered paper provides an example of the chaos

When already moderately suppressed Chinese paper mills entered the Lunar New Year holiday period in late January 2020, demand for recovered fibre – especially the major supply-line, Old Corrugated Cartons (OCC) – slowed markedly, as expected. When the Chinese Government announced the closure of many sectors and industrial activities, demand slowed further and was extremely soft through all of February.

In February, Australia's shipments of recovered paper to China totalled just 11,831 tonnes, their lowest monthly total in more than a decade. However, total monthly exports reached 103,986 tonnes, (almost exactly the same as the prior month) as Indonesia received a record 44,687 tonnes and Malaysia a record 15,766 tonnes, and other countries snapped up the available supply.

Exporters report that March was very different because Chinese industrial manufacturing recommenced, inventories were being drawn down and supply lines needed to be replenished. April will also be stronger, but May is anticipated to be softer (more on that in a moment).

Late March and April have reportedly seen higher export prices for OCC in particular, because Australian supplies are in demand, replacing shipments from Europe where production and shipments have been curtailed. The depreciation of the Australian dollar has also supported Australian supplies into Asia.

The supply side shock from Europe and to a lesser extent North America will be short-lived. By May, it is anticipated that shipments will return to some level of normalcy from the Northern Hemisphere. Exporters anticipate prices returning to February levels, but that is dependent upon demand from Indonesia – our nearest Asian neighbour – being sustained. That country is really struggling with the pandemic, and its industrial production is likely to suffer a shock, resulting in demand for recovered materials falling.

Adding further to the reverberating shockwaves of uncertainty, collectors report that Australia's patterns of supply of recovered paper are also being disrupted. A much larger volume of OCC and other industrial grades of paper and paperboard, for example, are being collected from kerbsides because of household deliveries. It is commingled, often contaminated and therefore less likely to be export viable, and with prices still languishing, not as likely to be collected at all.

The same OCC volumes popping up in kerbside collections are no longer being collected through the cleaner, more organised and altogether easier to handle Commercial and Industrial stream.

The complexities are many, and they continue to mount.

### **Demand and supply impacted simultaneously: not at all like the GFC**

When the global financial crisis struck a decade ago, the shock was on the demand side. Businesses and more specifically, households, put their spending cues in the rack, saving more and reducing debt rapidly. Unlike the GFC, the pandemic is both a demand and supply shock.

Health related restrictions on human movement at the international, national, local and even family level reduce demand enormously. What household is not spending less than it was two months ago?

But supply – the manufacture of goods and the provision of services – is also impacted by the same controls on human activity.

The compounding effect is that the waves of demand and supply shock impact and conflict with one another, deepening the crisis.

The combination of demand and supply shocks occurring simultaneously impacts all materials, and at all levels of economies, but not always in the manner we anticipate. So, when it comes to recycled materials, because of for instance, home deliveries, reportedly higher alcohol consumption and the need to take your coffee home rather than drink it in the office, we can expect kerbside collection volumes to increase, for most materials.

That means more material in the kerbside commingled streams, and less in the lower contamination and more controlled single-stream sources like major offices, retail outlets, workplaces and other institutions.

The result is that we can expect more recycled material being collected in the exact form (commingled) that makes it more likely to be contaminated and less likely to be acceptable for export.

### **Shipping container dilemma underscores the multiple shock wave effect**

Where export is possible, one of the market factors faced by some exporters (especially of larger volumes of material), is access to shipping containers. Container freight rates are cheap right now, but prices are reportedly increasing. Traditionally they are very good for exporting back to China and other parts of South East Asia where containers are required in huge volumes.

However, supply shocks out of China as the pandemic commenced saw many containers not be shipped. Since China went back to work and stepped up its production, it was then constrained by softer demand from countries that were themselves in lockdown. In mid-April, the China Ports & Harbours Association reported that the eight major ports in China all experienced reduced container movements, with some export focussed ports down as much as 20%.

Some shipping companies have cancelled sailings on major routes (16.5% of the routes from China's eight major ports had no sailings at all in the March Quarter), which compounds the woes.

In combination, the shipping data means simply there are less containers available, and the reverberations of the waves of simultaneous demand and supply shocks means the disruptions will take many months to flatten out entirely. That will only realistically occur when the pandemic ends, although Chinese port authorities report their expectation that most port-side container stockpiles will be cleared before mid-May.

### Where to from here?

We are charting uncertain times, so the possible scenarios are endless, including for recovered and recycled materials. It is true that we do not know what happens next, but there are some clues.

We know our resources are scarce and at the most fundamental level, they are therefore more valuable than we often treat them (at least at the post-consumer level). This is one of the dilemmas with which our society has been grappling. One possibility is that arising from some new version of thinking global and acting local, we will collectively enhance our respect for those resources and work harder to make more of them. Well maybe.

Alternatively, if the demand shock is confirmed in some new form of longer-term frugality demand for resources could step down on a permanent basis. That frugality could increase the desire to use, re-use, upcycle and recycle resources. But it could just as easily reduce pressure on virgin resources and thereby reduce the value of all resources, virgin or recovered. We don't really know which it will be.

Equally, we need to consider the psychological impact of the pandemic, especially at the global and trade level. The trade prohibitions on recycled materials could well be doubled down. The principle is very likely to be 'if you consume it, you reuse and recycle it'. That seems a bit more likely.

Regardless of how we look at the current situation, the scenarios seem to point to greater care being taken of resources. At a practical level this means that the arguments continue to mount for better product design, increased source separation to ensure the quality of the recovered resources, radically increased local reprocessing capacity for high quality recycled materials, and massive expansion of end-markets for recycled materials.

## 4. Supporting material

Please refer to the document *Resource Recovery Market Bulletin (glossary and references)* for a detailed glossary of the terms used throughout the bulletins, and a listing of the references and other sources drawn on in the development of the bulletins.

This document is available for download at:

<https://www.sustainability.vic.gov.au/Business/Investment-facilitation/Recovered-resources-market-bulletin>.