

Exports of Australian waste and recovered materials in October 2020

19 February 2020, Joe Pickin and Sally Donovan

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Blue Environment is commissioned by the Department of Agriculture, Water and the Environment to produce, analyse and report on monthly exports of waste and recovered materials¹. The original data is provided by the Australian Bureau of Statistics² (ABS), and comprises monthly data and updates to previously reported data³. This ABS data is then transformed to account for issues such as trade codes containing a mixture of wastes and non-wastes, and making it consistent with national waste data methods. On a tonnage basis nearly all these exports are materials recovered from waste streams for recycling⁴ or energy recovery, but a small portion is hazardous waste sent for treatment. Monthly data is highly variable, and trends may be best perceived through the annual reports produced in this series.

Summary

In October 2020, Australia exported about 424,000 tonnes of waste and recovered materials with a value of \$276 million⁵. This represents an increase of 31% in tonnage and 41% in value compared to the previous month. The exports included 351,000 tonnes (83%) within the current scope of national waste reporting ('core waste plus ash').

About 103,000 tonnes were exported in October in codes that could be affected by Australia's export bans. This is about 24% of the total exports of waste and recovered materials.

No obvious effects of the COVID-19 pandemic are apparent in the data.

Comparison by destination

The top 10 recipients of Australian waste and recovered materials between July 2019 and October 2020 were Indonesia, India, Bangladesh, Vietnam, China (including Hong Kong and Macau), Malaysia, Thailand, Taiwan, Republic of Korea and Pakistan. In October 2020, 75% by weight of Australia's exported waste and recovered materials were sent to these countries.

Table 1 (overleaf) compares exports of waste and recovered materials to these top 10 countries in September and October 2020 and includes each country's 2019-20 monthly average. October 2020 exports to Vietnam were more than double the 2019-20 monthly average, mainly due to a surge in metal exports, particularly ferrous scrap. Exports to China were higher than the monthly average, as they have been for the past few months, and comprised mainly paper and cardboard. China reasserted its intention to ban all imports of solid waste starting in January 2021. Part of this announcement indicated that any import allowances issued in 2020 would be honoured up to an expiration date, so it is possible that exporters are rushing to utilise their import allowances before the ban comes into force.

Metals were the main export to Bangladesh (100%), Pakistan (92%) and Taiwan (95%). Metals also made up the majority of exports received by Vietnam (82%), and India (79%), the remainder mainly consisting of paper and cardboard (11% and 15% respectively). Paper and cardboard was the main export to China (85%) and Thailand (69%), with the remainder mainly metals (12% and 29% respectively). Exports to Indonesia were split between metals (44%) and paper and cardboard (49%). Exports to the Republic of Korea were mixed including metals (41%), organics (27%), paper and cardboard (16%) and hazardous (15%). Exports to

¹ The export codes mapped to waste and recovered materials in 2020-21 differ slightly from those in 2019-20. Details are given in the accompanying workbook (under 'Reflists'). The historical data presented here has been updated.

² Data in these summaries is originally entered by exporters or their agents. It cannot be guaranteed that exporters use the correct codes or values for their exports, so this data should be used with caution.

³ Data may be revised for up to six months after initial publication as customs declarations are amended by individual traders. Due to these revisions, there may be discrepancies between this and preceding reports.

⁴ Some of these recovered materials contain a proportion of contamination (or 'off-spec' content) that needs to be extracted before the material can be used.

⁵ Dollar values refer to Australian dollars. Historical values are inflated based on the annualised consumer price index.

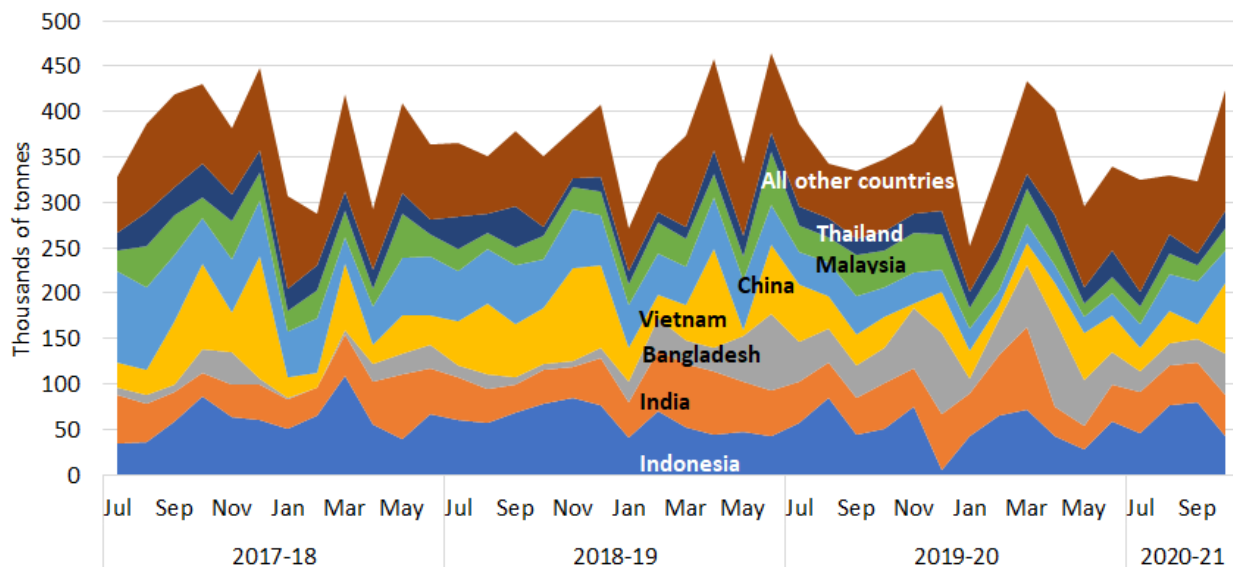
Malaysia were also mixed including metals (42%), plastics (21%), tyres (17%) and paper and cardboard (15%).

Table 1 Comparison of month-to-month exports of waste and recovered materials by destination

Export destination (ranked by tonnes since July 2019)	Oct-20		Sep-20		2019-20 monthly avg tonnes	Oct-20	Sep-20	2019-20 monthly avg \$ mil
	tonnes	% of total	tonnes	% change		\$ mil	\$ mil	
1 Indonesia	42,000	10%	81,000	-47%	52,000	\$12.9	\$27.4	-53%
2 India	46,000	11%	44,000	6%	48,000	\$34.6	\$30.0	15%
3 Bangladesh	44,000	10%	26,000	73%	52,000	\$15.9	\$8.3	91%
4 Vietnam	79,000	19%	15,000	409%	35,000	\$31.8	\$5.3	497%
5 China	36,000	8%	48,000	-25%	27,000	\$23.8	\$21.3	11%
6 Malaysia	24,000	6%	17,000	39%	32,000	\$15.2	\$11.4	33%
7 Thailand	18,000	4%	13,000	43%	22,000	\$6.5	\$6.1	7%
8 Taiwan	10,000	2%	9,000	5%	17,000	\$5.8	\$4.1	42%
9 Korea, Republic of	9,000	2%	8,000	13%	15,000	\$19.0	\$30.3	-37%
10 Pakistan	9,000	2%	15,000	-37%	9,100	\$5.0	\$7.1	-30%
Top 10 total	318,000	75%	276,000	15%	309,000	\$170.5	\$151.4	13%
Monthly total	424,000	-	323,000	31%	354,000	\$275.8	\$195.8	41%

Figure 1 presents the trend in tonnes of exports of waste and recovered materials from Australia by destination between July 2017 and October 2020. Monthly exports are volatile and no overall trend is evident over the 40-month timeframe. Slight declining trends are apparent in exports to Indonesia and Vietnam, while those to Pakistan and Bangladesh have risen. In all these countries the largest share of exports is metals, and it may be that exports are shifting from other countries to Pakistan and Bangladesh, which have not implemented or announced any import restrictions on waste metals. Exports to Malaysia have fallen in recent months. Malaysia receives a larger share of wastes in the 'other' category, for which export patterns are erratic. Paper and cardboard exports to Malaysia have also been below the 2019-20 monthly average over the past few months, but they are similar to the totals for the same months last year.

Figure 1 Monthly exports of waste and recovered materials from Australia by destination, ranked by total quantity received, July 2019 to October 2020



The reported value of exports for October 2020 was \$276 million, up from \$196 million in September and greater than the 2019-20 monthly average of \$238 million. The increase in value was slightly higher than the increase in tonnes.

Comparison by material

Table 2 compares October 2020 export tonnages and values with September and with the 2019-20 monthly average, by material type. Around 81% falls within the current scope of national waste reporting (core waste plus ash).

Table 2 Comparison of export tonnage and value by material

	Oct-20		Sep-20		2019-20 monthly avg	Oct-20		Sep-20		2019-20 monthly avg
	tonnes	% of total	tonnes	% change	tonnes	\$ mil	% of total	\$ mil	% change	\$ mil
Glass	0	0%	100	-100%	2,200	\$0.00	<1%	\$0.03	-100%	\$0.11
Hazardous (excl. tyres)	3,000	1%	3,500	-15%	3,500	\$43.7	16%	\$25.4	72%	\$37.1
Metals	236,000	56%	198,000	19%	212,000	\$176	64%	\$135	31%	\$163
Paper & cardboard	85,000	20%	86,000	-1%	88,000	\$14.7	5%	\$15.2	-3%	\$14.2
Plastics	10,000	2%	7,800	34%	9,400	\$3.37	1%	\$2.27	48%	\$2.59
Textiles	8,100	2%	5,400	51%	7,800	\$6.19	2%	\$4.39	41%	\$6.30
Tyres	8,100	2%	6,600	23%	7,100	\$1.55	<1%	\$1.33	16%	\$1.47
Other	74,000	17%	15,000	385%	24,000	\$30.2	11%	\$12.3	145%	\$12.9
Total	424,000	-	323,000	31%	354,000	\$276	-	\$196	41%	\$238

Comparison with the previous month –

- **Glass** waste exports were zero in October and minimal in September, falling from an average of 2,200 tonnes per month in 2019-20. Industry appears to have been preparing for the ban on glass waste exports (which came into effect at the start of 2021).
- Exports of **hazardous waste** (excluding tyres) decreased from 3,500 to 3,000 tonnes between September and October 2020. The largest components were lead waste and scrap derived from used lead acid batteries (74%), and lead-containing slag, ash and residues (20%). Copper containing slag, ash and residues accounted for less than 3% of the tonnes but 89% of the value of hazardous waste due to anomalously high reported value in an export flow from Townsville⁶.
- Monthly **metal** exports increased from 198,000 to 236,000 tonnes and remain the largest portion of exported waste and recovered materials at 56%. The total value was \$176 million, or 64% of the total value of waste exports. The main recipients were Vietnam (28%), Bangladesh (19%), India (15%) and Saudi Arabia (10%).
- **Paper and cardboard** exports in September and October 2020 were similar to the 2019-20 monthly average. Exports went mainly to China (36%), Indonesia (25%), and Thailand (15%). Unbleached kraft comprised 60% and unsorted scrap 39%. Despite being 20% of tonnage, the value, \$14.7 million, represented only 5% of the total.
- Exports of waste **plastics** increased from 7,800 to 10,000 tonnes, exceeding the 2019-20 average. The largest recipients were Malaysia (49%), China (10%) and Indonesia (9%). Exported scrap plastics comprised mixed plastics (58%) and ethylenes (41%). Average values for scrap plastics codes rose, and total value was \$3.4 million, 48% more than September 2020.
- Exports of waste **tyres** increased from 6,600 to 8,100 tonnes. The main recipients were Malaysia (50%) and India (31%). The increase in value was proportionally lower than the increase in tonnes as the proportion of low value waste scrap rose from 61% to 79%. Industry figures for exports of waste tyres suggests the coverage in the ABS data is incomplete, probably due to miscoding by exporters.
- Exports of waste **textiles** increased from 5,400 to 8,100 tonnes between September and October 2020. The main receiving countries were United Arab Emirates (65%) and Malaysia (16%). Worn clothing and other worn textile articles accounted for more than 99% of textile waste.
- Exports in the waste category **other** showed the most significant increase from 15,000 tonnes in September to 74,000 tonnes in October. The value increased from \$12.3 to \$30.2 million. The greatest

⁶ The reported value of this copper slag and ash waste exceeded \$500/kg. The value of pure copper is under \$10/kg.

tonnage rise was of sawdust due to two shipments to Japan, one from Bundaberg (27,500 tonnes) and the other from Albany (23,005 tonnes). Some other organic materials also increased significantly.

Comparison with the 2019-20 monthly average – October 2020 export tonnages were 20% higher than last year's monthly average, and the value was 16% higher. Glass, paper and cardboard, and hazardous waste tonnages were below the 2019-20 average, while the other five categories were higher. Exports in 'other' were about three times the average due to larger quantities of organics.

Figure 2 presents the monthly trend in exports of waste from Australia in tonnes by material type between July 2017 and October 2020. Historically volatile scrap metal exports have been relatively stable since July 2020. Exports of scrap paper and cardboard are relatively stable from month to month but show a consistent decline. Monthly scrap tyre exports fell steadily over 2019-20 to reach their lowest level in April but have since increased slightly. Exports of recovered plastics fell in early 2017-18, recovered to peak in early 2019, then fell to a low in August. They have been consistent so far in 2020.

Figure 3 presents monthly trends in the average reported value per tonne of key waste exports between July 2017 and October 2020. Over this timeframe reported values for:

- metals, while variable, appear to have been on a declining trajectory (at least since early 2018)
- paper and cardboard have been more stable, but also on a declining trend
- glass exports have averaged about \$50/t but in recent months have been highly unstable as quantities fell
- plastics fell sharply during 2018 due to the China restrictions, but have recovered as exports of low-grade mixed materials fell while higher value streams remained consistent
- textile values have been consistently between \$740 and \$1000/t but towards the low end of that range in 2020-21.

Figure 2 Monthly exports of waste and recovered materials from Australia by material type, July 2017 to October 2020

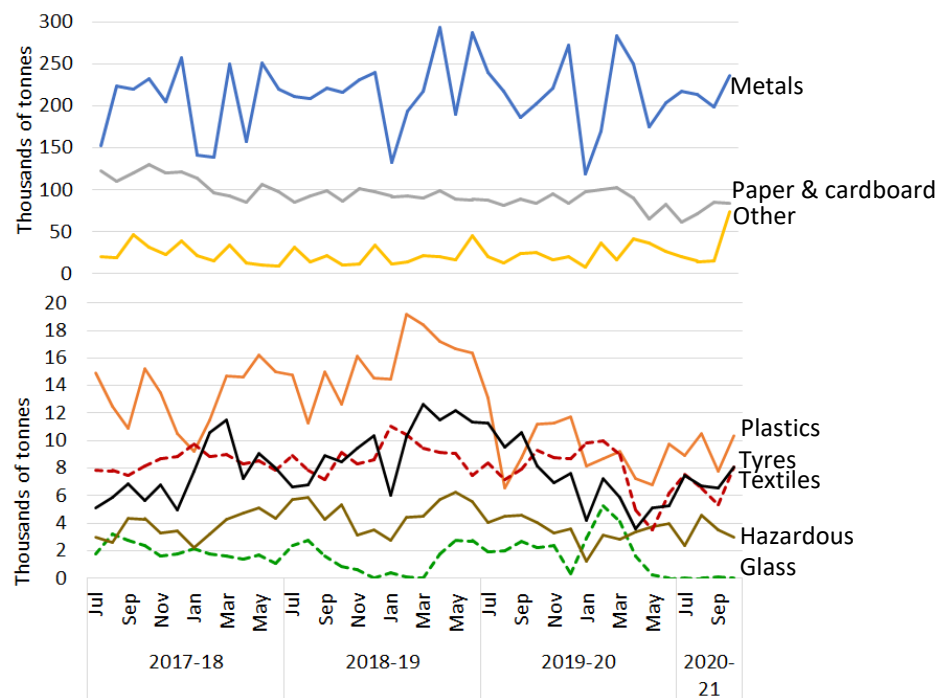
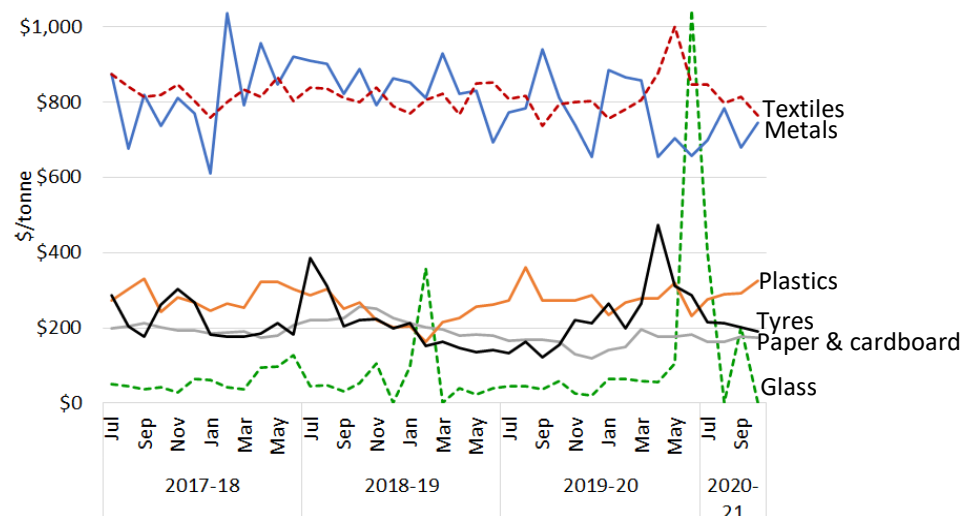


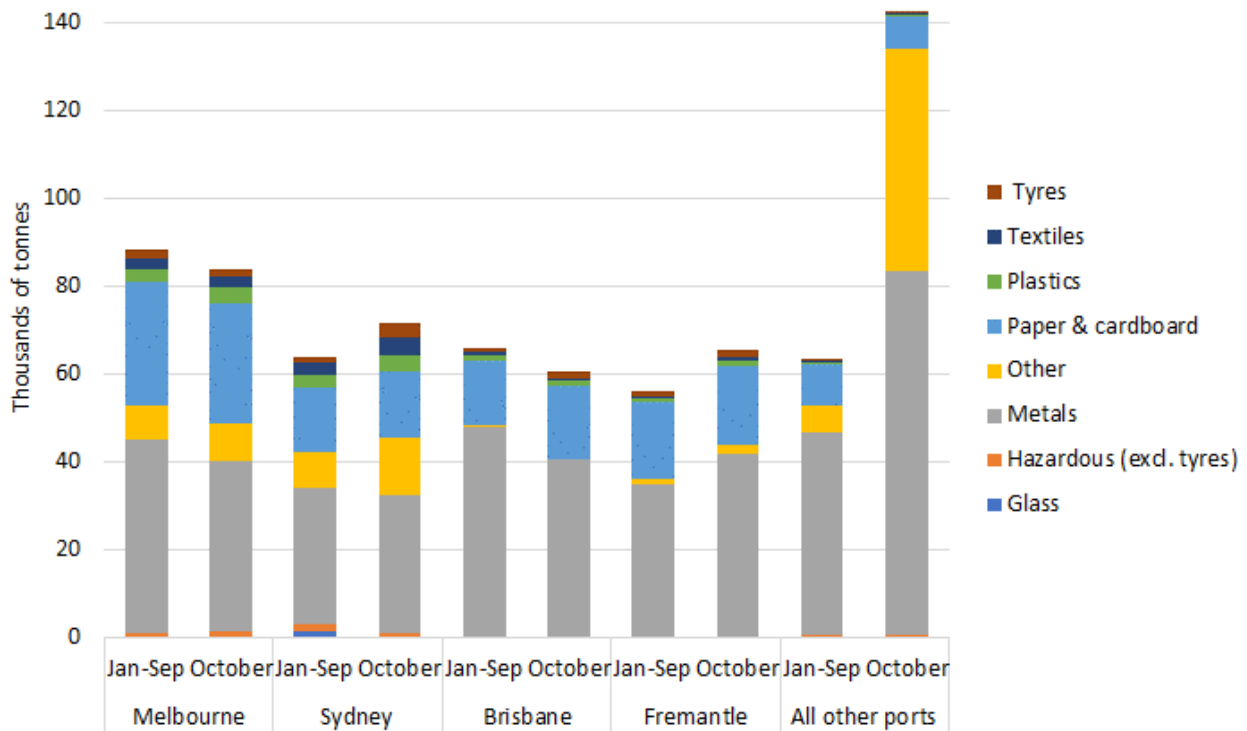
Figure 3 Comparison of unit values by material (in \$/t), July 2017 to October 2020



Port of loading and state of origin

About 75% of Australia's waste and recovered materials is exported from four of Australia's 22 ports: Melbourne (25%); Sydney (18%); Brisbane (17%); and Fremantle (16%). Figure 4 shows the average monthly tonnes for January to September and the October tonnes by material group for each of the top four ports, and all other ports. Earlier data were unavailable. Exports by material are fairly evenly spread across the ports and the October results are similar to the average, except in 'all other ports'. These soared in October due to large shipments of sawdust from Bundaberg and Albany to Japan and untypically high exports of ferrous scrap to Vietnam from Mackay and Darwin.

Figure 4 Tonnes of exports by trade group from port of loading



Most waste originating in a jurisdiction is exported from a port in that jurisdiction. The exception is Tasmania, which exports only one third of its waste from Launceston and the rest mainly via Melbourne.

Australian waste export ban

A March 2020 meeting of the then Council of Australian Governments agreed to a timetable for implementing bans on exporting waste glass, paper, plastics, and tyres not processed into a value-added material. The relevant materials, dates and main export codes are shown in Table 3.

In October 2020, about 103,000 tonnes of waste and recovered materials were exported within the codes listed above, up a little from 100,000 in September. This represents about 24% of the total quantity of waste and recovered materials exported for the month, and 29% of all exports within the 'core waste + ash' current scope of the *National Waste Report 2020*.

Table 3 *Material types facing export bans*

Material	Ban date	AHECC ⁷ code	AHECC description	Oct 20 exports in this code (rounded tonnes)	Estimated % of tonnes to be banned ⁸
Glass	Jan 2021	70010000	Cullet and other waste and scrap of glass; glass in the mass	0	Ban effected from 1/1/21
Paper and cardboard	Jul 2024	47071000	Recovered (waste and scrap), unbleached, kraft paper or paperboard or corrugated paper or paperboard	51,000	47% ⁹
		47072000	Recovered (waste and scrap) paper or paperboard, made mainly of bleached chemical pulp, not coloured in the mass	300	
		47073000	Recovered (waste and scrap) paper or paperboard, made mainly of mechanical pulp (e.g. newspapers, journals)	540	
		47079000	Waste and scrap paper or paperboard (incl. unsorted waste & scrap) (excl. unbleached kraft or corrugated (470710); that made mainly from bleached chemical pulp, not coloured in the mass; or made mainly of mechanical pulp)	33,000	
Plastics	Jul 2022	39151000	Waste, parings and scrap, of polymers of ethylene	4,200	100% ¹⁰
		39152000	Waste, parings and scrap, of polymers of styrene	20	
		39153000	Waste, parings and scrap, of polymers of vinyl chloride	90	
	Jul 2021	39159092	Waste, parings and scrap, of plastics (excl. those of polymers of ethylene, styrene or vinyl chloride)	6,000	83% ¹¹
Whole tyres	Dec 2021	40040000	Waste, parings and scrap of rubber (excl. of hard rubber) and powders and granules obtained therefrom	6,400	44% ¹²
		40122000	Used pneumatic rubber tyres, whether or not subject to recutting or regrooving	1,500	100% ¹²
		40129000	Solid or cushion rubber tyres, rubber tyre treads (incl. Interchangeable tyre treads) and rubber tyre flaps	220	6% ¹²

Restrictions on waste imports – latest news

The Republic of Korea recently announced its intention to phase out imports of 10 kinds of industrial waste by 2030. It plans to ban waste plastics, mixed wastepaper, and waste fibres in 2022, while coal ash and waste tyres will be banned in 2023¹³. Pakistan published an updated Import Policy Order 2020 on 25 September 2020, which includes a ban on imports of re-treaded tyres and used pneumatic tyres. Some other waste materials are also subject to restrictions but none appear to impact Australia's export trade with Pakistan.

Some legislation came into force in January 2021 but had not been introduced in October 2020. This includes: Thailand's ban on importing plastic and e- waste; China's ban on imports of all solid waste; and amendments to the Basel Convention¹⁴ that aim to enhance control of transboundary movements of plastic waste.

⁷ Australian Harmonized Export Commodity Classification

⁸ Based on the 2018-19 characteristics of these materials.

⁹ Comprises the proportion of material in AHECC code 47079000, but significant miscoding is apparent in the data.

¹⁰ Assumes no material was sorted and processed to the extent that will be required for future export.

¹¹ Excludes fuels.

¹² 2018-19 ABS data on tyres exports were much lower than industry-reported export quantities.

¹³ Yonhap News Agency (2021) [S. Korea to phase out industrial waste imports](#)

¹⁴ Formally known as the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal*.

Restrictions on waste imports – overview

The current status of import restrictions to Australia's top 10 waste and recovered materials destinations is summarised in Table 4, while Table 5 provides details of the import restriction policies, their dates and amount of waste potentially impacted by the bans.

Table 4 Summary of import restrictions by material and top 10 country

	Glass	Haz. waste (excl. tyres)	Metals	Paper & cardboard	Plastics	Tyres	Textiles
Indonesia	Restricted	Restricted	Restricted	Restricted	Restricted	Restricted	
India					Restricted	Considering	
Bangladesh							
Vietnam			Restricted	Restricted	Restricted		
China			Restricted	Restricted	Restricted		
Malaysia					Restricted		
Thailand					Restricted		
Taiwan				Restricted	Restricted		
Republic of Korea				Restricted	Restricted	Announced	
Pakistan						Restricted	

Key

Restricted	Restrictions are in place
Announced	Restrictions announced but not yet implemented
Considering	Restrictions are under consideration

Table 5 Status of waste import restrictions

Country	Scope of restrictions	Announced & implemented	Associated exports (tonnes)			
			Types	2019-20	Oct 20	Impact and uncertainties
Indonesia	On 27 May 2020 the Indonesian Government published a decree on the implementation of import of non-hazardous and toxic material waste as raw material industry ¹⁵ . This limits contamination of imported scrap plastic and paper to 2% and announces the formation of a task force to develop a road map accelerating the availability of domestic raw materials. This will include a staged reduction of import quotas. On 15 October 2020, they further announced exporters will need to complete a registration process, described as cumbersome and lengthy, to continue exporting to Indonesia, to come into force on 18 October, however this was pushed back to January 2021 ¹⁶ .	Ann.: Apr-19 Imp.: Nov-19	Plastics, Paper and cardboard, metals, glass, hazardous waste, tyres, other.	627,000 (52,000 per month)	42,000	Imports reduced from 61,000 per month in 2018-19 to 52,000 in 2019-20

¹⁵ Minister of Trade, Minister of Environment and Forestry, Minister of Trade Industry and Head of State Policy, Republic of Indonesia (May 2020), [Implementation of import of non hazardous and toxic material waste as raw material industry](#)

¹⁶ EU-WID Pulp and paper (16 October 2020) [Indonesia postpones introduction of exporter registration to 1 January 2021](#)

Country	Scope of restrictions	Announced & implemented	Associated exports (tonnes) Types	2019-20		Impact and uncertainties
				2019-20	Oct 20	
India	Import of scrap plastics was banned from August 2019 ¹⁷ covering areas previously exempt under the 2016 ban such as special economic zones (SEZ) and export-oriented units (EOU) ¹⁸ . The ban excludes electrical/electronic assemblies or components that are defective, which can be imported within a year of export. India set a contamination limit of 1% for recovered paper years ago. It now intends to enforce this by randomly inspecting 5 mixed paper bales per container ¹⁹ .	Ann.: Mar-19 Imp.: Mar-19, Aug-19 for importers currently exempt under SEZs and EOUs.	Plastics	60 (5 per month)	0	Plastics imports reduced from 60 to 5 tonnes per month from 2018-19 to 2019-20. No plastics imports so far in 2020-21
Vietnam	On 24 September 2020 Vietnam published a new document ²⁰ , 'Promulgation of the list of waste permitted for import as production materials', overriding previous relevant regulations. Unsorted scrap paper imports and granulated slag from the manufacture of iron or steel are scheduled to be banned by the end of 2021. This builds on the 2018 announcement of tighter controls over imports of plastic, paper and metals. Accepted only if importers prove their shipment meets specified environmental standards and there is capacity to process the materials. Under new national standard QCVN 32: 2019/BTNMT, import of e-waste plastics (e.g. cases of TVs and computers) would be forbidden ²¹ . Scrap metal waste needs to be 99% metal to be allowed in ²² .	Ann. in Sep-20. Mixed metal waste restricted from Oct 2018.	Plastic, paper, metals	420,300 (35,000 per month)	74,000	Imports reduced from 61,000 to 35,000 tonnes per month between 2018-19 and 2019-20.
China	China initiated waste import restrictions known as 'National sword policy' in April 2018 ²³ . Restrictions have continued to increase and from 1 January 2021 a ban on the import of all solid waste is set to be implemented ²⁴ . The definition of solid waste may differ between Australia and China and certain waste-derived resources may continue to be imported as feedstocks.	Ann.: Jul & Nov-17, Apr-18, Jul-19, Dec-19, Jan-20 Imp.: Jan 2021	All solid wastes	328,000 (27,300 per month)	36,000	Imports gradually reduced from over 100,000 tonnes per month in 2016-17 to 27,000 in 2018-19.
Bangladesh	No apparent waste import restrictions. Since July 2019, received mainly metals, hazardous wastes and a small amount of glass from Australia.				0	None

¹⁷ Business Today, (24 June 2019) [India bans import of plastic waste from August this year to curb pollution](#)

¹⁸ Ministry of Environment, Forest and Climate Change (2019) [Amendment in Hazardous Waste \(Management & Transboundary Movement Rules, 2016\)](#)

¹⁹ Waste Dive, (15 January 2020), [India to enforce 1% contamination rate on paper imports, conduct random inspections](#)

²⁰ Prime Minister of Vietnam (24 September 2020) [Promulgation of the list of waste permitted for import as production materials](#). Unofficial translation

²¹ Ministry of Natural Resources and Environment of the Socialist Republic of Vietnam (2018) [Vietnam to ban imports of plastic from used electronics](#)

²² S&P Global Platts (2019) [Vietnam's Jan scrap imports plunge amid stricter government rules](#)

²³ Ministry of Commerce, State Development & Reform Commission (incl. former State Development Planning Commission), General Administration of Customs (2018) *Announcement No. 6 [2018] of the Ministry of Ecology and Environment, the Ministry of Commerce, the National Development and Reform Commission and the General Administration of Customs*

²⁴ Ministry of Ecology and Environment, People's Republic of China (25 November 2020) [MEE Announcement No. 53 2020](#) (unofficial translation by Institute of Scrap Recycling Industries).

Country	Scope of restrictions	Announced & implemented	Associated exports (tonnes) Types	2019-20		Impact and uncertainties
				2019-20	Oct 20	
Malaysia	During 2019, Malaysia cracked down on illegal plastics reprocessors, and customs officials began refusing waste imports unless they were from companies with approved permits ²⁵ .	Jul-18.	Plastic, metals	49,000 (4,100 per month)	5,100	No impact apparent.
Thailand	Thailand has announced its intention to implement a ban on the import of all plastic wastes by 2022 ²⁶ . However, this is still under debate as research into whether locally generated plastic waste will satisfy feedstock requirements of the 157 plastic recycling facilities. A ban on 428 types of electronics waste has also been announced ²⁷ .	Ann. Aug-18, plastic imp. Aug-18, e-waste <2 yrs.	Plastic	9,500 (800 per month)	240	Plastics imports reduced from 900 to 800 tonnes per month between 2018-19 and 2019-20
Korea, Republic of	On 6 January 2021, Ministry of Environment announced bans or restriction on their top 10 waste import materials ²⁸ . Total imports to be reduced 35% by 2022 and 65% by 2025. Plastic, mixed waste paper and waste fibre bans will commence in 2022, while coal ash and tyre bans will commence in 2023. Corrugated cardboard, dust and sludge will be subject to restrictions in 2023 ²⁹ . Previously announced (on 30 June 2020) a ban on imports of PET, PE, PP and PS with immediate effect. ³⁰	Ann.: Feb-20	Paper and cardboard Plastic	13,000 (1,100 per month)	1,500	Imports of both products have decreased significantly over 2020
Taiwan	Import of plastic waste is banned. Exceptions are made to licensed local firms that import plastic waste originating from their own overseas production processes or are a single material, but not from original production processes ³¹ . Paper imports restricted to only deinked paper, kraft paper, corrugated paper or cardboard that is not bleached. Import of waste newspapers and magazines banned.	Ann.: Aug-18 Imp.: Oct-18	Plastic, paper	14,200 (1,200 per month)	510	Imports reduced from 1,500 to 1,200 per month between 2018-19 and 2019-20.
Pakistan	On 25 September 2020 the Pakistan Government Ministry of Commerce published Import Policy Order 2020, which came into force immediately ³² . This bans the import of re-treaded tyres and used pneumatic tyres.	Sep-20	Tyres	0	0	No impact apparent, only pertains to certain codes of tyre waste, which have only been exported to Pakistan twice throughout the data period.

²⁵ The Sun Daily (2nd February 2021) [Waste not want not: Malaysia moves to become a leader in tackling plastic waste](#)

²⁶ REB market intelligence (25 January 2021) [Thailand considering plastic import ban from 1st January 2022](#)

²⁷ Saengmanee (2020) [The year nature bounced back](#)

²⁸ Business Korea (7 January 2021) [Waste import ban roadmaps to come out soon](#)

²⁹ Inquirer.net (10 January 2021) [S. Korea to phase out industrial waste imports](#)

³⁰ The Korea Times (2020) [Plastic waste imports banned in Korea amid mounting local trash](#)

³¹ Taipei Times (2018) [New waste plastic, paper import rules to take effect](#)

³² Pakistan Government Ministry of Commerce (2020) [Import Policy Order 2020](#)