Exports of Australian waste-derived products and wastes in May 2020

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Blue Environment is commissioned by the Department of Agriculture, Water and the Environment to analyse and report on monthly exports of waste-derived products (e.g. recycled plastic chip) and materials that are still wastes. The data is provided by the Australian Bureau of Statistics[[1]](#footnote-1), and comprises monthly data covering the previous six months, including any updates to previously reported data. On a tonnage basis nearly all these exports are materials recovered from waste streams for recycling or energy recovery[[2]](#footnote-2), but a small portion is hazardous waste sent for treatment.

Summary

In May 2020, Australia exported about 312,000 tonnes of waste-derived products and wastes with a value of $198 million[[3]](#footnote-3). This represents a decrease of 22% in tonnage and 21% in value compared to the previous month. The exported quantity of tyres increased 44% to 5,200 tonnes from 3,600 tonnes in April. Plastic waste exports also grew modestly, while exports of all other categories declined.

About 89,000 tonnes were exported in May in codes that could be affected by the COAG export bans. This is 28% of the total exports of waste-derived products and waste.

With two months of substantial decline, we may be seeing effects of the COVID-19 pandemic.

Comparison by destination

The top 10 recipients of Australian waste-derived products and wastes between July 2018 and May 2020 were Indonesia, India, Vietnam, China (including Hong Kong and Macau), Bangladesh, Malaysia, Thailand, the Republic of Korea, Taiwan and Pakistan. In May 2020, 85% by weight of Australia’s exported waste-derived products and wastes were sent to these countries.

Table 1 (overleaf) compares exports of waste-derived products and wastes to these top 10 countries in April and May 2020 and includes each country’s 2018-19 monthly average. Exports to Vietnam and Taiwan increased (by about 11,500 and 8,900 tonnes respectively) while those to the other top 10 countries fell. Compared with the 2018-19 monthly average, May 2020 exports to Bangladesh, Taiwan and Pakistan were higher and those to the other seven countries were lower.

May 2020 exports of waste-derived products and wastes to Bangladesh and Taiwan were dominated by scrap metals (100% and 97% respectively). Metals also made up the majority of exports received by Vietnam (81%), Pakistan (87%) and the Republic of Korea (59%). The remainder to Republic of Korea was mainly hazardous waste (20%), while paper and cardboard was the next largest export to Pakistan (12%) and Vietnam (18%). Exports to Indonesia, India, China and Thailand were split mostly between paper and cardboard (77%, 47%, 47% and 57% respectively) and metals (20%, 45%, 43% and 41%). Exports to Malaysia were more varied, with 44% metals, 33% paper and cardboard and 14% plastic.

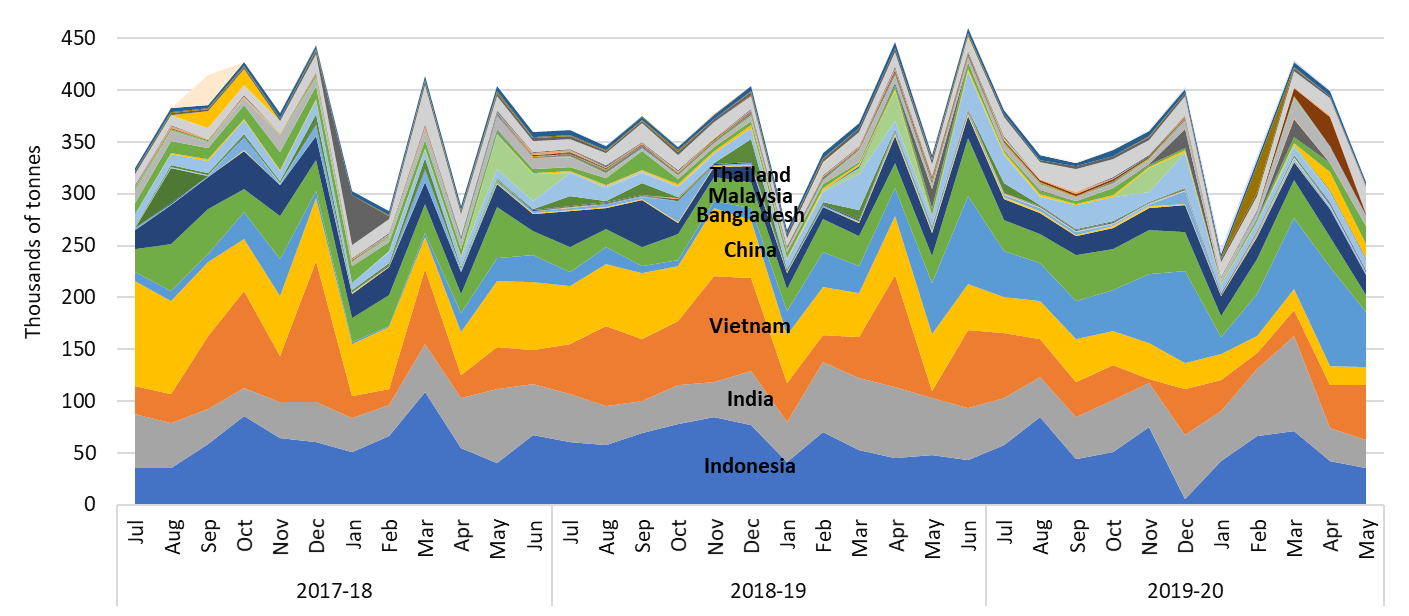
With two months of substantial decline, we may be seeing effects of the COVID-19 pandemic.

Table 1 Comparison of month-to-month exports of waste-derived products and wastes by destination



Figure 1 presents the monthly trend in tonnes of exports of waste-derived products and waste from Australia by destination between July 2017 and May 2020. Exports to Indonesia dropped to a low of 5,600 tonnes in December 2019, but have since climbed back to mid-2019 levels. Exports to India continued to fall from their three-year high of 91,000 tonnes in March, dropping to 27,000 tonnes in May 2020, their lowest level since October 2017. Exports to Vietnam continued to increase (to 53,000 tonnes) after falling to 15,000 tonnes in February 2020, but remain well below the six-figure levels seen in some months during 2018. Exports to China have been steady so far in 2020, remaining at 18,000 tonnes this month. Exports to Bangladesh increased steadily from January to April but fell sharply this month to 53,000 tonnes. No clear trend is apparent in the overall quantity of waste exports over the 35-month timeframe.

Figure Monthly exports of waste-derived products and waste from Australia by destination, ranked by total quantity received, July 2018 to May 2020



The reported value of exports for May 2020 was $199 million, decreasing from $250 million in April and below the 2018-19 monthly average of $259 million. The fall in value was proportionally similar to the decline in tonnes.

Comparison by material

Table 2 compares May 2020 export tonnages and values with April and with the 2018-19 monthly average, by material type.

Table 2 Comparison of export tonnage and value by material

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  | |  |  | **2018-19 monthly avg** | |  | |  | |  | **2018-19 monthly avg** | |
|  | **May-20** | | | | **Apr-20** | | **May-20** | | | **Apr-20** | |
|  | **tonnes** | **% of total** | | **tonnes** | | **% change** | | **tonnes** | **$ mil** | **% of total** | | **$ mil** | **% change** | | **$ mil** |
| Glass | 300 | 0% | | 1,600 | | -84% | | 1,300 | $0.03 | <1% | | $0.08 | -59% | | $0.06 |
| Paper and cardboard | 76,000 | 24% | | 90,000 | | -15% | | 93,000 | $13.9 | 7% | | $16.7 | -17% | | $19.5 |
| Plastics | 7,300 | 2% | | 7,200 | | 1% | | 16,000 | $2.3 | 1% | | $2.1 | 11% | | $3.6 |
| Tyres | 5,200 | 2% | | 3,600 | | 44% | | 10,000 | $1.6 | <1% | | $1.7 | -5% | | $1.8 |
| Metals | 181,000 | 58% | | 249,000 | | -27% | | 220,000 | $128 | 64% | | $163 | -22% | | $180.3 |
| Hazardous (excl. tyres) | 5,200 | 2% | | 5,200 | | -1% | | 5,600 | $29.6 | 15% | | $42.4 | -30% | | $33.2 |
| Other | 37,000 | 12% | | 43,000 | | -13% | | 24,000 | $23.2 | 12% | | $24.0 | -3% | | $20.3 |
| **Total** | **312,000** | **-** | | **400,000** | | **-22%** | | **369,000** | **$198.5** | **-** | | **$249.8** | **-21%** | | **$258.8** |

*Comparison with the previous month –*

* **Glass** exports fell from 1,600 tonnes in April to just 300 tonnes. Exports were to Malaysia (92%) and New Zealand (8%) only.
* **Paper and cardboard** exports decreased from 90,000 to 76,000 tonnes. Exports went mainly to Indonesia (36%), India (17%), Thailand (14%), Vietnam (12%) and China (11%). Unbleached kraft comprised 50% and unsorted scrap 47%. While paper and cardboard accounted for 24% of the tonnages of waste exports, their value of $13.9 million represented only 7% of the total.
* Exports of waste **plastics** increased very slightly to 7,300 tonnes. The largest recipients were Malaysia (32%), China (16%), Indonesia (13%) and Latvia (11%). Exported scrap plastics comprised mixed plastics (57%) and ethylenes (43%). They were valued at $2.3 million, 11% more than April 2020.
* Exports of waste **tyres** increased 44% to 5,200 tonnes. The main recipients were India (33%), Malaysia (23%), U.S. (17%) and the Republic of Korea (17%). Despite higher tonnages, the reported value of waste tyres fell slightly due to reduced quantities of costlier materials and increases in rubber scrap.
* Monthly **metal** exports declined from 249,000 to 181,000 tonnes, but remained the largest portion of exported waste-derived products and waste at 58%. The total value was $128 million, or 64% of the total value of waste exports. The main recipients were Bangladesh (29%), Vietnam (24%) and Taiwan (13%).
* Exports of **hazardous waste** (excluding tyres) remained steady at 5,200 tonnes between April and May 2020. The largest components were lead waste and scrap (58%), and lead containing slag, ash and residues (18%) followed by slag from the manufacture of iron and steel (13%). Copper containing slag, ash and residues accounted for 1% of the tonnes, but 71% of the value of hazardous waste. The reported value was anomalously high at over $500/kg (the value of pure copper is under $10/kg). Accordingly, while accounting for only 2% of total tonnes, hazardous waste represented 15% of the reported value at $29.6 million.
* Exports in the **other wastes** category reduced from 43,000 tonnes in April to 37,000 tonnes in May 2020, with a corresponding decrease in value. The largest sub-category was organics.

*Comparison with the 2018-19 monthly average –* May 2020 exports in the ‘other’ waste category were higher than the 2018-19 monthly average, all other categories were lower. This was reflected in the overall waste exports being lower than the monthly average. The reported value for the month was similarly lower than the monthly average.

|  |  |
| --- | --- |
| Figure 2 presents the monthly trend in exports of waste from Australia in tonnes by material type between July 2017 and May 2020. Scrap metal exports remain volatile. Exports of scrap paper and cardboard now appear to be in a long-term gradual decline. Monthly scrap tyre exports declined steadily over 2019-20 to reach their lowest level in the monthly data set in April, but recovered slightly in May. Exports of recovered plastics fell in early 2017-18, recovered to peak in early 2019, then fell to a low in August. They remain well below the 2018-19 monthly average.  Figure 3 presents monthly trends in the average reported value per tonne of key waste exports between July 2017 and May 2020. Over this timeframe reported values for:   * metals have varied widely and fell in April to their lowest value since January 2018 * paper and cardboard have been fairly stable, but declined in late 2019 then recovered in early 2020, standing at $183/tonne in May 2020 * glass dropped in late 2019, increased in early 2020, and recovered to $133/tonne in May * plastics reached $319/tonne, exceeding their average of $263/tonne after dipping in early 2019. | Figure Monthly exports of waste-derived products and wastes from Australia by material type, July 2017 – May 2020 |
| Figure Comparison of unit values by material (in $/t), July 2017 – May 2020 |

COAG waste export ban

A March 2020 meeting of the 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.

Table Material types facing export bans

| Material | Ban date | AHECC code | AHECC description | May-20 exports in this code (rounded tonnes) | | Estimated % of tonnes to be banned[[4]](#footnote-4) |
| --- | --- | --- | --- | --- | --- | --- |
| Glass | Jan 2021 | 70010000 | Cullet and other waste and scrap of glass; glass in the mass | | 260 | 100% [[5]](#footnote-5) |
| Paper and cardboard | Jul 2024 | 47071000 | Recovered (waste and scrap), unbleached, kraft paper or paperboard or corrugated paper or paperboard | | 38,000 | 47% [[6]](#footnote-6) |
| 47072000 | Recovered (waste and scrap) paper or paperboard, made mainly of bleached chemical pulp, not coloured in the mass | | 150 |
| 47073000 | Recovered (waste and scrap) paper or paperboard, made mainly of mechanical pulp (e.g. newspapers, journals and similar) | | 2,500 |
| 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) | | 36,000 |
| Plastics | Jul 2022 | 39151000 | Waste, parings and scrap, of polymers of ethylene | | 3,100 | 100% [[7]](#footnote-7) |
| 39152000 | Waste, parings and scrap, of polymers of styrene | | 20 |
| 39153000 | Waste, parings and scrap, of polymers of vinyl chloride | | 20 |
| Jul 2021 | 39159092 | Waste, parings and scrap, of plastics (excl. those of polymers of ethylene, styrene or vinyl chloride) | | 4,100 | 83% |
| Whole tyres | Dec 2021 | 40040000 | Waste, parings and scrap of rubber (excl. of hard rubber) and powders and granules obtained therefrom | | 2,800 | 44% [[8]](#footnote-8) |
| 40122000 | Used pneumatic rubber tyres, whether or not subject to recutting or regrooving | | 1,700 | 96% 8 |
| 40129000 | Solid or cushion rubber tyres, rubber tyre treads (incl. Interchangeable tyre treads) and rubber tyre flaps | | 600 | 6% 8 |

In May 2020, about 89,000 tonnes of waste-derived products and wastes were exported within the codes listed above, down from 113,000 in April. This represents about 28% of the total quantity of waste-derived products and waste exported for the month.

The current status of waste import restrictions

Following China’s lead, various Asian countries have flagged or implemented restrictions on the import of waste-derived products and wastes. These are described in Table 4 for the top 10 export countries in the same order as in Table 1. The information presented has been compiled based on publicly available sources, sometimes translated from languages other than English.

Table Status of waste import restrictions

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Country | Scope of restrictions | Announced & implemented | Associated exports (tonnes) | | | Impact and uncertainties |
| **Types** | **2018-19** | **May 20** |
| Indonesia | On 27 May 2020 Indonesia published a decree setting a 2% contamination limit for imports of plastic and paper waste[[9]](#footnote-9). It also announced a task force to develop a road map over the next 6 months to accelerate the availability of domestic raw materials for paper and plastic industry, including a staged reduction of import quotas. A temporary moratorium on all waste scrap imports commenced 23 November 2019 as the new Ministerial Regulation No. 84/2019 on the *Provisions on the import of non-hazardous and non-toxic waste for industrial purposes* is implemented[[10]](#footnote-10). Transhipments are banned. Only direct shipments from exporters that have obtained a permit (subject to occasional verification) and have inspected containers prior to shipment allowed. Scrap imports to be restricted to arrive at eight ports only. Illegally imported plastic waste to be returned back to exporters[[11]](#footnote-11). Reportedly rejected eight containers of ‘contaminated’ paper and plastic material in July 2019. In September 2019, it announced it would send 100 containers of contaminated material (particularly plastics) back to Australia, but to date only a small number have been returned[[12]](#footnote-12). Determined in February 2020 to ease the rules on metal scrap imports due to mill supply shortages[[13]](#footnote-13). | Ann.: Apr-19  Imp.: Nov-19 | Plastics, paper and cardboard, metals, glass, hazardous waste, tyres, other. | 725,700  (60,500 per  month) | 35,000 | Impact uncertain. |
| India | Import of scrap plastics banned from August 2019[[14]](#footnote-14). Also covers areas previously exempt under the 2016 ban such as special economic zones (SEZ) and export-oriented units (EOU)[[15]](#footnote-15). Excludes electrical/electronic assemblies or components that are defective which can be imported within a year of export. A six-month extension has been granted to three SEZs which allows plastic scrap to be imported until May 31 2020[[16]](#footnote-16). 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[[17]](#footnote-17).  India’s Central Pollution Control Board has been reviewing the pyrolysis industry and has ordered the closure of 270 plants that were not compliant with environmental regulations[[18]](#footnote-18). It is expected this will lead to a subsequent restriction on the import of waste tyres in the near future[[19]](#footnote-19). | Ann.: Mar-19  Imp.: Mar-19, Aug-19 for importers currently exempt under SEZs and EOUs. | Plastics, tyres | 52,500  (4,300 per month) | 1,700 | Impact uncertain. |
| Vietnam | 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[[20]](#footnote-20). No new licences issued for waste imports34. Plastic scrap imports to be banned by 2025[[21]](#footnote-21). Under new national standard QCVN 32: 2019/BTNMT, import of e-waste plastics (e.g. cases of TVs and computers) would be forbidden[[22]](#footnote-22). From 22 February 2019, all imports through road and railway border gates banned[[23]](#footnote-23). Import of mixed metal waste (containing any plastic, paper, other non-metallic metals) now understood to be restricted. Composition of metal waste needs to be 99% metal to be allowed in[[24]](#footnote-24). | Ann. in Aug-18 apparently implemented.  Mixed metal waste restricted from Oct 2018. | Plastics, paper and cardboard, metals | 732,600  (61,100 per month) | 53,000 | Has apparently affected imports of scrap plastic and metal from Australia.  Environmental reference standards are unavailable in English. |
| China | Declared restrictions and then, in April 2018, a ban on 32 types of waste-derived products[[25]](#footnote-25). From 1 July 2019, import restrictions were placed on eight solid waste codes pertaining to metals[[26]](#footnote-26). High quality scrap metals may be exempt from the ban: the Chinese Government is expected to shortly release custom codes clarifying metals that can be imported.[[27]](#footnote-27) There are calls to make all scrap metals exempt from the ban, as Chinese metal reprocessors struggle to find local materials.[[28]](#footnote-28) In the meantime, China continues to issue permits for imports of waste fibre and will allow 4.5 million tonnes to be imported this year. Quotas are also still being issued for metals [[29]](#footnote-29) [[30]](#footnote-30). China was reported to have enshrined in law its intention to stop all imports of waste with the aim of full implementation by the end of 2020[[31]](#footnote-31). More recent reports suggest a full ban during 2021[[32]](#footnote-32). | Ann.: Jul & Nov-17, Apr-18, Jul-19, Dec-19, Jan-20  Imp.: Jan & Mar-18, Dec-18, Dec-19 | Plastics, paper and cardboard, metals, other | 643,000  (53,600 per month) | 18,000 | Impact evident (2016-17 exports averaged 105,300/month and averaged 62,000/month in 2017-18). |
| Bangladesh | No apparent waste import restrictions. Received only metals and hazardous wastes from Australia during this financial year, which are not subject to export bans. |  |  |  | 0 | None |
| Malaysia | Import permits revoked from 114 factories that process imported plastic waste[[33]](#footnote-33),[[34]](#footnote-34). Import of non-recyclable plastic waste to be banned by 2021[[35]](#footnote-35). Contaminated, mislabelled or illegally imported plastic waste loads to be sent back to source[[36]](#footnote-36) [[37]](#footnote-37). Malaysia has continued returning contaminated containers of plastic waste to countries of origin with 150 returned and another 110 to be sent back by midyear. Enforcement at ports has improved and over 200 illegal plastic recycling facilities closed down in a bid to crackdown on illegal waste imports[[38]](#footnote-38). | Jul-18. | Plastics | 55,200  (4,600 per month) | 2,400 | No impact apparent. |
| Thailand | Revoked a broad plastic scrap import allowance, meaning plastic waste and scrap is banned from import by 2021[[39]](#footnote-39),[[40]](#footnote-40),[[41]](#footnote-41). Looking to ban e‑waste imports within 2 years34. In January 2020, a new subcommittee was set up to ensure the proposed bans can be achieved, and will not be prevented by loopholes[[42]](#footnote-42). | Ann. Aug-18, plastic imp. Aug-18, e-waste <2 yrs. | Plastics | 11,200  (900 per month) | 370 | No impact apparent Announcement available in Thai only. |
| Korea, Republic of | Announced on 17 February 2020 that it plans to reduce wastepaper imports. On 30 June 2020 announced a ban on imports of PET, PE, PP and PS with immediate effect.[[43]](#footnote-43) | Ann.: Feb-20 | Paper,  plastic bottles | 13,200  (1,100 per month) | 190 |  |
| 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[[44]](#footnote-44). 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 | Plastics, paper and cardboard | 17,700  (1,500 per month) | 810 | No impact apparent. |
| Pakistan | No import bans apparent[[45]](#footnote-45). Received mainly metals from Australia, which are not subject to export bans. |  |  |  | 0 | No impact apparent |

1. Data in these summaries is sourced from the Australian Bureau of Statistics and 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. 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. [↑](#footnote-ref-1)
2. 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. [↑](#footnote-ref-2)
3. Dollar values refer to Australian dollars. [↑](#footnote-ref-3)
4. Based on the 2018-19 characteristics of these materials. [↑](#footnote-ref-4)
5. It is believed that most or all of this product is derived from municipal recycling collections. [↑](#footnote-ref-5)
6. Comprises the proportion of material in AHECC code 47079000. However, significant miscoding is apparent in the data. [↑](#footnote-ref-6)
7. Assumes no material was sorted and processed to the extent that will be required for future export. [↑](#footnote-ref-7)
8. 2018-19 Australian Border Force data on tyres exports differed from the equivalent ABS data, and neither were consistent with industry-reported export quantities. [↑](#footnote-ref-8)
9. 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](https://images.magnetmail.net/images/clients/ISRIID/attach/ENIndonesiaGovtJointDecreeonRPimportsEN.pdf) [↑](#footnote-ref-9)
10. Argus (21 November 2019), [Indonesia suspends scrap imports amid new policy](https://www.argusmedia.com/en/news/2020587-indonesia-suspends-scrap-imports-amid-new-policy) [↑](#footnote-ref-10)
11. VOA news (2019) [Indonesia vows to send back illegal plastic waste](https://www.voanews.com/east-asia/indonesia-vows-send-back-illegal-plastic-waste) [↑](#footnote-ref-11)
12. Inside Indonesia (2020) [Buried under the weight of the recycling crisis](https://www.insideindonesia.org/buried-under-the-weight-of-indonesia-s-recycling-crisis) [↑](#footnote-ref-12)
13. Indonesia will ease rules on scrap metal imports, <https://www.wastetodaymagazine.com/article/indonesia-will-ease-rules-on-import-of-scrap-metal/> [↑](#footnote-ref-13)
14. Business Today, (24 June 2019) [India bans import of plastic waste from August this year to curb pollution](https://www.businesstoday.in/current/policy/india-bans-import-of-plastic-waste-from-august-this-year-to-curb-pollution/story/358778.html) [↑](#footnote-ref-14)
15. Ministry of Environment, Forest and Climate Change (2019)[Amendment in Hazardous Waste (Management & Transboundary Movement Rules, 2016)](http://pib.nic.in/PressReleseDetail.aspx?PRID=1567682) [↑](#footnote-ref-15)
16. Business Standard, (2 December 2019) [Govt grants six month extension to plastic scrap imports in three SEZs](https://www.business-standard.com/article/economy-policy/govt-grants-six-month-extension-to-plastic-scrap-imports-in-three-sezs-119112900554_1.html) [↑](#footnote-ref-16)
17. Waste Dive, (15 January 2020), [India to enforce 1% contamination rate on paper imports, conduct random inspections](https://www.wastedive.com/news/india-enforce-contamination-rate-inspections-paper-imports/570427/) [↑](#footnote-ref-17)
18. India legal, (6 January 2020), [NGT calls for review of CPCB’s report on pyrolysis units](https://www.indialegallive.com/national-green-tribunal/ngt-calls-for-review-of-cpcbs-report-on-pyrolysis-units-81315). [↑](#footnote-ref-18)
19. Tyre and Rubber recycling, (22 September 2019), [Near total ban on waste tyre imports imminent in India](https://www.tyreandrubberrecycling.com/latest-news/posts/2019/september/indian-ban-imminent/) [↑](#footnote-ref-19)
20. Vietnam Briefing (2018) [Vietnam to Restrict Surging Scrap Imports](http://www.vietnam-briefing.com/news/vietnam-to-restrict-surging-scrap-imports.html/) [↑](#footnote-ref-20)
21. VN Express International (2019) *Vietnam to end plastic scrap imports from 2025* [↑](#footnote-ref-21)
22. Ministry of Natural Resources and Environment of the Socialist Republic of Vietnam (2018) [Vietnam to ban imports of plastic from used electronics](http://www9.monre.gov.vn/wps/portal/news/!ut/p/c5/dclJDoIwFADQE5n_RYawbJAZFWgh2A0hJJpCw6AVlNPrBcxbPuDwMzSLuDdKjEMjoQJu1o5PAt1KEP2SmEgozS6hFWnoI1yBW38_1oFBhXpNOxxfCZ3ijS5v1uLDrljebZl2VlkgJl54M5tzPeafmzSignihK4-OduoIKrv09mva9lxU0phZvxaHUHVuELqZk-6eooepb8gXeJcnsw!!/) [↑](#footnote-ref-22)
23. VietnamPlus (2019) [Scrap imports through road, railway border gates to be banned](https://en.vietnamplus.vn/scrap-imports-through-road-railway-border-gates-to-be-banned/145041.vnp), Ministry of Information and Communications [↑](#footnote-ref-23)
24. S&P Global Platts (2019) [Vietnam’s Jan scrap imports plunge amid stricter government rules](https://www.spglobal.com/platts/en/market-insights/latest-news/metals/022019-vietnams-jan-scrap-imports-plunge-amid-stricter-government-rules) [↑](#footnote-ref-24)
25. 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* [↑](#footnote-ref-25)
26. Ministry of Ecology and Environment of the People’s Republic of China (2018) [Announcement on adjusting the catalogue of imported waste management](http://www.mee.gov.cn/xxgk2018/xxgk/xxgk01/201812/t20181227_687488.html) [↑](#footnote-ref-26)
27. Business Standard (July 2020) [All tangled up: China confusion leaves scrap metal stranded overseas](https://tbsnews.net/world/global-economy/all-tangled-china-confusion-leaves-scrap-metal-stranded-overseas-99367) [↑](#footnote-ref-27)
28. Fast Markets (July 2020) [China banning solid waste imports in 2021, but ferrous scrap exempted](https://www.metalbulletin.com/Article/3939779/Search-results/NEWSBREAK-China-banning-solid-waste-imports-in-2021-but-ferrous-scrap-exempted.html) [↑](#footnote-ref-28)
29. Bureau of International Recycling (8 January 2020) [Chinese quotas for waste & scrap imports: full list of 2nd batch 2020](https://www.bir.org/news-press/news/item/1000000055-chinese-quotas-for-waste-scrap-imports-full-list-of-2nd-batch-2020) [↑](#footnote-ref-29)
30. Recycling Today (10 January 2020) [China issues second batch of scrap import quotas](https://www.recyclingtoday.com/article/sennebogen-scrap-recycling-lake-pleasant-michigan/) [↑](#footnote-ref-30)
31. Resource Recycling (5 May 2020) [China moves closer to complete import ban](https://resource-recycling.com/recycling/2020/05/05/china-moves-closer-to-complete-import-ban/) [↑](#footnote-ref-31)
32. Circular (9 July 2020) [China to ban solid waste imports from next year](https://www.circularonline.co.uk/news/china-to-ban-solid-waste-imports-from-next-year/) [↑](#footnote-ref-32)
33. FMT News (2018) [Permits to import plastic waste for 114 factories revoked](https://www.freemalaysiatoday.com/category/nation/2018/07/24/permits-to-import-plastic-waste-for-114-factories-revoked/) [↑](#footnote-ref-33)
34. Waste Management Review (2018) [Malaysia, Thailand and Vietnam waste imports crackdown](http://wastemanagementreview.com.au/battling-sovereign-risk/) [↑](#footnote-ref-34)
35. The Star Online (2018) [*Govt to ban import of all non-recyclable waste*](https://www.thestar.com.my/news/nation/2018/10/17/govt-to-ban-import-of-all-nonrecyclable-waste/) [↑](#footnote-ref-35)
36. The Australian (2019)[Australia would vet any waste returns, says Ley](https://www.theaustralian.com.au/nation/world/australia-would-vet-any-waste-returns-says-ley/news-story/96aaa8c05908bca11579908f128cf40e) [↑](#footnote-ref-36)
37. Malaymail (2019) [Yeo Bee Yin moots RM1,500 charge per shipping container to cut illegal imported plastic waste](https://www.malaymail.com/news/malaysia/2019/05/31/yeo-bee-yin-moots-rm1500-charge-per-shipping-container-to-cut-illegal-impor/1758091) [↑](#footnote-ref-37)
38. EcoWatch (21 January 2020) [Malaysia sends plastic waste back to 13 wealthy countries, says it won’t be ‘the rubbish dump of the world’](https://www.ecowatch.com/malaysia-plastic-waste-2644881004.html). [↑](#footnote-ref-38)
39. *The Nation (2018)* [Import of plastic waste banned](http://www.nationmultimedia.com/detail/national/30351792) [↑](#footnote-ref-39)
40. CIWM (2018) [*Thailand set to ban plastic waste imports by 2021*](https://ciwm-journal.co.uk/thailand-set-to-ban-plastic-waste-imports-by-2021/) [↑](#footnote-ref-40)
41. [Government Gazette Thailand](http://www.ratchakitcha.soc.go.th/DATA/PDF/2561/E/188/T15.PDF) (2018) [↑](#footnote-ref-41)
42. Bangkok Post (2020) [Waste plastic imports ‘to be banned’](https://www.bangkokpost.com/thailand/general/1846429/waste-plastic-imports-to-be-banned) [↑](#footnote-ref-42)
43. The Korea Times (2020) [Plastic waste imports banned in Korea amid mounting local trash](https://www.koreatimes.co.kr/www/nation/2020/06/371_292052.html) [↑](#footnote-ref-43)
44. Taipei Times (2018) [New waste plastic, paper import rules to take effect](http://www.taipeitimes.com/News/taiwan/archives/2018/10/02/2003701576) [↑](#footnote-ref-44)
45. Pakistan Today (2020) [Import of hazardous plastic scrap surges to 65,000 tonnes](https://profit.pakistantoday.com.pk/2020/05/21/import-of-hazardous-plastic-scrap-surges-to-65000-tonnes/) [↑](#footnote-ref-45)