



BROKERS OF SHAME

The New Tsunami of
American e-Waste Exports to Asia

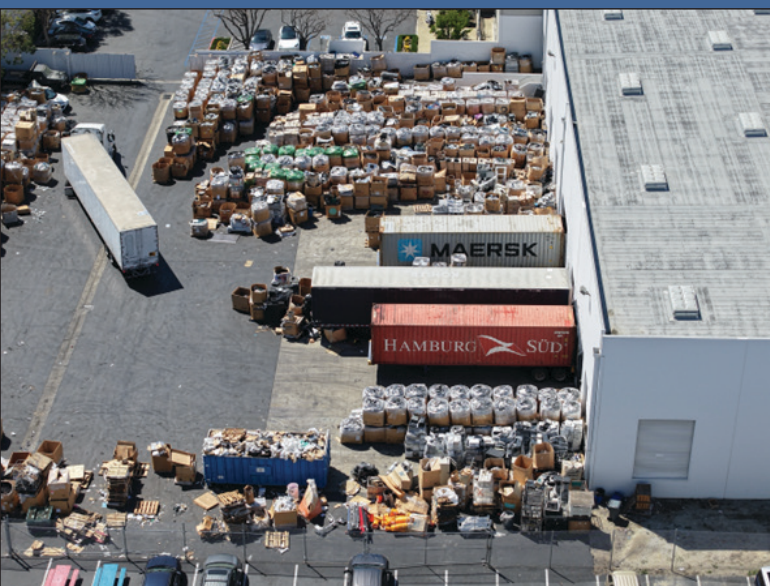
October 22, 2025



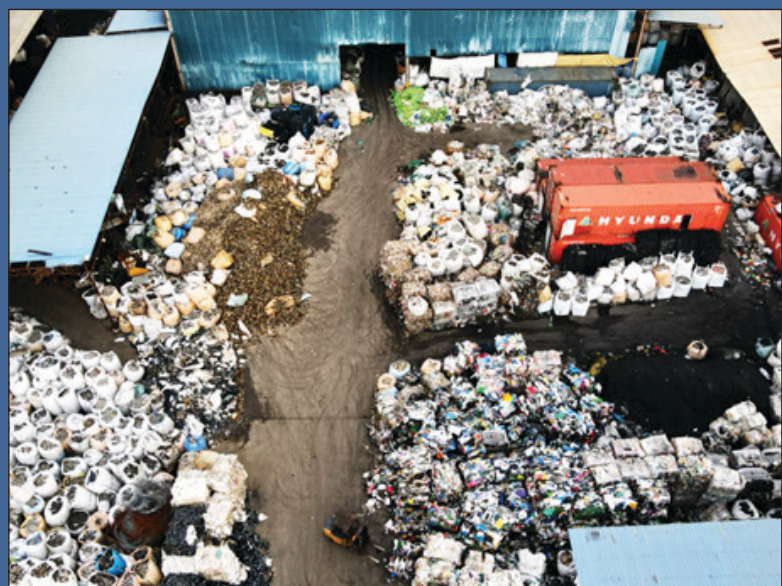
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Loading and shipping area of one of the identified 10 Brokers of Shame -- IQA in Chino, California. Copyright BAN, April 2025.



Typical imported e-waste processing plant, Telok Gong, Selangor, Copyright BAN, Nov 6, 2023.

October 22, 2025

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- » Semsotai

Appendix B: A History of BAN's e-Trash Transparency Project

Appendix C: California State Law Requirements for Managers of Electronic Waste

Appendix D: A Record of Recent Malaysian Government Enforcement Actions (EXCEL File)

DEDICATION

This report is dedicated to Bruce E.H. Johnson, a distinguished First Amendment attorney and longtime partner at Davis Wright Tremaine LLP, who passed away on August 20, 2024, at the age of 74. Johnson was widely recognized as one of the nation's foremost First Amendment lawyers, defending free speech for journalists, artists and activists.

He played a pivotal role in developing anti-SLAPP (Strategic Lawsuits Against Public Participation) laws to protect free speech nationwide for non-profit activist groups. His expertise was brought to bear in defending "60 Minutes," The Seattle Times, the New York Times and yes, the Basel Action Network (BAN) with a pro-bono commitment to defending BAN from SLAPP suits, and frivolous libel and slander claims based on their investigative work.



INTRODUCTION

Yet Again: We are Exporting Harm

In March 2002, Basel Action Network first published its seminal report and released its film by the same name: “Exporting Harm: The High-Tech Trashing of Asia.”¹ At that moment a beacon of blinding light was aimed at an unknown and formerly dark side of the digital age, and the world learned what was happening with the mountains of electronic waste we were creating each day. We learned where it ended up; we learned the location of “away”- the magical place we “throw” things. Through vivid imagery and data, the world was introduced to the harsh reality of what and where “away” actually is, when we discard our electronics- and who pays the price.

The revelation that communities in China were being subjected to our toxic waste, all in the name of “recycling”, sparked international concern over environmental injustice and began to be described as a new form of toxic colonialism.² The issue struck a nerve. Original Equipment Manufacturers (OEMs) issued public statements denouncing e-waste exports after images of branded products appeared in overseas dumpsites. Media outlets including CBS’s 60 Minutes further exposed the grim reality of informal processing: acid baths, open-air burning, and child labor. For many, this brought a personal reckoning—a sense of shared responsibility for harm inflicted on vulnerable communities.

BAN’s work at the time marked the beginning of a long-term effort by us and many others to shine a light on these practices, develop market-based accountability tools, and advocate for regulatory reforms. The history of BAN’s work since 2002 is included in Appendix B. But in hindsight we may have declared progress too soon. By 2018, following the closure of China’s infamous Guiyu e-waste sector, and China’s subsequent National Sword ban on waste imports, followed by similar measures in Hong Kong, we believed the era of global e-waste dumping was drawing to a close.

In 2019, global attention pivoted to a new waste dilemma -- plastic waste trade. The newly discovered trade in plastic wastes

became obvious and severe following China’s decision in 2018 to halt imports of plastic scrap, prompting widespread disruption in global waste flows. Many waste-exporting nations were left scrambling for alternatives. As a result, factories processing plastic and electronic waste rapidly multiplied in countries such as Malaysia, Thailand, Indonesia, and Vietnam- often involving relocated operations from mainland China. This shift reignited global scrutiny of cross-border waste trade. The Basel Convention was amended to begin controlling plastic waste trade. And more recently the European Union agreed to ban all plastic waste exports to non-OECD countries in 2026.

In North America, BAN raised the alarm following some e-Stewards certified electronics recyclers reporting difficulties managing plastics newly regulated under the Basel Convention. In response, both major electronics recycling certification programs—e-Stewards and R2—began to confront the challenges and despite the difficulties decided together very publicly that non-compliance was not an option. They affirmed the need to take a stand against illegal exports despite limited domestic processing infrastructure.³ BAN and others deepened their investigations into the broader systemic issues surrounding plastics and e-waste trade.

1. Exporting Harm: The High-Tech Trashing of Asia (February 2002) [Report](#) and [Film](#).

2. Via [Wikipedia](#), Dalyell, Tam (July 2, 1992). “[Thistle Diary: Toxic wastes and other ethical issues](#)”. New Scientist: 50.

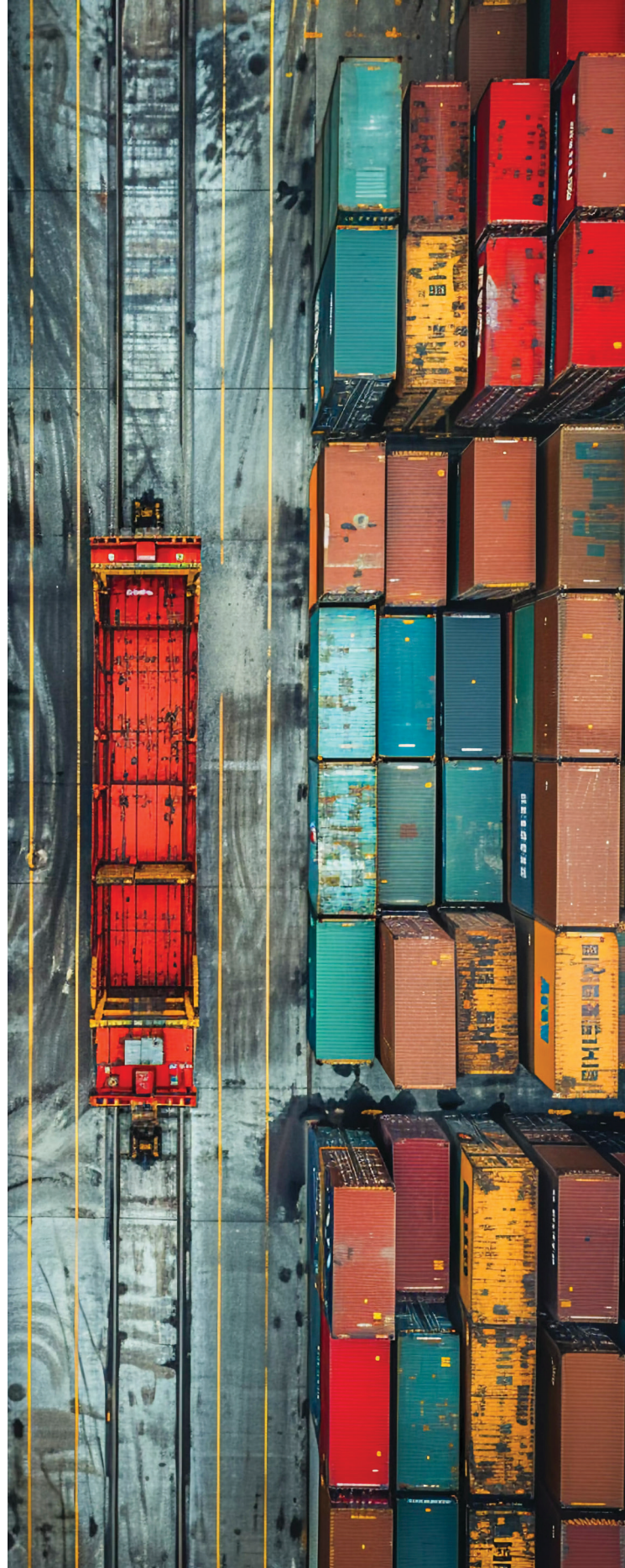
3. [In our Opinion: Industry must commit to Basel e-plastics compliance](#), Feb 1, 2024.

But what BAN and other watchdogs did not immediately realize was that, alongside the surge in non-compliance with plastic waste export rules, a significant portion of the electronics recycling industry had quietly reverted to the very practices BAN had helped expose and discredit years ago. A resurgence of the ugly trade is now in full swing. This new, almost invisible tsunami of e-waste, is taking place yet again, padding already lucrative profit margins of the electronics recycling sector while allowing a major portion of the American public's and corporate IT equipment to be surreptitiously exported to and processed under harmful conditions in Southeast Asia. Naively, we thought we had slain the dragon— only to find it crawling out of its dungeon and moving to Malaysia, Indonesia, Thailand and Vietnam. The headlines today, mostly in the language of Malay, could just as easily have been printed in 2002. We are now witnessing the same horror show— Part II.

In hindsight, we may be unfortunate victims of our success. After all, it was the demands for responsible waste management that helped spur the development of voluntary certification programs (e-Stewards, R2, and WEEELABEX). These programs designed to project new standards of good behavior and responsible recycling have blossomed — at least in membership. In 2008 there were no certified electronics recyclers or certified facilities. Today there are more than 1,000 in North America alone. But the Certifications while highly successful in terms of garnering numbers, have sadly too often become cloaks of complacency. And as we are learning, certifications may serve too often now as reputational shields rather than shields against poor behavior.

While it is true, based on earlier BAN reports (e.g. Scam Recycling), that e-Stewards has been more successful in preventing waste traffickers from invading their ranks, BAN's e-Stewards program is not without its violators and several have been exposed and removed from the program with a great deal of publicity.⁴ This report does not primarily focus on recyclers misusing their certifications, but rather on the new breed of brokers—largely unregulated intermediaries—who may serve as key enablers of transboundary movement of e-waste under conditions that may contravene certification requirements, legal frameworks, and environmental, social, and governance (ESG) principles.

We present this report not as a condemnation of the entire electronics recycling industry, but as a call to accountability and reform. The resurgence of harmful export practices must be met with transparency, enforcement, and meaningful systemic change.



4. e-Stewards has created a special program known as Performance Verification (PV), which consists of unannounced inspections, GPS tracking, as well as a Critical Non-Conformity (CNC) policy that allows for punitive measures against egregious, and willful violators of the e-Stewards Standard. Under the CNC program violators can be publicly suspended or removed from the program. Recent suspensions or removals can be found [here](#).

EXECUTIVE SUMMARY



Waste brokers have come to occupy a crucial role in the waste trafficking process, connecting producers of waste with final disposers. They facilitate the movement of waste across borders, often exploiting legal loopholes and misrepresenting the nature of the waste to obtain fraudulent authorisations.

- The Changing DNA of Serious and Organized Crime, EUROPOL, 2025.

This report presents new evidence of what, in BAN's professional assessment, is a significant and damaging trend of potential electronic waste exports from U.S.-based companies to developing countries—under conditions that raise serious ethical, environmental, and legal concerns.

Our findings focus on ten companies—referred to herein as the “Brokers of Shame”—all incorporated in the United States, whose operations appear to play a role in facilitating large-scale transboundary shipments of exports that may contain hazardous e-waste, despite longstanding global condemnation of such practices and the existence of both international and national prohibitions against such exports. These highlighted companies in alphabetical order are:

» **Attan Recycling**

» Chino, California

» **Corporate eWaste Solutions (CEWS)**

» Brea, California

» Hayward, California

» Olathe, Kansas

» Phoenix, Arizona

» **Creative Metals Group**

» Chicago, Illinois

- » **EDM**
 - » Chino, California
 - » Piscataway, New Jersey
 - » Plainfield, Indiana
 - » Singapore, Singapore
 - » Sharjah, United Arab Emirates
- » **First America Metal Corp.**
 - » Morris, Illinois
 - » Atlanta, Georgia
 - » Fort Worth, Texas
- » **Gem Lifecycle Solutions**
 - » Ontario, California
 - » Dallas, Texas
- » **Greenland Resource**
 - » Chino, California
 - » Fairview, New Jersey
- » **IQA Metals**
 - » Chino, California
 - » Corona, California
 - » Grand Prairie, Texas
- » **PPM Recycling**
 - » Paramount, California
 - » Santa Fe Springs, California
 - » Houston, Texas
- » **Semsotai**
 - » Brea, California
 - » Frederick, Maryland

The ten brokers share similar business models, which, based on our research, appear to profit by collecting e-waste and sending questionably declared exports to developing countries. Low-cost processing centers in these destinations often lack the infrastructure to manage such waste in a manner consistent with environmental and labor standards⁵. In the rest of the developed country world, exports of electronic wastes to developing countries are illegal due to their being parties to the Basel Convention. Thus it is that these businesses are advantaged by the fact that the United States, one of the world's largest and most wasteful countries per capita, and thus generating massive volumes of electronic waste, is also one of very few countries that have not yet ratified the Basel Convention and become a party to it.

While many of the identified brokers operate mostly from industrial zones east of Los Angeles, particularly from or near Chino, California, similar operations are emerging in Texas, Illinois, Indiana, New Jersey, and Georgia. Marketing text and graphics used on websites for these companies often portray them as environmentally responsible recyclers, but just as we found years ago in such cases of Executive Recycling⁶, and Intercon Solutions⁷, the word “recycling” for such companies can act as a green cloak, obscuring the actual nature of the work conducted. Our observations indicate that some facilities appear to maintain dismantling or shredding equipment intermittently, but a substantial portion of their activities may involve “packing and shipping” or organizing “cross-docking”⁸ from upstream “recyclers” or IT scrap generating institutions to the informal junkyards in the global South.

The brokers, on the one hand, make no pretense of being involved in any business other than the acceptance of e-waste ostensibly for recycling purposes, yet they then go out of their way to characterize, in bills of lading, cargo descriptions and Harmonized Schedule codes (HS codes) that do not correspond to e-waste or e-waste residual classifications, instead declaring shipments as unwrought (unformed) commodity metals (e.g. iron, aluminum, copper) or as new, working electronic equipment. If there are indeed such apparent misclassifications, which require further enforcement investigations by agencies such as

U.S. Customs and Border Protection agency, they would obscure the true nature of the shipments, create inaccurate trade data, violate trade laws, and may avoid applicable tariffs, potentially allowing brokers to prevent stricter oversight or fees.

Eight out of the ten identified brokers hold R2V3 certifications, a standard that prohibits practices violating the laws of importing countries. Based on the available evidence, the described export activities raise questions regarding conformance with both the letter and the intent of that voluntary standard. For the brokers in California, the practices documented in this report also appear inconsistent with the intent—if not the explicit requirements—of California state laws governing universal waste and the California Electronic Waste Recycling Act of 2003.

The ten brokers highlighted in this report may also play a role as enablers of obscuring others' e-waste stewardship. In short, large Fortune 500-level enterprises can claim they use mainstream certified recyclers to handle their ITAD (Information Technology Asset Disposition) and recycling, while those recyclers transfer e-waste to brokers and claim they don't themselves export—simply allowing the unnamed downstream brokers to do that work instead. In this way, it becomes clear that the real problem includes actors upstream of the Brokers of Shame, who may maintain a stance of blissful ignorance of where their e-waste goes. In the Pathways section below, we chart and describe the fundamental ecosystem of actors bearing responsibility.

These actors include large enterprise organizations and institutions that utilize certified and uncertified electronic-waste recyclers without performing sufficient due diligence into the downstream chain, as well as those recyclers themselves that utilize the offending waste brokers—both the ten named herein and others not identified in this report. While comprehensive reform of the entire ITAD and electronics recycling industry infrastructure will require upstream and downstream interventions (see Recommendations section), this report focuses on what we consider a lesser understood but critical enabling group of actors in the ongoing trade of e-waste -- the “Brokers of Shame.”

5. <https://www.doe.gov.my/portalv1/en/pengumuman/senarai-kenyataan-media>

6. <https://www.justice.gov/usao-co/pr/executive-recycling-company-and-executives-sentenced-fraud-and-international>

7. <https://www.justice.gov/usao-ndil/pr/owner-two-recycling-businesses-arrested-multi-million-dollar-fraud-scheme-involving>

8. Cross-docking is a term which connotes simply arranging the movement of material via corporate loading docks without really doing any work or storing the material for any significant length of time.

KEY FINDINGS

1. The Tsunami: A substantial volume of electronic waste generated in the United States continues to be exported to countries with developing economies. Based on trade data alone and corroborated by field investigations, and independent tracking,⁹ we estimate that in the 26 months from January 1, 2023, to February 28, 2025, the period of time examined most deeply in this report, BAN has accumulated evidence that **ten of the most prolific brokers** have collectively exported **over 10,000 40-foot shipping containers¹⁰** of what is believed to be electronic waste, **reportedly worth over 1 billion USD**. We have extrapolated from this evidence that, **industry-wide, approximately 32,947 metric tonnes of e-waste exports, contained in 1,949 containers, with a valuation of \$204 million dollars, could be moving from the U.S. to developing countries per month**. Malaysia is the primary recipient. To Malaysia alone, we estimate that in the 26-month period, e-waste trade may have represented about 6 percent of total U.S. trade (by volume) to that country.

2. Export Brokers and the Recycling Misconception: Analysis of operational data and site observations suggests that many of these exports may be facilitated by approximately two dozen intermediary entities, referred to herein as waste brokers. These e-waste brokers typically do not primarily engage in recycling themselves but instead serve as logistical conduits, directing e-waste to third-party downstream vendors, most often in developing (non-OECD) countries. These companies typically present themselves as recyclers yet do not appear to have the

staff or equipment capable of processing the observable volume of e-waste throughput.

3. Many of the Exports May be Illegal: While the United States is not a Party to the Basel Convention, most importing countries involved in the trade in e-wastes are. Under the Convention, the importation of hazardous or controlled electronic waste from a non-Party like the United States is illegal. Further, some of the target countries, including Malaysia, Thailand, and Indonesia, restrict or prohibit the importation of hazardous electronic waste from any source. Numerous seizures of such shipments have been reported by these countries, and enforcement actions have increased recently. While this strongly indicates potential non-compliance with importing countries' laws, there has been very limited recent enforcement by U.S. state or federal authorities to impede this illegal traffic in e-waste exports.

4. Large Customers Found in Consort with Exporting Brokers: While the investigation did not intentionally seek out upstream customers of the ten identified brokers, we learned via industry announcements and some upstream GPS tracking, that large clients such as Best Buy, Iron Mountain, and the U.S. Department of Defense appear to be, whether knowingly or unknowingly, connected within a chain of export involving potentially illegal e-waste shipments to developing countries.

5. Evidence of Misclassified Trade Declarations: Through inspection of commercially available trade data derived from shipping bills of lading, we observed that the vast majority of exports by the brokers appear to describe or declare cargo under Harmonized Schedule (HS) codes that do not correspond to the established codes for electronic waste. Instead, shipments are often declared as new commodities such as unwrought metals or functioning electronic equipment. While such exports are technically possible, they are considered highly unlikely based on the companies' publicly described business models. Misdeclarations may be used to obscure the true nature of the goods, potentially avoiding regulatory scrutiny or tariffs. Further, if these shipments are misdeclared, as they appear, they may constitute violations of U.S. trade laws.

6. California's Regulatory Concerns: California's Universal Waste Regulations and Electronic Waste Recycling Act (EWRA) require handlers and program participants to report export activities and ensure responsible downstream markets. However, based on publicly available data and our investigations, it appears that some companies operating in California, including several identified in this report, may not be fully meeting those obligations.

7. Certification and Oversight Gaps:

Eight of the ten brokers profiled in this report currently hold an R2 Certification, specifically, the R2V3 standard, which disallows actions that violate the laws of importing countries. R2 Certification permits brokers to obtain Certifications, while the competing e-Stewards Certification program—administered by BAN—only certifies e-waste processors and does not accept companies that are only involved in brokering. A greater difference lies in the fact that the R2 program allows for minimal downstream due diligence of vendors that likewise possess an R2 Certification – meaning that there is little scrutiny required by recyclers to question what happens beyond the receipt of wastes by other R2 companies. If an exporting broker has achieved R2 Certification, then the due diligence by the upstream Certified company is deemed unnecessary.

8. Common Use of Exporting Brokers by Certified Recyclers:

Certified electronics recyclers, including those holding R2 or e-Stewards credentials, have been documented using the identified “brokers of shame” that are known to be involved in trade that is likely to be illegal. In certain cases, this may be due to inadequate due diligence by the Certification Bodies, or a lack of training or clarity of the standard and its administration. Both BAN and SERI (program administrators) have recently removed certain recyclers from their certification programs for such non-conformities. Yet some have been

reinstated with almost equal alacrity. It is generally believed that both standards need to enhance and align their auditing and performance verification actions to ensure a level playing field and thereby prevent conformity avoidance via venue shopping between Standards.

9. Environmental and Occupational Harm:

Our field investigations, supported by on-the-ground documentation and third-party reports, indicate that much exported e-waste ultimately ends up in informal, unpermitted, and environmentally unsound, and occupationally unsafe processing sites. Common practices include open burning, primitive smelting, acid leaching, and manual dismantling –activities that are likely to expose workers, often migrants or undocumented laborers, as well as local communities to significant health risks. Rogue waste dumping and burning of the residues from the operations has become commonplace in countries such as Malaysia. Malaysian and Thai authorities have undertaken numerous and laudable raids on such facilities, but these operations often end up resurfacing elsewhere, making national enforcement a difficult task.

10. Greenwashing and Marketing

Discrepancies: A number of the highlighted brokers market themselves using sustainability-focused language and affiliations, referencing concepts such as the circular economy, ESG criteria, or carbon footprint reductions. While such claims may reflect legitimate aspirations or initiatives undertaken generally, our review of company practices and export

data suggests there could be significant discrepancies between these public representations and actual operations and their environmental justice impacts as well as impacts to both the carbon footprint and the toxicity footprint. Some brokers engaging in potentially unlawful trade also seek to legitimize themselves through association – for example, by collecting ISO Certifications (easily obtained), joining certification programs that allow brokering (as noted above), or affiliating with green initiatives such as tree-planting campaigns or by becoming members of mainstream trade associations such as ReMA (Recycled Materials Association).

11. Enforcement Challenges and Missed Opportunities:

Although international law exists among almost all countries of the world to restrict or regulate hazardous waste trade, the United States, by not being a Party to the Basel Convention, is seen as an outlier. In the U.S., exporters of many types of hazardous waste can operate with impunity. Meanwhile, in developing countries, there is often limited budget and manpower to examine all incoming containers. Encouragingly, countries such as Malaysia are taking stronger enforcement action to crack down on the illegal and damaging trade and the junk-yard facilities, including raising penalties. However, it remains inequitable that importing countries, largely victims of the trade, must bear the enforcement burden and costs for a problem originating with upstream actors and their governments.

9. See Appendix A: https://wiki.ban.org/images/7/74/Brokers_of_Shame_-_Appendix_A_-_Profiles_of_the_10_Brokers_of_Shame.pdf

10. We assume the containers are 40' containers as we have found no evidence that the e-waste containers being recorded in the trade databases for e-waste use containers smaller than the normal 40' containers. Deviations from this assumption would likely be insignificant.

THE METHODS

It can be difficult to bring complete transparency to the largely obscure world of international shipping. Trade, like many corporate activities, is regarded by law as proprietary, subject to extensive privacy and competitiveness protections. While it is reasonable to argue that the public has the right to know where their own electronic waste ends up after it is handed over to various private and municipal waste hauling, collection, and recycling programs, current laws in most jurisdictions do not expressly grant or enforce that right.

This is particularly true in the case of the United States, as it remains the only developed country in the world that has not ratified the Basel Convention – the global treaty joined now by 190 countries that has created “rules of the road” for an ethical and transparent circular economy. As the U.S. is not Party to Basel, there is no obvious environmental legal basis requiring disclosure to governments or the public regarding what is being traded, to whom, and what kind of operation it is being sent–nor to prevent such trade, even when considered unethical or environmentally unsustainable. Nevertheless, public awareness remains essential, as it will be from that truth that laws can be ratified, created, improved, and voluntary programs implemented. A core role of the Basel Action Network (BAN) over many years

has been to collect and report accurate evidence about waste movements and their impacts, to identify affected communities, and to enhance accountability efforts.

Given the opaque landscape of the waste trade, obtaining the full extent of the business’ activities is rare. Instead, as in our previous work, it has been our practice to compile and present available evidence, that, together, offers a preponderance of indicators for the reader assess. We have seen in the past cases—such as those involving Executive Recycling, Intercon Solutions, and Total Reclaim¹¹ – that public reporting can prompt authorities with greater investigative powers to gather additional evidence and pursue legal action where appropriate. Likewise, voluntary certifications such as e-Stewards and R2 have, in some instances, acted on such information to address non-conformities and improve standards.

For this report, in our effort to penetrate the fog and, at times, subterfuge surrounding the Brokers of Shame operations, BAN has drawn on various types of evidence available to the public and civil society organizations to compile the evidence on the ten highlighted brokers presented in Appendix A¹².

GPS TRACKING

BAN has over time developed and successfully used GPS tracking devices to follow the movements of electronic equipment globally¹³. This approach has since been incorporated into the e-Stewards Certification’s Performance Verification Program. Notably, GPS tracking revealed the fraudulent activity of e-Stewards certified recycler Total Reclaim in 2018, which led to the State and Federal government prosecutions. That story was documented by Verge Science in their short video “The Dark Side of Electronics Recycling.”¹⁴ Likewise, it was GPS trackers that discovered over 25 electronics “junkyards” in Hong Kong, leading to the Hong Kong government’s crackdown and abolishment of the yards, as revealed in BAN’s “Scam Recycling” report.

11. <https://www.justice.gov/usao-wdwa/pr/owners-northwest-s-largest-electronics-recycling-firm-sentenced-prison-wire-fraud>

12. [Appendix A.](#)

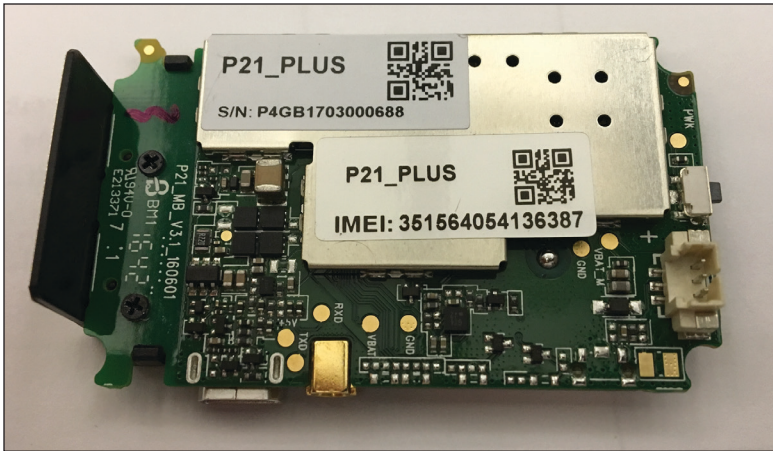
13. This history can be found in [Appendix B](#) of this report and actual reports can be found in the [e-Trash Transparency Project](#) section of the BAN website.

14. [The Darkside of Electronics Recycling](#)

BAN typically uses small, battery-powered GPS trackers – described on our Eartheye¹⁵ service website—embedded inside electronic equipment such as such as computers, printers or monitors and then introduced into the waste stream of interest. We can then follow the electronic trail of these devices in their movement across the earth. These trackers function similarly to a simplified smart phone including a GPS satellite reader, and phone-to-server functionality with which the tracker can report via local mobile phone systems, its

whereabouts to our servers. These trackers are capable of operating anywhere in the world with access to multiple mobile phone systems from 2G to 5G. Their battery capacity is high and thus can operate for long periods of time, providing extremely accurate reporting to our server of their daily locations or hourly locations. For this project, we usually pre-loaded the tracking devices into certain waste hazardous electronic equipment such as computers, printers, or monitors and entered these into the incoming stream of the Brokers being investigated.

In addition to these trackers, we often use Apple AirTags for tracking smaller items. Apple AirTags have been used successfully by many media outlets to track plastic and other wastes in recent years.



A tracker prior to installation into an electronic device such as a monitor or printer.

DIRECT OBSERVATION

As in prior investigations, BAN staff and trained volunteers conducted public, street-level surveillance of broker facilities. This includes visual observation, photography, and, where permissible, drone flights. With such observations and photographs, shipping line container numbers can be recorded and subsequently cross-referenced using publicly accessible shipping line tracking services to determine ports of destination, arrival dates, and vessel names. While this method cannot always definitively tell us what is inside the containers, we are sometimes able to photograph the cargo as it is being loaded into the containers. Most importantly, the shipping information can be shared with importing governments so they may inspect shipments directly. This technique was notably used in the cases against Intercon Solutions and Executive Recycling, both of which became federal cases, the latter featured in the 2008 60 Minutes exposé – “The Wasteland”.¹⁶



Photograph taken from outside of the property of Creative Metals Group. Sometimes it is quite possible to see the e-waste equipment being loaded in addition to the container number which can be tracked. Copyright BAN, 2024.

15. [Eartheye Website](#)

16. [The Wasteland](#).

WHISTLEBLOWER REPORTS AND LEAKED DOCUMENTS

Another often invaluable source of information comes from verified insider information from within the industry. These can provide leads for further investigation and additional corroboration. In 2024, in order to obtain more sources of information, BAN launched a whistleblower portal¹⁷, where tipsters can provide information to BAN anonymously. This has proven to be successful, and following this report we urge readers that might know of likely illegal export trade to get in touch with us.

COMMERCIALLY AVAILABLE TRADE DATA FROM MATERIAL RESEARCH L3C

BAN partners with Material Research L3C, a trade-research organization that subscribes to various commercial trade-data services, obtaining information from both official and commercial sources.

Official sources include the U.S. Customs and Border Protection Agency (CBP) and its Automated Commercial Environment (ACE) program, which compiles data via

the Automated Import System (AIS) and Automated Export System (AES). While AES data is not publicly available except in aggregated form—shared with the U.S. Census Bureau for publication as general trade data—commercial data services also purchase information directly from shipping lines based on their Bills of Lading (BOLs).

By cross-referencing this data with online shipping-line databases, container numbers can often be linked to specific BOLs, exporters, and destinations. In many cases, BAN and Material Research can obtain this export information before a container arrives in the receiving country. This capability forms the basis for BAN's government alerts under Operation Can Opener (see box).

INVESTIGATIONS AND REPORTING FROM THE IMPORTING COUNTRY

BAN often relies on global environmental partners and activists within our informal network to conduct site visits to tracker endpoints and to survey local environmental conditions. In addition, news coverage and government reports from target countries such as Malaysia serve as valuable sources of information. We regularly translate and review these reports into English making them an invaluable component of our overall analysis.

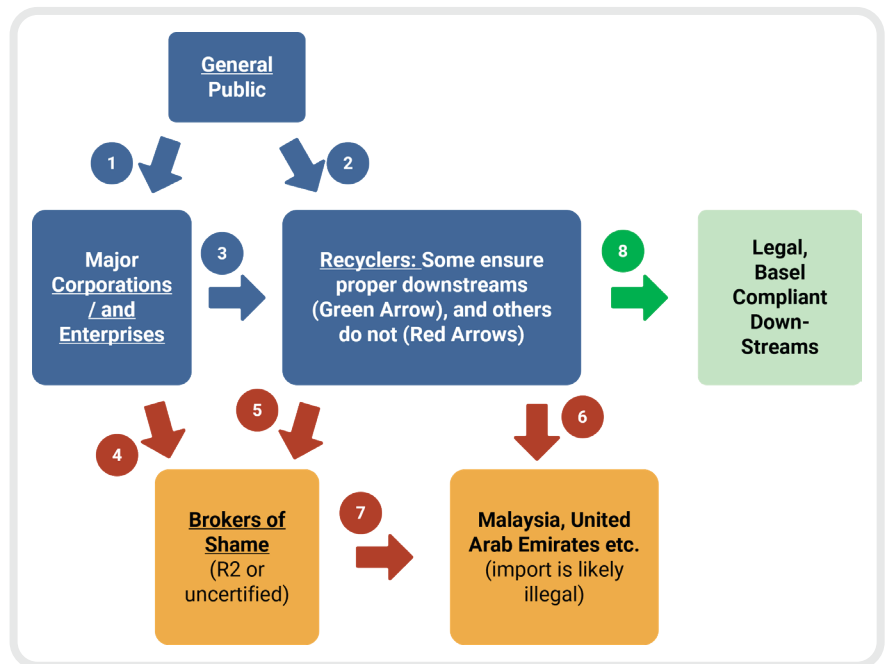
17. [BAN Whistleblower Portal](#)

THE PATHWAYS



In the diagram above, we can see the primary flows of electronic waste purportedly collected for recycling in the United States as they move along what is likely either an illegal chain of export to developing countries or, alternatively, an ethical pathway utilizing conscientious downstream recyclers. Blue arrows signify typical or benign pathways; red arrows signify irresponsible or likely illegal pathways that should never occur; and green arrows signify ethical, legal pathways—ideally verified by properly certified recyclers.

1. The general public, often believing that major brands would not be involved in unethical practices, takes their e-waste to retail outlets or public takeback events. Unfortunately, too often, as in the case of Best Buy, as revealed in this report, tracked waste given to the consumer take-back desk at Best Buy moved, via recyclers and then to a broker who exported it to Malaysia or the United Arab Emirates.
2. Here, we can see other e-waste collected from the general public perhaps as part of one of the 23 U.S. state-mandated producer-responsibility laws, moving via designated collectors or processors and then to likely illegal pathways. Unfortunately, there is no guarantee that these designated collectors will comply with international law (Basel Convention) or the national laws of recipient Basel Party countries, as that is not required by U.S. law. It is also rare for the Producer Responsibility Organizations (PROs) run by manufacturers to conduct audits or other performance verification actions to ensure against irresponsible exports in their programs. If the public or PROs intentionally use certified recyclers, there should be an assurance of compliance with the Basel Convention. However, evidence indicates that some certified recyclers continue to use unethical brokers or to conduct exports themselves that may violate legal or certification requirements. Certification auditors do not always detect these non-conformities. Consequently, the public remains largely unaware of the uncertain fate of their discarded electronics. They have placed faith in a system that too often fails them.



3. Another major flow of electronic waste moves directly from large enterprise entities—such as banks, medical institutions, IT platforms, and universities—to leading electronics recyclers, many of which hold certifications of responsibility (e.g., R2 or e-Stewards). Likewise, some retailers and IT-hardware manufacturers offer corporate take-back programs for the public. Yet even these large companies have not always ensured that their collected waste avoids being routed to developing countries via brokers. Generally speaking, while enterprise companies seek ESG (Environmental, Social, and Governance) credit for responsible recycling and reuse, they often direct procurement or IT departments to prioritize the lowest-cost options for IT asset disposition. It is likely that recyclers offering the lowest rates do so by relying on brokers who export e-waste to developing countries, creating a hidden subsidy through externalized environmental and social harm.
4. Some major corporations may send material directly to brokers that export waste in apparent violation of applicable laws. This is difficult to understand, as Fortune 500 companies have much to lose in terms of brand reputation and ESG standing. Moreover, these companies possess ample resources to conduct rigorous downstream due diligence, including on-site audits and GPS-tracking verification.
5. This flow of e-wastes directly from both certified and uncertified electronics recyclers to the Brokers of Shame represents a major problem for the electronics recycling industry today. After the horrors of global e-waste dumping to substandard and informal recycling operations in China, Nigeria, Ghana, and other hotspots around the world were exposed in years past, the industry writ large should know better than to revisit that sad chapter by allowing brokers to export their hazardous electronic wastes abroad to very similar and likely illegal operations around the world. We fear many Certified companies that are e-Stewards or R2 are currently violating their own Certification standards. It will be up to these Certifications to rapidly and assuredly do a better job of policing their programs. The tired old excuse of “I don’t export” while allowing others to do the dirty work has always been deemed unacceptable in the past, and even more so today.
6. Equally unethical are direct exports by recyclers themselves to developing countries. Although this occurs less frequently than before, some certified recyclers now use certified brokers to perform such exports on their behalf, effectively outsourcing the same harmful practices.
7. Most concerning are the large, recurring flows of electronic waste to Malaysia, Indonesia, Vietnam, Thailand, and, more recently, the United Arab Emirates (UAE) from the Brokers of Shame. These exports appear to be deliberate and made with awareness of their likely illegality. Many appear to involve false HS-code declarations or inaccurate Bills of Lading (BOL) descriptions. Further, the many brokers operating in California are highly likely to be in breach of state laws requiring full disclosure of all export activities.
8. The ethical, legal flow of responsibly managed recycling—most often conducted within OECD countries—is the model the industry must strive to achieve. In non-Basel-Party countries such as the United States, ensuring such responsible pathways requires robust due diligence, including the use of GPS trackers to verify downstream destinations and the selection of certifications that perform random, unannounced inspections.

In summary, it is reasonable to conclude that a new wave of waste dumping is largely made possible by reputable-appearing e-waste generators sending their obsolete IT assets to seemingly responsible recyclers, many of which are certified but non-compliant, who then rely on brokers to conduct exports on their behalf. Whether the shipments are made directly or indirectly, such trade has been universally condemned as hazardous-waste trafficking and, under international law, constitutes an environmental crime.¹⁸

18. Waste Trafficking has been identified by UNODC, Interpol, the Basel Convention, the WCO and other intergovernmental agencies as an environmental crime to be combatted. As described by UNODC: see Combatting Waste Trafficking, Introduction: https://www.unodc.org/conig/uploads/documents/2022-Legislative_Guide_on_Combatting_Waste_Trafficking.pdf

THE EVIDENCE

BAN has gathered e-waste trade evidence from:

- A. Commercially available trade data** made available to us from Material Research L3C indicating questionable exports by identified brokers in the period from January 1, 2023, to February 28, 2025. The significant numbers of shipments of clearly non-e-waste commodity descriptions (e.g. unwrought aluminum) observed being traded by companies whose stock in trade by their own advertisements and claims is the recycling of electronic waste, lead us to infer that the exports are in fact not as claimed but are likely to be exports of electronic waste and not the given commodities. This inference has been corroborated by direct observation of container loadings, as well as by importing country governments that searched the containers, as well as by GPS tracking placed directly into used electronic equipment passing through the companies hands. We searched these trade databases for company names, known addresses, and alternate names (such as DBAs).¹⁹ It was understood that not all companies would be identifiable in this way, nor was it likely that all of the retrieved data represented
- a complete record of each company's export activities.
- B. Recorded pathways of GPS tracking devices** placed inside hazardous, non-functional electronic waste, which subsequently passed through the facilities or known addresses of certain brokers before moving onward to a non-OECD Basel Party country.
- C. Visual sightings and photographs** of intermodal containers located in the loading areas of the identified brokers, taken by trained volunteers from public vantage points or by drones operated outside company property lines. The corresponding container numbers were later identified and tracked via publicly accessible online shipping-line tracking tools.
- D. Noting Foreign Government Corroboration.** On certain occasions, BAN was able to ascertain the contents of containers either through photographs taken during loading or when the containers were inspected or seized by authorities in the importing country.



19. The official trade data is provided by Material Research L3C. The photographic evidence is within BAN's files. Examples provided in the Profiles in Appendix A of this report.

On the basis of examining data derived from the above evidentiary sources, it is BAN's professional assessment that many of the shipments leaving the facilities of the ten identified brokers are likely to be non-compliant with the Basel Convention and that treaty's national implementation. This assessment is based on the following points:

1. The existence of multiple data sources (A-D above) documenting the movement of shipments from the United States to the importing country via identified brokers, including those with confirmed e-waste.
2. The primary business activities of these ten companies involve, almost exclusively, the management and transport of electronic wastes or used electronic equipment as defined under the Basel Convention (see The Law section) and by primary importing country law or policies. This conclusion is supported by company incorporation filings, advertisements, solicitations, websites, and photographic evidence obtained by BAN. While it is possible that some of the exports observed in (A–D) above could involve non-hazardous e-waste or non-waste materials, we assess such possibilities to be uncommon given the very broad scope of what is legally defined as e-waste under the Basel Convention, as well as their self-professed business model and stock in trade.
3. Almost all electronic waste is presumed hazardous under the Basel Convention unless demonstrated and declared otherwise. Even claims that fully functional or repairable equipment are non-waste are recognized under Basel only when the criteria defined in the Basel Technical Guidelines are met. In BAN's assessment, it is highly unlikely that such criteria were followed for the shipments observed. The Basel Convention does not require a minimum threshold of hazardous content for a load to qualify as controlled waste; thus, full containers of mixed electronic waste would almost certainly include hazardous components and therefore fall under Basel controls.
4. In certain key importing countries examined (such as Malaysia and Thailand) all importation of e-waste has been banned outright by national law or policy, regardless of hazardous classification (see The Law section).
5. As of January 1, 2025, the Basel Convention has classified all e-waste as controlled waste, regardless of hazardousness. Much of the data in this report pertains to shipments occurring in 2025 (see Legal section).
6. The Basel Convention prohibits the movement of controlled waste between Parties and non-Parties (such as the United States) without a valid Article 11 bilateral or multilateral agreement. All trading partners examined in this study are Basel Parties not bound to the United States by any such Article 11 agreement.
7. BAN's findings are further corroborated by enforcement outcomes in countries such as Malaysia and Thailand, where authorities have confirmed that BAN-supplied data, used to conduct inspections and seizures, corresponded with shipments later deemed contraband under their national laws.

Taken together, these findings indicate to BAN that the identified brokers' shipments may include significant amounts of e-waste defined as controlled waste under the Basel Convention, which is in fact misdeclared and exported in a manner unlikely to be compliant with the laws of at least one Basel party country.

Of course, BAN researchers did not always have visual access to inspect the contents of each container or to conduct laboratory tests confirming the nature of the goods inside every shipment. Accordingly, we cannot definitively assert that each shipment

constitutes contraband e-waste as defined by the Basel Convention or by the national laws of the countries concerned. For this reason, we do not declare any particular shipment "illegal" unless such a finding has been made by a relevant court or government authority.

Instead, this report uses the term "likely illegal trade" to describe any shipments that, based on available evidence, may likely contravene the Basel Convention or the relevant domestic laws of importing countries.

THE SCALE OF THE PROBLEM

Precise trade numbers are difficult to obtain, particularly for export data. In the United States, individual records from the AES (Automatic Export System) are not publicly accessible. The AES trade data is compiled in aggregate by HS codes and is made available by the U.S. Census Bureau. However, if exporters misdeclare HS codes, the resulting Census Bureau data may contain inaccuracies. Commercially available shipping-data services (e.g. Panjiva, Datamyne etc.) often purchase export data obtained from shipping-line Bills of Lading or use importing-country data to fill in gaps (such as the HS codes used or the

exporters). BAN accesses these datasets through Material Research L3C. Data identifying the consignees (recipients) of shipments are rarely available.

As detailed in this report, the Brokers of Shame and similar companies, almost never use the designated HS codes for e-waste when they move material to non-OECD countries. Instead, they declare the shipments under other categories, which do not correspond with their public claims regarding their business model and stock in trade. Consequently, aggregate figures from the U.S. Census Bureau are not reliable for estimating total U.S. e-waste

exports—for example, to Malaysia.

Although BAN does not have access to the original shipper-submitted AES records, it is possible to approximate trade volumes of likely exported e-wastes using the available datasets drawn as they are from shipping line BOLs as well as importing country data. In our assessment, for reasons described above, we presume that the identified brokers are in fact misdeclaring a significant portion of their shipments, which are in fact actually e-waste.



Below is a table presenting evidence of shipments assessed as likely to be illegal trade to developing countries from the Brokers of Shame, derived by Material Research L3C Trade data alone.

The Brokers of Shame / Likely Illegal Trade

Exporter	Container Quantity	Metric Tons	Calculated Value (US\$)
Attan Recycling Corp.	2,942	50,935.01	\$285,093,222.48
Creative Metals Group	1,426	27,003.64	\$49,231,326.67
IQA METAL, INC.	1,425	24,162.57	\$87,584,300.13
Corporate eWaste Solutions (CEWs)	1,038	13,525.88	\$495,955,402.28
Gem Iron & Metal, Inc.	677	11,058.59	\$30,196,988.99
PPM RECYCLING LLC	621	9,480.25	\$13,734,790.51
Semsotai	475	9,034.33	\$17,568,065.19
First America Metal Corp. (FAMCe)	453	6,406.66	\$19,979,802.70
Attan Recycling Corp / EDM Recycling, Inc.*	396	7,994.89	\$24,906,160.12
Attan Recycling Corp / PPM RECYCLING LLC*	295	4,753.59	\$9,423,616.76
EDM Recycling, Inc.	22	4,191.05	\$12,901,530.56
Greenland Resource, Inc.	52	889.94	\$1,602,376.11
Attan Recycling Corp / Semsotai*	4	59.19	\$632,007.36
TOTAL	10,026	169,496	\$1,048,809,590

*** Note:** As much of the trade data lists both the name and address of Attan Recycling, while also referencing other Brokers of Shame on the same shipments, it is difficult in such cases to determine which entity should properly be attributed as the exporter. This is likely due to the fact that freight forwarders are often listed in place of the actual exporters. One of the most prolific freight forwarders involved in the e-waste export business, KJ International is associated with the same address as Attan Recycling (see Appendix A).

As seen above, in the 26 months from January 1, 2023, to February 28, 2025, the period examined in depth for this report, BAN has evidence suggesting that the ten e-waste brokers profiled herein were involved in exports likely amounting to more than 10,000 40-foot shipping containers of material²⁰, with an estimated value exceeding 1 billion USD. It must be emphasized that this figure is unlikely to represent the true total, as our dataset is incomplete. Accordingly, the evidence drawn from the trade data alone should be considered a very conservative estimate and likely a significant understatement of the true amounts. To derive more useful approximations of the true scale of this likely illegal trade, BAN applied factors and reasonable assumptions grounded in our baseline of observable trade activity, extensive industry knowledge, and corroborating reports from government agencies, civil society, and journalists in recipient countries.

20. We assume the containers are 40' containers as we have found no evidence that the containers being recorded in the trade databases use containers smaller than the normal 40' containers. Deviations from this assumption would likely be insignificant.

ESTIMATING LIKELY ILLEGAL TRADE

First, for reasons described above, the export trade data we have accessed via Material Research L3C is limited to data obtained through agreements for some, but not all, of the shipping lines or importing governments. Best estimates suggest that commercially available data captures only 50 to 85% of actual maritime trade.

Second, the trade data is further incomplete because many shipment records may be obscured by mis-declared information on BOLs. If exporters use mailbox company addresses or freight forwarders in BOLs rather than the underlying identification of an exporter, this greatly complicates efforts to identify

the true parties responsible (e.g. the Brokers of Shame).

Third, the container spotting we conducted outside of corporate facilities, while providing excellent proof of shipment activity, was by necessity partial and random. For that reason, we have not included these sightings in making quantitative estimates.

Fourth, the scope of coverage has yet to be fully quantified. We have highlighted ten brokers here, but many other smaller actors are also engaged in similar trade. Thus, when estimating the total likely illegal e-waste trade from the United States, a scaling factor must be applied

to reflect additional exporters operating under comparable business models.

Finally, it must be recognized that a small portion of exports may be lawful. For example, an entire shipment could consist of clean aluminum scrap or of fully functional electronic equipment meeting the criteria outlined in the Basel Convention Technical Guidelines for non-waste status. To extrapolate estimates of the total likely illegal trade involving both the ten brokers identified in this report and the broader U.S. e-waste industry, BAN has made informed assumptions based on the considerations above.

EXTREMELY CONSERVATIVE ESTIMATE

First, under a most extremely conservative assumption, where only 25% of the observed shipments from the profiled “Brokers of Shame” involve electronic waste that would be considered non-compliant with waste trade laws of one country or another, this figure would still represent more than **2,500 containers**, totaling **over 42,000 metric tonnes**, with an estimated declared value exceeding **\$250 million USD** over a 26-month period. This conservative figure is provided only to demonstrate that, even under the most optimistic assumptions, the available evidence still indicates a serious problem.

A CONSERVATIVE BEST ESTIMATE

To arrive at a more informed and realistic approximation that still retains a high level of conservatism, we apply the following factors, for the following considerations:

- A. From random and periodic sightings alone, BAN gathered photographic evidence of containers of e-waste leaving these brokers' facilities.**
 - » (however as noted above we will not include these in our calculations)
- B. Commercial trade data is known to be under-reporting actual trade because data gathered by commercial trade data services is dependent on agreements with only some shipping lines and governments.**
 - » (for this reason, we will assume that what is recorded by our trade data is only 75% of actual trade)
- C. Among the recorded available trade data, it is often impossible to attribute an actual exporter to the shipment due to the use of mailbox companies or freight forwarders instead of names of actual exporters.**
 - » (We estimate very conservatively that our methods are only able to identify about 50% of the actual trade from the Brokers of Shame)
- D. The ten Brokers of Shame represent only a portion of the total corporate export picture in the United States. Many, others are doing the same.**
 - » (We estimate the Brokers of Shame represent only 50% of the total e-waste trade moving to developing countries from the US)
- E. In fairness, while uncommon in our view, it is possible that a certain percentage of the shipments from these e-waste brokers are technically legal (despite the comprehensive definitions of e-waste controlled under the Basel Convention and despite their advertised stock in trade. It is possible for example that they could be engaged in a side business which is not claimed by the company.**
 - » (We therefore provide a variable factor of 5% of all of the total to account for the exports by e-waste businesses that may in fact be technically non-hazardous waste or non-waste and thus legal.)

BAN's estimations are also based on pre-2025 Basel Convention rules, even though for two months of the study period the new amendments (classifying all e-waste as controlled) were already in effect. BAN likewise did not assess legality under U.S. state laws, customs regulations, or fraud statutes (e.g., misdeclaration or false non-export claims).

Using the formulas below, we estimate monthly totals of likely illegal e-waste trade imports from the US based on the 26-month period from January 1, 2023, to February 28, 2025:

Estimated Illegal e-Waste Exports from BoS = (Total Actual BoS Exports x 2 x 1.33)/26 - 5%

Estimated Illegal e-Waste Shipments by US = (Total Actual BoS Exports x 4 x 1.33)/26 - 5%

Based on these formulas, our estimates per month are as follows:

- » **Brokers of Shame, per month:**
 - » 16,473 metric tonnes of e-waste exports per month.
 - » 974 containers of e-waste exports per month.

» **From all U.S exporters, per month:**

- » 32,947 metric tonnes of e-waste exports per month
- » 1,949 containers of e-waste exports per month
- » \$204M dollars of e-waste valuation per month

» **Annual estimate from the US:**

- » **395,352 metric tonnes of e-waste**
 - » Roughly equivalent to the combined weight of **65,679 African elephants**.
- » **23,376 shipping containers**
 - » That's enough 40-ft containers to build an end-to-end vertical stack **177 miles high**—or the height of **32 Mount Everests**.
- » **\$2.45 billion dollars of e-waste valuation exported.**
 - » That's the same as paying **24,500 people** a salary of **\$100,000** for a year.



Thai officials examining circuit board scrap. May 20, 2025, Copyright: EARTH Thailand.

TARGET: SOUTHEAST ASIA

Almost 90% of the shipments from the Brokers of Shame found in trade data were exported to Malaysia, Indonesia, and Thailand. The table below presents distribution and relative percentages of exports, in descending order.

Country of Final Destination	Container Quantity	Metric Tons	Calculated Value (US\$)	Value Per Tonne
Malaysia	7584	131,353	\$328,175,904	\$2,498
	76%	77%	31%	-
Indonesia	896	11,745	\$20,467,219	\$1,743
	9%	7%	2%	-
Thailand	422	7,974	\$10,078,926	\$1,264
	4%	5%	1%	-
Unknown	247	4,552	\$11,304,450	\$2,483
	2%	3%	1%	-
China	221	3,507	\$83,111,734	\$23,698
	2%	2%	8%	-
Hong Kong	180	2,789	\$33,939,938	\$12,171
	2%	2%	3%	-
Singapore	130	1,757	\$403,009,986	\$229,340
	1%	1%	38%	-
Philippines	91	1,358	\$99,598,170	\$73,326
	1%	1%	9%	-
Myanmar	90	1,512	\$8,392,025	\$5,551
	1%	1%	1%	-
United Arab Emirates	49	954	\$28,486,563	\$29,864
	0%	1%	3%	-
Panama	35	586	\$3,609,522	\$6,160
	0%	0%	0%	-
Bahamas	22	397	\$2,505,664	\$6,308
	0%	0%	0%	-
Taiwan	21	334	\$13,223,459	\$39,618
	0%	0%	1%	-
Jamaica	13	213	\$678,497	\$3,183
	0%	0%	0%	-

Country of Final Destination	Container Quantity	Metric Tons	Calculated Value (US\$)	Value Per Tonne
Oman	11	196	\$505,459	\$2,582
	0%	0%	0%	-
Vietnam	4	69	\$1,062,335	\$15,457
	0%	0%	0%	-
Brazil	2	49	\$142,441	\$2,880
	0%	0%	0%	-
Cambodia	2	50	\$187,509	\$3,787
	0%	0%	0%	-
Laos	2	48	\$45,854	\$962
	0%	0%	0%	-
Pakistan	2	38	\$25,829	\$684
	0%	0%	0%	-
Costa Rica	1	10	\$55,861	\$5,694
	0%	0%	0%	-
Nigeria	1	6	\$202,244	\$35,357
	0%	0%	0%	-
Total	10,027	169,497	\$1,048,809,591	\$6,188

Total exports to developing countries from the brokers profiled in this report. January 1, 2023 to February 28, 2025. Malaysia receives 76% of all containers these organizations have exported.

DISPARITIES IN REPORTED VALUE

As shown above, there is a wide variation in reported values per metric tonne depending on the importing country. Waste-trade values are highly variable, and because e-waste lacks standardized commodity pricing, declared shipment values are difficult to verify and may differ substantially from the materials' actual recycling or recovery value.

International observers, including the Malaysian government, have publicly speculated that waste trade can, in some cases, serve as a vehicle for money laundering, given the pricing irregularities.²¹ For example, it is possible to overstate the declared value of waste shipments in order to move funds internationally. BAN has no direct evidence that the brokers profiled in this report are engaged in such practices, but this context helps explain why unusually high declared values may appear in trade data and why governments are particularly concerned about illegal e-waste trade beyond the profits gained by avoiding responsible domestic disposal.

PERCENTAGE OF OVERALL US COMMODITY TRADE TO MALAYSIA

Looking specifically at the e-waste trade as a percentage of all US trade to Malaysia - a figure derived from the US Census Bureau of actual maritime trade, we find that the United States exported nearly 653,000 40' container loads, holding 17.46 million metric tonnes of goods worth over 15.63 billion USD during the 26-month period studied.²²

Of the known quantities alone that we recorded with trade data from the Brokers of Shame, their likely illegal e-waste trade accounts for 1.16% of all traded containers, .75% of total weight, and 2.1% of declared value in U.S. exports to Malaysia.

But by applying our best-estimate formula again for the overall likely illegal trade flows from the US into developing countries, we can extrapolate that almost 6% of all containers, almost 4% of the metric tonnes of material, and more than 10% of the total value shipped to Malaysia in the 26-month period was likely illegal electronic waste trade.

Malaysia Exports in 26-month period	Container Quantity ²³	Metric Tons	Calculated Value (US\$)
TOTAL US exports to Malaysia of all trade	653,000	17.46M mt	\$15.63 Billion
Known Exports to Malaysia from these 10 brokers of likely illegal e-waste trade	7,584	131,353	\$328,175,904
Share of US Total Trade of the known exports to Malaysia from these 10 brokers of likely illegal e-waste trade	1.16%	.75%	2.10%
Estimated likely illegal e-waste trade from All traders/processors from US	38,416	665,355	\$1,662,342,224
Share of US Total Trade of the estimated total likely illegal e-waste trade	5.88%	3.81%	10.64%

21. <https://www.bernama.com/en/news.php/news.php?id=2399572>; <https://www.europol.europa.eu/crime-areas/environmental-crime/waste-and-pollution-crime?>

22. These figures come from an analysis of US Census Bureau data at <https://usatrade.census.gov/>

23. Based on averages contained by 40-foot (FEU) intermodal containers.

THE HARM

It is surprising how many consumers and industry practitioners—including equipment manufacturers, recyclers, refurbishers, and brokers—seem to have forgotten the lessons of just two decades ago, when the dumping of e-waste in Asia and Africa was revealed, scientifically analyzed, and universally condemned as an environmental assault. Major exposés, such as CBS’s infamous 60 Minutes episode “The Wasteland,” documented in vivid detail the dangers of informal recycling practices. What has been forgotten, or perhaps conveniently ignored, is the real harm caused by this trade: environmental degradation and serious health risks – particularly to informal workers, including women and children handling the e-waste, sometimes with flames, sometimes with acids, without protective equipment, exposing themselves and their communities to toxic substances.

Today, e-waste exports from the United States, Australia, Japan, and Europe continue to damage communities in Asia and Africa. Informal recycling operations expose workers and nearby residents to hazardous chemicals including heavy metals (lead, cadmium, mercury) and persistent organic pollutants (POPs)— a class of toxic substances that includes dioxins, furans, and flame retardants. These chemicals are so dangerous that 185 countries

have agreed to phase them out under the Stockholm Convention.

In 2021, the World Health Organization’s report “Children and Digital Dumpsites” warned of the rising volumes of electronic waste and the persistent involvement of women and children in informal recycling.

“With mounting production and disposal, the world faces what one international forum called a ‘tsunami of e waste,’ putting lives and health at risk,” said WHO Director General Dr. Tedros Adhanom Ghebreyesus. “In addition to harming the environment, recycling of electronic devices can harm children’s health unless done safely in formalized operations.”

The report found that of the 53.6 million tonnes of e-waste generated in 2019, only 17.4% was safely collected and recycled. Children are particularly vulnerable because their organs and systems are still developing, and they absorb more pollutants relative to their body size. Research also shows that women working in informal recycling sectors pass toxins to their children during pregnancy and breastfeeding.

E-WASTE POISONS AND THEIR EFFECTS

Heavy Metals

- » **Lead:** Linked to brain damage, developmental delays, reproductive harm.
- » **Cadmium:** Associated with kidney and bone damage; cancer risk.
- » **Mercury:** Neurotoxic, especially to fetuses; harms kidneys and immune system.

POPs

- » **Chlorinated Paraffins:** Endocrine disruption, liver toxicity, tumor risks.
- » **Brominated Flame Retardants (BFRs):** Hormone disruption, liver and immune system damage, impaired brain development.
- » **Chlorinated/Brominated Dioxins:** Cancer, immune suppression, reproductive and hormonal issues.
- » **Dechlorane Plus:** Suspected hormone disruptor; affects reproductive and nervous systems.
- » **PFAS:** Linked to cancer, hormonal disruption, and liver damage.
- » **PAHs:** Carcinogenic; affect lungs, skin, and bladder.

Microplastics

Contain toxic polymers and additives; cause inflammation, immune stress, and may carry toxic chemicals; many impacts are still unknown.

HOW POOR RECYCLING AMPLIFIES RISKS

Toxins in e-waste often become more hazardous during crude recycling practices. Burning, melting, acid treatment, and even washing release additional hazardous byproducts such as PAHs, dioxins, furans, PFAS, and microplastics. Even formal recycling, when properly managed, produces hazardous residues that must be safely disposed of, yet in informal operations, these residues are frequently discarded or released as fumes into the environment.

In some countries, including Malaysia, discarded e-waste residues have been found dumped and sometimes burned in palm plantations, under power lines, or along roadsides. These practices contaminate air, water, and –especially adjacent to agricultural lands– the food chain.

A BAN/IPEN study in Agbogbloshie, Ghana—a major hub for informal e-waste recycling—found some of the world’s highest

levels of POPs in chicken eggs, up to 220 times international safety guidelines.²⁴ A 2023 IPEN study in Thailand found elevated levels of Dechlorane Plus (a substitute for banned flame retardants) in the blood of 40 e-waste workers and in local chicken eggs and fish, indicating widespread contamination.²⁵

The evidence is clear: e-waste trade, when funneled into informal recycling, poses a serious risk to workers, communities, and ecosystems. While some companies promote their businesses using terms such as “recycling”, “circularity”, and “diversion from landfill”, BAN’s investigations throughout the years suggest a very large portion of the e-waste trade is conducted by informal recyclers. Such practices undermine genuine sustainability efforts and mislead stakeholders about the true environmental and social impacts of recycling as actually practiced.

24. <https://ipen.org/documents/pops-eggs-report-africa>

25. <https://ipen.org/documents/environmental-food-and-human-body-burden-dechlorane-plus-waste-recycling-area-thailand-no>

THE GREENWASH

A recurring pattern among many brokers and the recyclers and waste generators who, via a chain of export, make use of them, is the use of sustainability language and buzzwords like green, circularity, and ESG in their marketing, communications, and even reporting. While these concepts are legitimate, they can be easily co-opted by when claims are not supported by a review of a corporation's practices.

In the Profiles of the Brokers of Shame found in Appendix A, we include examples of this disingenuous messaging and marketing tactics, where our research suggests a gap between stated commitments and actual practices. Some companies also cloak themselves in charitable contributions or community projects as demonstrations of corporate responsibility. While such initiatives no doubt have independent value, they cannot erase the harm of e-waste exports to informal recycling markets – all of which impact Environment, Social and Governance (ESG) valuations.

For communities on the receiving end of the waste trade, the marketing narrative often stands in stark contrast to the

reality of exposure to hazardous practices and pollutants. The environmental and health costs borne by vulnerable populations are not going to appear in corporate sustainability reports or carbon footprint assessments. Very often, simply reporting weight going to recycling is claimed as being a report of laudable circularity and avoided emissions via avoidance of primary production in favor of recycling, when, in fact, the dirty recycling accomplishes the opposite of true sustainability and ESG goals.

The result is far more insidious than a mere disconnect. It is a lie being told at the expense of well-meaning programs to reward corporate responsibility in order for greedy companies to not only enrich themselves from externalizing real costs and harm to developing countries, but at the same time claim and monetize “green” credits for doing so. It is vital that any organization charged with assessing ESG and sustainability make sure they don't blindly assume recycling to be environmentally beneficial but to be sure they can peel back the fraying green cloak to understand what may really lie beneath the term “recycling”.

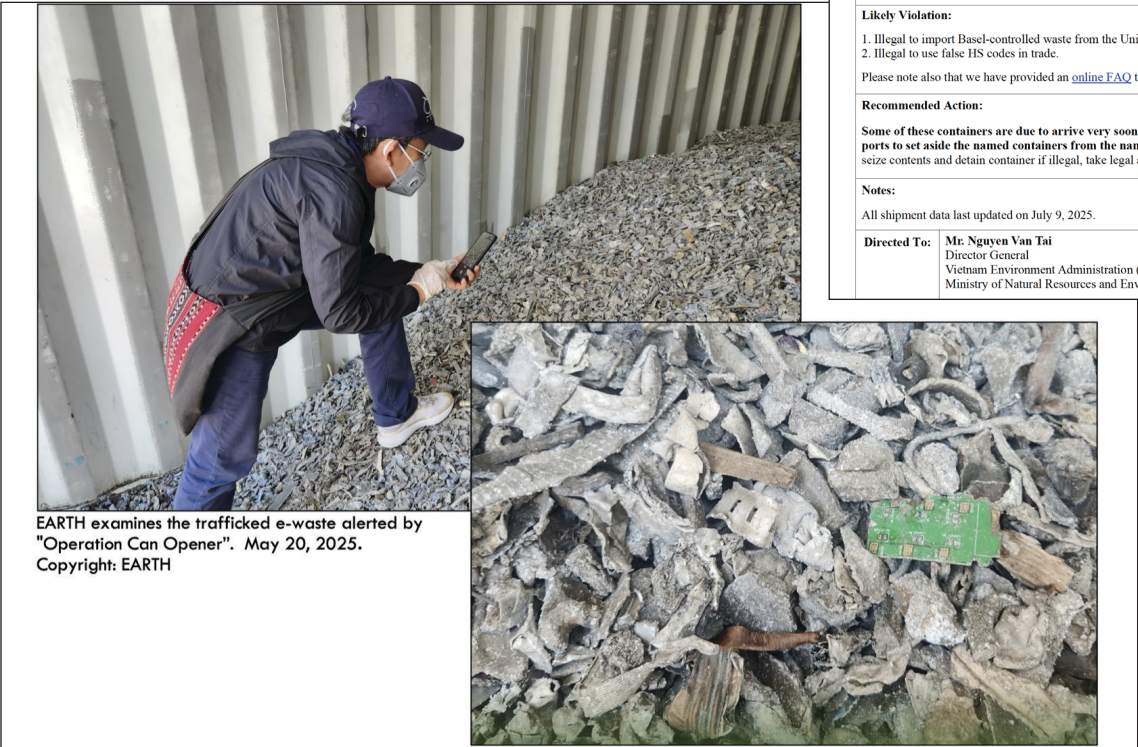


In these times corporations often cloak themselves with grand concepts such as ESG, while making a mockery of the term through backdoor global dumping practices. By not conducting due diligence, nor concerning themselves with the toxicity footprint as well as the carbon footprint, the reality of corporate ESG might actually depict something like the image here. Lets not let that happen.

OPERATION CAN OPENER

In the parlance of shipping, intermodal containers are known informally as “cans”. These “cans” are widely used in global trade, including, unfortunately, for the movement of hazardous and other problematic wastes such as e-wastes and plastic waste from one part of the world to another. Over the years, BAN has developed techniques to track these containers worldwide and to identify shipments that present a high likelihood of containing contraband waste. Recently, in collaboration with non-governmental organizations around the world, BAN launched Operation Can Opener²⁶, an initiative designed to provide early warnings to destination-country governments in time to intercept their arrival.

These alerts supply customs and environmental authorities with detailed information – including container numbers, vessel names, ports of discharge, and the estimated dates and times of arrival so they may inspect shipments upon arrival and determine compliance.



Basel action network Operation Can Opener Waste Trade Risk Alert			
Importing Country: Vietnam	Exporting Country: USA	Date: July 10, 2025	Alert Number: OCO-25-VN005-EP
Likely Exported Material/Waste: 1. Electronic Wastes: Basel listings Y49 and A1181 2. Plastic Wastes: Basel listing Y48			
Likely Violation: 1. Illegal to import Basel-controlled waste from the United States as a non-Party, per Basel Article 4(5) 2. Illegal to use false HS codes in trade. Please note also that we have provided an online FAQ to explain more.			
Recommended Action: Some of these containers are due to arrive very soon. We hope you can move quickly to notify the ports to set aside the named containers from the named ships. Open containers, search entire container, seize contents and detain container if illegal, take legal action if necessary.			
Notes: All shipment data last updated on July 9, 2025.			
Directed To:	Mr. Nguyen Van Tai Director General Vietnam Environment Administration (VEA) Ministry of Natural Resources and Environment (MONRE)		

26. [Operation Can Opener](#)



Minister YB Nik Nazmi bin Nik Ahmad addressing the Malaysian Parliament describing the e-waste crisis in Malaysia, including giving praise to BAN's Operation Can Opener. March 6, 2025. Screenshot from YouTube speech.³¹

On March 26 of last year, BAN issued its first alert to the government of Malaysia regarding the imminent arrival of 135 e-waste containers aboard a single vessel. Additional alerts followed: one on April 1st concerning 142 containers, and another on April 9 concerning 58 containers. Shortly thereafter, BAN documented containers originally bound for Port Klang, Malaysia, were unloaded in Singapore instead, a development we interpreted as likely intended to avoid our Operation Can Opener operation and imminent inspection in Malaysia.

Following these alerts, Malaysian authorities undertook a large-scale enforcement action, inspecting 179 suspect containers and detaining 122 confirmed to contain e-waste²⁷. The intelligence provided by BAN proved to be very accurate and resulted in one of the largest enforcement actions against e-waste in Malaysia. BAN's intelligence contribution was later acknowledged in a speech²⁸ by YB Nik Nazmi bin Nik Ahmad, Minister of Natural Resources and Environmental Sustainability, before the Malaysian Parliament on March 6, 2025.

Our program has recently seen additional success in the countries of Thailand (see profile on Semsotai in Appendix A) and, most recently, in October 2025, Indonesia announced the return of 19 containers based on BAN's alerts moving to PT Esun, the facility operated by CEWS (see Appendix A).²⁹ For more information about Operation Can Opener, please refer to our FAQ.³⁰

27. <https://recyclinginternational.com/business/business-news/ban-identifies-illegal-us-e-scrap-exports/57703/>

28. [Speech by Nik Nazmi](#)

29. https://www.thestar.com.my/aseanplus/aseanplus-news/2025/09/30/batam-authorities-to-probe-alleged-import-of-toxic-electronic-waste-from-the-united-states#goog_rewarded

30. BAN [FAQ](#)

31. [Speech by Nik Nazmi](#).

THE DRIVERS

Despite widespread scandals, negative press, and denunciation by certification programs in recent years in the general and industry trade press, e-waste exports to developing countries continue to be an international issue³². While, for most countries, the legality of e-waste trade remains largely subject to the Basel Convention and the Basel Ban Amendment's rules and jurisdictional interpretation of these, it is likely to be illegal if involving trade with the United States -- a Basel Non-Party. In any case, the harm done to developing country populations and environments, and therefore a serious controversy is well documented. In light of this, it is important to re-examine the structural drivers that have allowed such practices, once thought vanishing, to suddenly reappear on the global stage, and in the United States in particular.

THE UNITED STATES: A BASEL-FREE ZONE

The United States remains the only major OECD/industrialized nation that has failed to ratify the Basel Convention, which restricts the export of hazardous wastes, particularly to developing countries.³³ In the absence of ratification or equivalent domestic legislation, exports from the U.S. may not constitute a crime under U.S. law, but are likely to be unlawful in receiving countries that are parties to the Convention, due to the fact that Basel Parties are barred from trading with non-Party countries without a special side agreement known as an Article 11 agreement. The US, being an outlier in not prosecuting illegal waste exports in many circumstances required by the Basel Convention, creates a glaring global gap in enforcement capacity and accountability.

While U.S. officials have acknowledged limitations in prosecuting e-waste exports under current law, legal tools do exist that go unused. For example, the US could pass legislation making it illegal to violate another country's waste import laws. Likewise, Congress could pass measures such as the Secure E-Waste Export and Recycling Act (SEERA), now being promoted by a large coalition of electronics recyclers that have joined the Coalition of American Electronics Recyclers (CAER),³⁴ which would sharply restrict exports of non-functional electronics³⁵.

Alternatively, enforcement could draw on existing statutes covering fraud and smuggling, as in the cases brought against Total Reclaim, Executive Recycling, or Intercon Solutions³⁶.

Executive action could also curtail federal agency exports by ordering that US government e-waste be handled exclusively within the US.

32. Exporting Harm: The High-Tech Trashing of Asia (February 2002) [Report](#) and [Film](#); ongoing coverage in major media outlets.

33. www.basel.int/Countries/StatusofRatifications/PartiesSignatories/tabid/4499/Default.aspx

34. [Coalition of American Electronics Recyclers](#)

35. [U.S. Congress, Secure E-Waste Export and Recycling Act \(SEERA\), H.R. 5579, 114th Congress \(2016\)](#). Bill text available at: <https://www.congress.gov/bills/114/congress/house-bills/5579>

36. [U.S. Department of Justice, United States v. Executive Recycling, Inc., Case No. 1:11-cr-00376 \(D. Colo. 2012\); United States v. Total Reclaim, Inc., Case No. 2:16-cr-00254 \(W.D. Wash. 2016\); United States v. Intercon Solutions, Inc., various filings, DOJ](#)

Despite these options, neither Democratic or Republican administrations have pursued such reforms and most electronic waste exports remain unregulated by existing domestic law, such as the Resource Conservation and Recovery Act (RCRA). A likely factor is consistent opposition from trade associations such as the Recycling Materials Association (ReMA, formerly known as ISRI) which continues to actively oppose Basel many Basel controls and legislation such as SEERA³⁷. As a result, the United States remains a global renegade nation, effectively providing a permissive environment for waste exports that are restricted or criminalized abroad.

STATES FAIL TO ENSURE RESPONSIBLE WASTE DESTINATIONS

In the absence of coherent federal action to restrict waste dumping, state governments have an important role to play. Several states have enacted legislation to divert e-waste from landfills based on the principle of Extended Producer Responsibility, yet most have not addressed the risks of export, an outcome that can be more damaging to health and the environment than lined, regulated landfills³⁸. Even states that have made some requirements to at least provide transparency for exportation have failed to enforce their own e-waste policies. In California, this is most evident when we learn that very little action has taken place by agencies CalRecycle and the Department of Toxic Substances Control (DTSC), which oversee the state's pioneering Electronic Waste Recycling Act of 2003 (EWRA), often called SB20, as well as California's universal waste law. The EWRA was designed to ensure responsible management of covered electronic waste, while additional "universal waste" rules applied to other e-waste streams³⁹. While states cannot directly restrict exports under the U.S. Constitution's Commerce Clause, they can require transparency and reporting to ensure wastes are managed responsibly worldwide⁴⁰. This was meant to have been the case in California.

Under the EWRA, companies are required to report exports of any "covered electronic waste" (CEW), including LCD and CRT devices. Later amendments to the EWRA now require proof that the waste could not be managed in California prior to being considered for export and confirmation that the destination country permits its import. Further, all state actors, including those not participating in the EWRA program, must abide by the state's Universal Waste laws which classify most e-waste as controlled material requiring advanced notification and reporting 60 days prior to export.

Despite these requirements, our inquiries to California regulators yielded no evidence of enforcement actions against exporters. Rather, DTSC informed BAN that "DTSC is not aware of any e-waste facilities in California that have been issued an enforcement action for exports of e-waste." They went on to state they believe the track record of participating companies has been "better than ever," but provided no data to support this claim.⁴¹ To clarify what appears to us to be a discrepancy between our findings of very questionable exports and the State's view of matters, BAN has submitted a Public Records Act request seeking all export notification records and enforcement documentation. At the date of this report's publishing, despite the first tranche of data being promised by October 10, 2025, we have yet to receive any records. The lack of acknowledged enforcement raises concerns that existing laws and safeguards may not be fully utilized, thereby possibly allowing questionable export practices to persist.

37. Institute of Scrap Recycling Industries (ISRI) [now ReMA]. "Position on Basel Convention Ratification and Export Controls." ISRI Policy Statements, Washington, D.C., various years. See: <https://www.isri.org>

38. GAO, Electronic Waste: EPA Needs to Better Control Harmful U.S. Exports through Stronger Enforcement and More Comprehensive Regulation (2008)

39. California Electronic Waste Recycling Act of 2003 (SB 20, Sher, Chapter 526, Statutes of 2003). Enacted September 24, 2003; codified in California Public Resources Code § 42460 et seq. See CalRecycle, Electronic Waste Recycling Act (SB 20, Sher, Chapter 526, Statutes of 2003)

40. U.S. Constitution, Commerce Clause, Art. I, Sec. 8.

41. Email from DSTC to BAN dated February 20, 2025.

EXPLOITING THE DOWNSTREAM DUE DILIGENCE DIFFICULTIES

While the companies highlighted in this report act as brokers, responsibility does not begin or end with them. Recyclers, IT asset disposition (ITAD) firms, and large enterprises that are in the chain of disposition, make use of such brokers are all in a position to “know better,” given the long, very public history of the e-waste trade in the last two decades.

For example, it has long been known that it is far too easy to make the claim that “we don’t export” and then have others do that dirty deed for you. Hired guns are not a new concept. Indeed, within the electronic waste management business in the last decades, the collective condemnation of such downstream negligence has led to current policies and laws invoking “duty of care,” “extended producer responsibility,” and “downstream due diligence”. Today, every electronics recycling standard stresses that a responsible business is obliged to follow all harmful wastes that pass through its hands to final disposition, ensuring it is managed responsibly far past one’s holding of it, and certainly past the walls and fences of one’s facility and the borders of one’s country.

Yet, despite clear principles of downstream due diligence now embedded in international guidelines and

recycling standards, it remains far too easy to pass the toxic buck downstream. One exacerbating factor is the industry’s increasing reliance on “flipping” material rather than actually processing it. But reliance on intermediaries, or next-tier vendors, exponentially increases the difficulty in ensuring accountability along the recycling chain. Today, we find many new recycling business models conducted with as many as 50 downstream vendors in the course of a year. Many of these vendors are in constant flux based on pennies-on-the-pound price changes. This increases the opacity and enormous difficulty in understanding who the vendor might be at any given time, and uncertainty as to what that vendor does today and what they might do tomorrow. And, of course, beneath this first tier lies another tier of even greater obscurity and complexity, and so on.

Holding downstream actors to upstream standards appears now, in this climate, to often be a goal beyond the reach of a basic once-a-year site visit Certification program. For example, such programs have the right currently to visit certified companies and verify compliance by inspection, but they do not have the right to conduct such unannounced visits on

the downstream tiers below the certified company.

Recent standards developments have made matters even worse. One seemingly logical development is to eliminate or lessen the downstream requirements for staying within the Certification “ecosystem”. The R2v3 standard, for example, limits its downstream due diligence requirements only to the “next certified facility.”⁴² This, in effect, eliminates a set of eyes on operations, a vital safety net, placing heavy reliance on the certification system behaving flawlessly, and creates opportunities for cheating.

It may make sense to once again return to the principle that a Certified company must always be responsible for its downstream as far as it may extend, as well as for relying on some system redundancy as a means to true system security. In addition to placing all downstream due diligence back in the hands of the upstream certified companies, it is also true that Certifications should likewise consider means to more carefully police the activities and operations of downstream vendors of Certified companies themselves.

42. [Sustainable Electronics Recycling International \(SERI\), R2v3 Standard – Appendix A: Downstream Recycling Chain, specifying that certified facilities may limit due diligence documentation to the next certified downstream vendor.](#)

Without securing the downstream safety net, many companies operate in a vulnerable state of being called out for program hypocrisy. It is a clear liability for companies to make claims of being driven by the principles of ESG (Environmental, Social, Governance), taking pride in, for example, avoiding CO₂ emissions from recycling. However, these ESG claims risk becoming misleading if they fail to account for downstream practices all the way to final disposition. When recycling is outsourced to poorly regulated or informal operations abroad, the social and environmental harms—including risks to workers, communities, and ecosystems—may far outweigh the reported climate benefits. For ESG claims to be credible, companies must ensure their entire upstream, as well as downstream, chain of diligence is managed responsibly.

THE USE OF FALSE COMMODITY CODES

Recent developments observed in the research for this report reveal what appears to be widespread use of misdeclaration in customs filings. Increasingly, e-waste shipments are described and assigned Harmonized System (HS) codes intended for primary, unwrought commodities or new electronic equipment rather than the codes established by the World Customs Organization for e-waste and scrap. This apparent practice hides the true nature of the material and enables shipments to move across borders with reduced scrutiny. While such misclassification may constitute a violation of trade or environmental law, to date, we are not aware of prosecutions

in either the United States. However, officials in Malaysia and Thailand have recently described incoming e-wastes as misdeclared.⁴³

The effects of false declarations are twofold: they facilitate the cross-border movement of waste that might otherwise be restricted or rejected, and they undermine the ability of regulators, researchers, and trade monitors to detect trends in e-waste flows through official data. In practice, misdeclarations enable exporters to present shipments as legitimate commerce, masking activities that warrant closer enforcement oversight.

LEVERAGING THE REPUTATION OF CERTIFICATIONS

It is one of our central findings in this report that the Brokers of Shame have been aided by a significant and surprising development – the granting of certifications of responsibility to companies clearly unworthy of them. Both e-Stewards and R2 have made it very clear that legal compliance is required of their Certified recyclers, regardless of the jurisdiction they operate within or their downstream vendors operate within. So, it is shocking that many of the Brokers of Shame (8 out of 10) have achieved Certification in 18 different locations, as they may be routinely violating their certifications by violating the laws of countries in the chain of disposal/recycling.

43. Thailand: <https://apnews.com/article/thailand-illegal-import-electronic-waste-bangkok-port-994ef5e8c3776e9b77580d9954eebaeb>; Malaysia: <https://www.recyclingtoday.com/news/malaysia-electronic-aluminum-scrap-imports-seized-documentation-plastic/>;

The ability for several of the Brokers of Shame to have achieved certification is, in our view, a major factor as to why the likely illegal waste trade has seen a resurgence in the United States.

Broker of Shame	e-Stewards	R2v3 Certifications / Facilities
1. Attan Recycling	no	no
2. Corporate eWaste Solutions	no	3/3
3. Creative Metals Group	no	no
4. EDM	no	1/1
5. First America Metal Corp.	no	8/8
6. Gem Lifecycle Solutions	no	1/2
7. Greenland Resource	no	2/2
8. IQA Metals	no	2/3
9. PPM Recycling	no	2/2
10. Semsotai, SST Metals	no	1/1
TOTALS	brokers ineligible	8 Companies, 20 Certifications, 22 Facilities

While the eight major brokers may be in non-conformity with the R2v3 standard to which they are certified, we have evidence that many other Certified Recycler companies upstream of these brokers are making use of these same pathways, or in some cases exporting directly to developing countries themselves. Thus, while R2v3 appears to be unwittingly enabling what appears to be illegal export via the Brokers of Shame, companies holding either or both e-Stewards or R2v3 certifications are also at times violating the terms of their Certifications by utilizing downstream pathways with or without the help of brokers.

In research conducted for this report, we found that one of the most repeated factors of the dubious trade is the belief that once a downstream vendor is certified to either R2 or e-Stewards, then they are viewed as “golden” – as a legitimate downstream, and all subsequent due diligence is no longer the responsibility of the original shipper. The R2v3 Standard, unfortunately, institutionalizes this by indicating that downstream due diligence obligations are not required once waste comes “to final disposition or to the first R2v3 facility” in the downstream chain. This has resulted in far less scrutiny than clearly needs to be occurring, and has resulted in the phenomenon that some R2 actors, once they manage to achieve R2v3, park themselves as R2 vendors just to be able to provide the service of R2 “washing” material for onward export.

It is sadly clear that voluntary electronics recycling certifications, while intended to ensure responsible practices, at times over and above the law, are too often used by some in ways that obscure greenwash harsh realities. Instead of serving solely as assurances of proper management, certifications can inadvertently function as a seal of approval that masks irresponsible or unlawful exports. This would, of course, not be possible were the inappropriate Certificates never granted by Certifying Bodies. The fact that they were, and many others not reported herein, are likely able to achieve Certificates speaks to systemic weaknesses in the audit-based conformity systems currently employed. The root cause of these weaknesses must be investigated further. Further, Certification programs that rely primarily on scheduled audits may lack sufficient mechanisms to detect or deter misconduct between inspections. These systemic issues and needed reforms are discussed in greater detail in the section The Role of Certifications.

WATCHDOGS LOOK THE OTHER WAY AS FOCUS SHIFTS TO PLASTIC WASTE

In 2017, China's National Sword policy abruptly curtailed imports of foreign waste, signaling to the world that they would no longer be the world's dumping ground. While the policy targeted multiple waste streams, it was the mountains of plastic waste that became the most visible, piling up in search of new trade routes.

Around the same time, BAN's GPS tracking campaign helped prompt enforcement action in Hong Kong, which led to the closure of many electronics yards that had emerged following Guiyu's phaseout as a global e-waste hub. We

felt confident that we had made a serious dent in the North American exports to Asia. We failed to note the massive shift towards Southeast Asia as Chinese businessmen, formerly operating out of Hong Kong simply moved their waste trade and primitive recycling businesses to Malaysia, Thailand, Indonesia, Philippines, and Vietnam.

As a result of this success, the environmental movement began fixing their focus on plastic waste and plastic waste trade, as NGO watchdogs such as BAN, turned their attention to the tsunami of plastic waste that began careening

towards Turkey, Mexico, and Southeast Asia. With respect to the electronics recycling industry in the US, it was our greatest concern that, following the new Basel Plastic waste amendments, US recyclers were illegally exporting mixed and contaminated plastic waste to countries like Malaysia. What we did not suspect was that even prior to this, during the period (2018 – 2019), that the e-waste exports began regaining momentum and the resurgence accelerated even more once pandemic-related trade slow-downs lifted. The new Tsunami was a hidden one, and we were all caught out looking the other way.

CONDITIONS IN MALAYSIA CREATE FERTILE GROUND FOR WASTE TRADE AND NEGLIGENT RECYCLING

Following China's 2018 National Sword policy and subsequent restrictions in Hong Kong, Malaysia emerged as a major destination for imported electronic waste. Despite Malaysia's formal ban on e-waste imports and its obligations under the Basel Convention, a convergence of local economic incentives, weak enforcement capacity, and systemic loopholes made it very attractive to international operators wishing to move their closed informal recycling operations in Hong Kong elsewhere.

Malaysia's geographic position along key shipping routes, robust port infrastructure, and an oversupply of industrial land created favorable conditions. A Mandarin-speaking business community helped facilitate partnerships with Chinese traders who had previously operated in the waste trade in China. Local landlords and intermediaries also benefited financially, while some businesses provided logistical support to ease importation. Because waste could be processed at lower cost in Malaysia—often without the same environmental or worker protections required in exporting countries—brokers were able to pay higher prices for imported scrap. Recycling of mixed e-waste is fraught with the fact that many of the fractions are not economically recyclable and so residual material could be openly dumped or burned, contributing to documented pollution of air, rivers, and farmland. These impacts shifted environmental and health burdens first from the US, and then from the recycling operations set up largely by Chinese companies, onto local communities and workers.

Labor conditions also kept costs low. Processing was largely manual and often performed by desperate migrant workers, many of whom are undocumented and lacking adequate protective gear. Reports from media and NGOs have raised concerns about unsafe working environments, and in some cases, allegations of human trafficking or child labor.⁴⁴

Although Malaysia has a national ban on e-waste imports, enforcement has been inconsistent. Penalties were historically low relative to profits, and oversight was hampered by corruption, inter-agency communication gaps, and resource constraints. For example, in one state, thousands of factories reportedly fell under the responsibility of just a few dozen inspectors.

Trafficking networks exploited false declarations, such as mislabeling shipments as “scrap metal” or “aluminum alloy,” and many companies used incomplete or inaccurate addresses, complicating oversight. As the US is not a Party to the Basel Convention, U.S. exporters, for their part, faced few restrictions from their own government and little help in assisting, for example, in returning illegal shipments.

Political hesitation also played a role. Authorities were reluctant at times to close illegal operations that generated local jobs if those jobs were precarious. Combined, these factors created a high-profit, low-risk environment for e-waste imports.



Community member investigating the dumpsites used by plastic and e-waste recyclers to dump process residues and ashes. Discarded television housings are seen in the foreground. Klang, Selangor. Copyright Basel Action Network, 2024.

In sum, Malaysia’s role as a hub for U.S. e-waste has been enabled by a combination of global displacement of waste flows, favorable local conditions, and weak governance. While recent reforms—such as stronger penalties, multi-agency enforcement actions, and new restrictions—signal progress, systemic vulnerabilities remain. Without stronger actions from exporting countries and closer international cooperation, including with civil society groups, generally, Malaysia’s task in turning back the toxic tide is a challenging one and is thus likely to remain a target for e-waste flows for some time.

44. <https://c4center.org/malaysia-is-not-a-garbage-dump-citizens-against-corruption-complacency-crime-and-climate-crisis/>;
<https://www.greenpeace.org/static/planet4-malaysia-stateless/2020/05/4dbab0db-the-recycling-myth-2.0-the-toxic-after-effects-of-imported-plastic-waste-in-malaysia.pdf>;
<https://occup-med.biomedcentral.com/articles/10.1186/s12995-024-00410-z>;
<https://verite.org/wp-content/uploads/2016/11/VeriteForcedLaborMalaysianElectronics2014.pdf>;
see Appendix D for a spreadsheet of many media reports.

THE MALAYSIAN RESPONSE



Operating from the legal waste management sector allows criminal networks to set up new trafficking companies when needed, taking control of the entire waste management chain. Corruption and document fraud are significant enablers of these illicit operations....Waste trafficking is increasingly committed from within the waste management sector, blurring the lines between licit and illicit operations.

- The Changing DNA of Serious and Organized Crime, EUROPOL, 2025.

THE STEADY RISE IN E-WASTE TRAFFICKING

From 2018 to 2020, much of the global focus was on plastic and not e-waste. The Malaysian government cracked down on some mixed plastic waste shipments and illegal plastic recycling facilities. By July 2020, 225 containers of plastic waste were reportedly returned by Malaysia to various exporting countries including the US, Spain, France, Canada, United Kingdom, and more. From 2019 to July 2020, the Department of Environment (DOE) had carried out 316 enforcement operations at plastic recycling factories, with 585 actions taken overall, such as issuance of compounds and prohibition orders.⁴⁵ 148 recycling factories were ordered to close because they were operating illegally and violating environmental laws.⁴⁶



SUNGAI SIPUT, PERAK, MALAYSIA, 15 Feb 2025 - Northern Brigade Commander, General Operation Force, Senior Assistant Commissioner Shahrul Hashim showed the illegally disposed electrical and electronic waste (e-waste) and seized various machinery worth RM1.3 billion in a raid carried out at a factory on Jalan Sungai Siput-Kuala Kangsar, Perak. Picture by Permission of Utusan Malaysia.

45. <https://c4center.org/malaysia-is-not-a-garbage-dump-citizens-against-corruption-complacency-crime-and-climate-crisis/>

46. <https://www.hmetro.com.my/mutakhir/2019/04/448473/kastam-agresif-periksa-kontena>

Following the entry into force of the Basel Convention Plastic Waste Amendments in January 2021, Malaysia reported a decrease in illegal plastic imports. However, reports indicate that as plastic shipments declined, illegal imports of electronic waste began to increase. For example, in 2019, Free Malaysia Today reported that “thousands of containers laden with e-waste from Europe and the U.S. were illegally imported into the country through the ports in Pasir Gudang (Johor) and Port Klang (Selangor).”⁴⁷

The C4 Center 2021 reporting on plastic waste noted, “industry insiders revealed that a prominent businessman is involved in WEEE and scrap smuggling throughout the industrial areas surrounding Port Klang.”⁴⁸ The report also summarized news reports about e-waste being seized at the ports in 2020, including as a result of an alert from BAN on June 6, 2020. In a key story well ahead of its time, another news outlet, Malaysiakini, reported that “there are at least 200 plants, large and small, that are recycling e-waste illegally in the country,” and noted that about 1,000 containers of e-waste were entering the country per month.⁴⁹ The sheer number of stories generated by the press for what was a rather clandestine business is rather stunning as demonstrated in even the partial list in the Table below.

Seizures of E-Waste Containers Entering Malaysia from 2020 to 2022

Date	Incident	Source
June 6, 2020	Notification from the Basel Action Network (BAN).	https://www.doe.gov.my/wp-content/uploads/2021/09/Kenyataan-Media-JAS-Status-Illigal-Shipment-Amerika-Ewaste.pdf
June 7, 2020	DOE and the Royal Malaysian Customs Department (Customs) intercepted one container on the ship IBN Al Abbar at Port Klang.	
June 18, 2020	Inspections verified that the container held e-wastes. The same importing company was found to have imported three other containers of e-waste from the US between April to June 2020. All containers were seized by Customs.	
June 26, 2020	Two of the four containers had been returned to the US, while the DOE issued notices to the company owner and the shipping company. Investigations revealed that the importer’s address was incorrect, but the DOE managed to trace the owner of the company based on previous import documents. From January 1 to June 26, the DOE and Customs successfully intercepted a total of 23 cases of illegal importation of hazardous waste.	
July 1, 2020	In a press statement, the DOE reiterated that Malaysia prohibits the importation of hazardous waste such as e-waste into the country, that the importation of all four containers was done without prior informed consent of the Basel competent authority in Malaysia which is the DOE, and that the competent authority in the US was informed about the illegal shipment despite not being a Party to the Basel Convention.	

47. <https://www.freemalaysiatoday.com/category/nation/2019/03/21/after-china-ban-e-waste-rains-on-malaysian-soil>

48. <https://c4center.org/malaysia-is-not-a-garbage-dump-citizens-against-corruption-complacency-crime-and-climate-crisis/>

49. <https://www.malaysiakini.com/news/639880>

Date	Incident	Source
November 10, 2020	Penang DOE and Customs seized two containers filled with e-waste mixed with crushed plastic and metal waste from Japan.	https://www.malaymail.com/news/malaysia/2020/11/12/penang-doe-seizes-two-shipping-containers-full-of-waste-at-butterworth-term/1922064
February 11, 2021	Penang DOE detained two containers of e-waste from Spain and the Philippines.	https://www.kosmo.com.my/2021/02/11/jas-pulau-pinang-tahan-dua-kontena-sisa-elektrik-elektronik/
February 18, 2021	Selangor DOE seized two containers of e-waste from US and Hong Kong.	https://www.astroawani.com/berita-malaysia/jas-selangor-patahkan-cubaan-seludup-masuk-lapan-kontena-esisa-dari-hong-kong-283602
July 13, 2021	Penang DOE Penang seized a container carrying e-waste (damaged electronic screens, crushed circuit boards, and other electronic components) from the US and ordered for it to be sent back.	https://www.astroawani.com/berita-malaysia/jas-arrah-kontena-bawa-ewaste-haram-dari-amerika-syarikat-dihantar-pulang-308142
December 8, 2022	Penang DOE found electronic waste shipped illegally into Malaysia, falsely declared as "aluminium alloy" but contained 38 pellets of scrap waste from printed circuit boards (PCB), internal hard disk drives, CPUs, and other electronic components, which will be sent back to its country of origin - the US.	https://www.malaysiakini.com/news/647455#google_vignette
December 8, 2022	Selangor DOE seized three containers carrying electrical and electronic waste (ewaste) weighing 100 tonnes, containing used computer hardware and wire from the US and Spain, declared as "aluminium scraps" to evade the authorities.	https://www.thestar.com.my/news/nation/2022/12/09/selangor-doe-detains-three-containers-with-ewaste-from-us-spain
December 15, 2022	From January to November, the DOE found 31 out of 59 containers to contain carry e-waste, and issued 18 notifications to order the containers to be returned to the country of origin. 19 containers had been returned to the U.S., Spain, Australia, Belgium, Latvia, South Korea, Mexico, and Japan. The DOE is committed to strengthening monitoring and enforcement over e-waste importation. Stern action will be taken over importers who fail to abide with the law, including to return the containers.	https://www.malaymail.com/news/malaysia/2022/12/15/environment-minister-doe-to-empower-monitoring-enforcement-on-e-waste-imports-to-malaysia/45456 https://www.thestar.com.my/news/nation/2022/12/09/selangor-doe-detains-three-containers-with-ewaste-from-us-spain
December 23, 2022	Penang DOE detected, through random inspections, five containers from Hong Kong and the U.S. carrying e-waste. Four of the containers having been sent back to their country of origin, while the other is in the process of being sent back.	https://www.nst.com.my/news/nation/2022/12/863764/penang-uncovers-5-cases-containers-e-waste-imported-hk-and-us-year

The detection of illegal e-waste shipments at ports continued at increasing rates throughout 2023, while illegal recycling operations for both plastic and e-waste began turning up all over the country. Raids at illegal facilities in the state of Selangor found teenagers being exploited as forced labor,⁵⁰ and an illegal facility in Pahang was found to be resuming its operations despite being ordered to close.⁵¹ Meanwhile, a massive fire gutted some other illegal recycling facilities in another state of Kedah, burning for over 80 hours, causing serious pollution.⁵²

Illegal dumpsites that used to contain imported municipal plastic waste soon were replaced with piles of electronic plastics and shredded cable residues. These began mushrooming around oil palm plantations, under transmission wires, and adjacent to rural villages. Residents in the district of Kuala Langat, that is rapidly developing and converting plantation land into industrial land, and is close to the ports, found seven dumpsites with e-waste scraps in August 2022. They also complained to the authorities about three illegal e-waste processing plants in the area which led to the operations being shut down.⁵³ In 2023, local activists uncovered a massive mountain of shredded electronic plastics and cables in the neighboring district of Klang, as shown in below.⁵⁴



Massive illegal dumpsite in Klang, Selangor. Copyright Basel Action Network, December 12, 2024.

50. <https://www.hmetro.com.my/mutakhir/2023/09/1012075/polis-selamatkan-4-remaja-jadi-buruh>

51. <https://malaysiagazette.com/2023/02/22/kilang-haram-masih-operasi-selepas-dua-kali-diserbu-andasura/>

52. <https://www.nst.com.my/news/nation/2023/12/987425/firefighting-op-bukit-selambau-finally-ends-after-80-hours>

53. <https://www.malaysiakini.com/news/647505down>,
<https://www.sinarharian.com.my/article/208279/edisi/tiga-kilang-proses-e-waste-tanpa-kelulusan-ditahan>

54. <https://www.bernama.com/en/bfokus/news.php?special-project&id=2188258>

SEIZURES OF CONTAINERS AT THE PORTS



KLANG, SELANGOR, MALAYSIA, 26 JUNE 2024 – Minister of Natural Resources and Environmental Sustainability, Nik Nazmi Nik Ahmad (second from right), together with the State Executive Councilor for Public Health and Environment, Jamaliah Jamaluddin (third from right), display electronic waste (e-waste) from two containers that were detained at West Port, Pulau Indah, Klang. Picture by permission of Utusan Malaysia.

Malaysia can be said to have been slow to respond to the severity of the problem being revealed by journalists and by civil society. From 2018 to November 2020, the Department of Environment (DOE) detected only 75 containers of e-waste entering the country and reportedly had sent them back to their countries of origin.⁵⁵ In 2018 only one container was seized and the following year the number rose to 34. It decreased to 23 in 2020 and 11 in 2021 and 2022 respectively, and then shot up to 32 in 2023.⁵⁶

In early 2024, BAN began its Operation Can Opener (OCO) program and sent several emails to the government, which largely went unanswered. However, in May 2024, the Department of Environment of the state of Selangor (Selangor DOE) revealed to reporters that they had seized 29 containers at the port. Out of 29, 18 of these contained e-waste, with the other 11 reported to contain scrap metal and plastic waste.⁵⁷ The Selangor DOE later announced that they had issued 29 instruction notices involving 93 containers to importers as of April 30 that year. Since then, enforcement agencies have responded readily to BAN alerts and have carried out several enforcement operations.

In June, the Malaysian Ministry of Natural Resources and Environmental Sustainability (NRES) (the national DOE is a department under this Ministry) announced another major seizure of containers. To date BAN has not received regular detailed reports of the searches and seizures stemming from BAN's alerts but Malaysia has been increasingly vocal in their appreciation of the OCO alerts. The data in the table below is compiled from publicly available records including news articles, press statements, and Parliament speeches.

55. <https://international.astroawani.com/malaysia-news/75-ewaste-containers-entered-malaysia-2018-doe-282310>

56. Parliament speech by minister of environment, March 6, 2025, <https://www.parlimen.gov.my/hansard-dewan-rakyat.html?uweb=dr&arkib=yes>

57. <https://www.thestar.com.my/news/nation/2024/05/03/ewaste-discovered-at-westport>

The list is not exhaustive as there have been many news reports of e-waste container seizures from 2024 to 2025 that are not listed here, and thus it has been impossible to estimate the actual number of containers detained and containers verified as carrying e-waste based on the publicly available information

Number of containers detained, verified to contain e-waste, 2024 - 2025

Date of Report	Time Period	Containers detained	Containers w/ e-waste	Containers returned	Agency	Source
May 3, 2024	-	29	18	-	Selangor DOE	News https://www.thestar.com.my/news/nation/2024/05/03/ewaste-discovered-at-westport
June 26, 2024	Mar 21-Jun 19, 2024	301	106	-	NRES	Press statement https://www.nres.gov.my/ms-my/pustakamedia/KenyataanMedia/KENYATAAN%20MEDIA%20KERAJAAN%20GIAT%20BANTERAS%20KEMASUKAN%20HARAM%20E-WASTE%20DAN%20SKRAP%20LOGAM%20DI%20PELABUHAN%20NEGARA.pdf
October 12, 2024	2024	195	Uncertain	-	NRES	News https://www.thestar.com.my/news/nation/2024/10/12/malaysia-still-a-transit-hub-for-illegal-ewaste-disposal-says-nik-nazmi
October 14, 2024	Aug 17 - Oct 4	151	107	-	Customs	News https://www.nst.com.my/news/nation/2024/10/1119461/customs-dept-work-police-identify-recipients-over-rm6m-e-waste-shipments
February 18, 2025	Aug-Dec 2024	336	306	-	Customs	Press statement https://www.customs.gov.my/ms/Muat%20Turun%20Hebahuan/18.2.2025%20-%20SIARAN%20MEDIA%20JKDM%20HQ%20BIL.%206%202025%20(E-Waste).pdf
February 20, 2025	2024	462	-	140	DOE	News about press conference https://www.thestar.com.my/news/nation/2025/02/20/over-500-containers-inspected-for-imported-e-waste-says-doe
March 6, 2026	2024	-	329	-	NRES	Minister's speech in Parliament https://www.parlimen.gov.my/hansard-dewan-rakyat.html?uweb=dr&arkib=yes
	2025	-	15	-		
March 14, 2025	Aug 2024-Feb 2025	389 (Port Klang)	348	-	Customs	Press statement https://www.facebook.com/photo?fbid=970200295295100&set=pcb.970201081961688
	Jan 2024-Feb 2025	Penang port	26	-		
May 19, 2025	since Mar 14, 2024	354	-	-	NRES	Press statement https://www.nres.gov.my/ms-my/pustakamedia/KenyataanMedia/20250519 KM - KERAJAAN KOMITED BANTERAS KEMASUKAN SISA SECARA HARAM KE DALAM NEGARA.docx.pdf
	Jan 1-May 13, 2025	179 (containers inspected by DOE)	122	-		

The various news stories based on government reports about container seizures include the following anecdotal details:

- i. In a press statement dated June 26, 2024, the environment ministry announced that from March 21 to June 19, 2024, Customs had seized 301 containers suspected of containing e-waste that arrived in Malaysia's ports. 106 containers were verified to be filled with electronic waste (e-waste), almost entirely from developed countries such as the United States, falsely declared under different categories. The remaining 195 reportedly contained scrap metal.⁵⁸
- ii. News reports quoted the environment minister saying on October 12, 2024 that between 2020 and 2024, 436 containers had been intercepted. A total of 88 containers were intercepted in 2020, 76 in 2021, 30 in 2022, 47 in 2023, and 195 in 2024. However, it was unclear whether the containers included all types of hazardous waste, or only e-waste.⁵⁹



BANTING, SELANGOR, MALAYSIA, 6 March 2025 - Among the illegal electronic waste found at the e-waste factory following the discovery of ammunition waste estimated to weigh 40 tonnes during Ops Hazard in Teluk Panglima Garang, Banting, Selangor. Picture by Permission from Utusan Malaysia.

- iii. On October 14, 2024,⁶⁰ Customs revealed that 151 containers were detained. 44 containers declared as aluminum alloy, aluminum flakes and copper flakes were found on September 5 to contain iron scrap from the US. In the Ops E-Waste from August 17 to October 4, Customs discovered 107 containers with 2,118.91 tons of e-waste worth MYR5.59 million (\$1,321,365 million US dollars), with MYR558,579.18 (\$132,000 US dollars) in duties. The containers were identified when they were put through scanning machines.
- iv. Several months later, Customs followed up with a press statement February 18, 2025,⁶¹ reporting that in five months from August to December 2024, their Special Operations E-Waste seized 336 containers suspected of carrying e-waste. Out of that number, 306 containers were verified to be e-waste and were handed over to the DOE, which would then issue order notices for the containers to be returned. Cases of fraud or false declarations involving scrap metals were dealt with under the Customs Act.
- v. On February 20, 2025, the DOE then announced that 462 containers were held at ports in 2024, with 47 held in 2023. 140 of the containers have since been sent back, and the remainder are being prepared to be sent to their countries of origin. If Customs detains containers suspected of carrying e-waste, the DOE is called in to verify the shipment and for further investigations.⁶²
- vi. The environment minister attributed the large seizure of containers in 2024 to cooperation with BAN. At a speech made in the Malaysian Parliament on March 6, 2025, he noted that 2024 saw a massive increase in e-waste containers seized, with 329 containers. 2025 saw 15 containers being seized as of February.⁶³

58. <https://www.nres.gov.my/ms-my/pustakamedia/KenyataanMedia/KENYATAAN%20MEDIA%20KERAJAAN%20GIAT%20BANTERAS%20KEMASUKAN%20HARAM%20E-WASTE%20DAN%20SKRAP%20LOGAM%20DI%20PELABUHAN%20NEGARA.pdf>

59. <https://www.thestar.com.my/news/nation/2024/10/12/malaysia-still-a-transit-hub-for-illegal-ewaste-disposal-says-nik-nazmi>

60. <https://www.nst.com.my/news/nation/2024/10/1119461/customs-dept-work-police-identify-recipients-over-rm6m-e-waste-shipments>

61. [https://www.customs.gov.my/ms/Muat%20Turun%20Hebahan/18.2.2025%20-%20SIARAN%20MEDIA%20JKDM%20HQ%20BIL.%206%202025%20\(E-Waste\).pdf](https://www.customs.gov.my/ms/Muat%20Turun%20Hebahan/18.2.2025%20-%20SIARAN%20MEDIA%20JKDM%20HQ%20BIL.%206%202025%20(E-Waste).pdf)

62. <https://www.thestar.com.my/news/nation/2025/02/20/over-500-containers-inspected-for-imported-e-waste-says-doe>

63. Parliament speech by minister of environment, March 6, 2025. <https://www.parlimen.gov.my/hansard-dewan-rakyat.html?uweb=dr&arkib=yes>

- vii. Customs are intensifying efforts to tackle false declarations and smuggling by carrying out physical inspections based on intelligence and strategic collaborations from within and outside the country. Each physical inspection costs from MYR500-700 (\$118 - 165 US) and this sum will be charged to the importers by the port operator. From August 2024 to February 2025, Customs carried out Special Operations E-Waste in Port Klang and found 348 out of 389 containers holding e-waste. From January 2024 to February 2025, 26 containers of e-waste were also seized in the Penang port.
- viii. On May 19, 2025,⁶⁴ the environment minister elaborated that since March 14, 2024, the Selangor Customs seized 354 containers suspected of carrying e-waste and plastic waste, based on information received from BAN. There were still containers that were yet to be opened and inspected, and enforcement and technical agencies including the DOE, the solid waste department (JPSPN), solid waste corporation (SWCorp) and SIRIM Berhad, together with Customs will continue the inspections.
- ix. From January 1 to May 13, 2025, the DOE inspected 179 containers suspected of carrying e-waste. They verified that 122 (68%) containers were indeed carrying e-waste, with importers making false declarations. 119 notices were issued to the importers under sections 31 and 37 of the EQA, ordering the importers to return the containers to the country of origin. They reiterated that this is in line with the Basel Convention, where prior informed consent from the DOE is required for all imports, exports, transit, or transshipment of e-waste.
- x. The statement also announced tighter regulations for plastic waste. Even if the plastic waste was imported with import permits, properly declared as HS Code 3915, the solid waste department would verify if the conditions for import permits were met. If no, the import permit will be suspended, and JPSPN will inform the DOE that the container needs to be returned to the country of origin, and an order will be issued to the importer to return the container. The DOE would inform the Competent Authority of the country of origin about the return of the container.⁶⁵



Link: [CNA, July 5, 2024, Illegal Waste Imports to Malaysia](#)

64. <https://www.nres.gov.my/ms-my/pustakamedia/KenyataanMedia/20250519%20KM%20-%20%20%20KERAJAAN%20KOMITED%20BANTERAS%20KEMASUKAN%20SISA%20SECARA%20HARAM%20KE%20DALAM%20NEGARA.docx.pdf>

65. *ibid.*

BAN Operation Can Opener Alerts of Suspect Containers Carrying e-waste to Malaysia, 2024-2025

No.	Estimated Date of Arrival	Shipping Lines	Number of Containers
1	March 29 – 30, 2024	COSCO, CMA CGM	134
2	April 5 - 8, 2024	COSCO, CMA CGM	142
3	April 15, 2024	COSCO, CMA CGM	58 47 (unloaded in Singapore)
4	June 4, 2024	HMM	6
5	June 15 - 23, 2024	One, HMM, Maersk, HMM	25
6	June 15 - 23, 2024	One, HMM	10
7	June 26 - 30, 2024	One, HMM, Maersk	31
8	July 16, 2024	HMM	34
9	August 10 - 20, 2024	CMA CGM, Hapag Lloyd, Yang Ming	28
10	November 24 - December 10, 2024	Yang Ming, MSC	9
11	December 6 - 22, 2024	Hapag Lloyd	7
12	December 13 - 16, 2024	Hapag Lloyd, Yang Ming	16
13	January 3 - January 11, 2025	OOCL, Hapag Lloyd, MSC	22
14	February 12 – 17, 2025	Yang Ming, Hapag Lloyd, MSC	6
15	March 13 - April 3, 2025	CMA CGM, Evergreen, Hapag, Lloyd, HMM, Maersk, MSC, One	408
	TOTAL CONTAINERS		984

RAIDS AT ILLEGAL RECYCLING FACTORIES

In addition to intercepting and occasionally returning containers at ports, the Malaysian government has escalated enforcement against unlicensed factories receiving e-waste. Whereas past efforts were more ad hoc, recent years have seen larger and more coordinated raids following port seizures. These facilities are frequently reported to employ undocumented foreign workers with limited protective equipment and few pollution controls. Authorities have noted that many sites were operating without the required permits, in violation of Malaysia's employment, immigration, and environmental laws. Multiple government agencies, including the police, Immigration Department, Customs, and DOE, have acknowledged that public tip-offs have been instrumental in initiating raids.

The Customs Department announced in August 2024 that they would begin better collaboration with the police to investigate the endpoints of the smuggling of e-waste into Malaysia. That month, illegal electronic waste processing plants caught the attention of the police following massive raids in the southern state of Johor. The Inspector-General of Police said the locations of these illegal plants would be investigated also by the Anti-Money Laundering (AMLA) Criminal Investigation Unit at the federal police headquarters, Bukit Aman.⁶⁶ The police force is crucial in gathering intelligence at illegal facilities, with the resources and skills to carry out months of investigations and surveillance, before conducting raids.⁶⁷

The involvement of the police led to major arrests. In August 2024, a man with a Datuk title (an honorific bestowed by the head of a royal family) was among 45 foreigners and 10 locals arrested, following the first phase of the federal police's crackdown on illegal e-waste factories across four states (Selangor, Pahang, Negeri Sembilan, Johor), titled Operation E-Waste. Asset seizures were valued at MYR43.10 million.

SUNGAI SIPUT, PERAK, MALAYSIA, 15 Feb 2025 - Northern Brigade Commander, General Operation Force, Senior Assistant Commissioner Shahrul Hashim showed the illegally disposed electrical and electronic waste (e-waste) and seized various machinery worth RM1.3 billion in a raid carried out at a factory on Jalan Sungai Siput-Kuala Kangsar, Perak. Picture by Utusan Malaysia



66. <https://www.nst.com.my/news/nation/2024/10/1119461/customs-dept-work-police-identify-recipients-over-rm6m-e-waste-shipments>

67. <https://www.thestar.com.my/news/nation/2024/03/21/cops-end-illegal-ewaste-goldmine>



SUNGAI SIPUT, PERAK, MALAYSIA, 15 Feb 2025 - Northern Brigade Commander, General Operation Force, Senior Assistant Commissioner Shahrudin Hashim showed the illegally processed electrical and electronic waste (e-waste and e-plastics) and seized various machinery worth RM1.3 billion in a raid carried out at a factory on Jalan Sungai Siput-Kuala Kangsar, Perak. Crude melting of plastics in this manner is an extremely hazardous occupation. Picture by Permission from Utusan Malaysia.

A total of 184 personnel from AMLA and the GOF (General Operations Force) conducted the operations at the seven locations following tip-offs and intelligence gathered.⁶⁸ The processing plants were suspected to be owned by people involved in money laundering syndicates, with many owned by foreigners. Most of the workers are migrant workers with many overstaying their work permits. Often the factories do not have any licenses, and are situated in the midst of oil palm plantations or in the forest. A total of 44 illegal e-waste factories were subjected to enforcement action from 2023 to December 31, 2024, with eight completely shut down.⁶⁹

From February 14 to 16, 2025, the police and the DOE led other agencies in a major joint operation titled Op Hazard, involving 765 police officers and personnel and 51 DOE staff. 47 premises were inspected, 15,764.9 metric tons of e-wastes were seized, estimated at a value of MYR55 million (US \$13 million). Of the 47, 30 premises were found to be illegal, seven were scrapyards, six were licensed by the DOE, and three were licensed by the local authorities, with one being an illegal warehouse.³⁷ Equipment Operation Detention orders were issued so the equipment cannot be used, as the premises had no pollution controls, 59 notices and 27 compounds were issued over several charges under the EQA. 52 investigation papers were opened, to be brought to court.⁷⁰ In these raids, an illegal e-waste processing plant was found involved in processing ammunition, bullet projectiles, and shell casings.⁷¹ The Malaysian Anti-Corruption Commission (MACC) also detained some government officers in this Op Hazard operation over allegations of bribery.⁷²

68. <https://www.nst.com.my/news/crime-courts/2024/08/1090854/police-crackdown-illegal-e-waste-factories-4-states-55-held-watch>

69. https://www.nst.com.my/news/nation/2025/02/1176671/nik-nazmi-action-taken-against-44-illegal-e-waste-factories#google_vignette

70. <https://www.facebook.com/doe.gov.my/posts/pfbid02XGB6eMfr7cD8XPu4fAz6ni7jGmksqvPgVt4pVE2EFkqM.JpqR6MBuozvbEDK5g45I>

71. <https://www.nst.com.my/news/crime-courts/2025/02/1175521/50-tonnes-ammunition-shell-casings-found-raid-e-waste-factory>

72. https://www.bharian.com.my/berita/nasional/2025/03/1368685/pihak-lupus-e-waste-secara-haram-didakwa-ikut-amla-poca?utm_source=insider&utm_medium=web_push&utm_campaign=05032025-pihak_lupus_e-waste_secara_haram_didakwa_ikut_amla_poca&webPushId=MTk1MjI%3D#go

Raids on illegal facilities, some recurring ones, took place throughout the year, with some facilities found to be hiring teenagers. Of note was Op X on February 24, 2025 and Op Hazard 2.0 on June 16 to 17, 2025. Op X was carried out in Selangor and Johor, and a company owner and a trading officer were among 16 individuals detained by the MACC for investigation into the bribery of enforcement officers. This was a joint operation among DOE, MACC and the Immigration Department, based on intelligence collected over three months.⁷³ The facilities in both states were later revealed to be part of a syndicate of e-waste processing facilities. By March, a total of 26 people were arrested including nine enforcement officers, allegedly due to their acceptance of one-off bribes of between MYR1,000-20,000 (\$237- \$4,725 US dollars) in exchange for not taking action against e-waste factories. In addition, 61 bank accounts were frozen with balances of up to MYR15 million (3.5 million US dollars). The immigration department also detained 420 migrant workers in the e-waste premises.⁷⁴

For Op Hazard 2.0,⁷⁵ this time, the operation was extended to 10 states and 181 DOE enforcement officers, together with the GOF, Federal Reserve Team, Wildlife Crime Bureau and other police officers. They inspected 69 premises and seized 2,069.31 metric tonnes of e-wastes, valued at MYR11.6 million (2.75 million US dollars). 21 premises were found to be operating illegally, 12 were not licensed to process e-waste, seven were licensed under the DOE, and 29 were scrapyards. Unfortunately, the reports did not detail whether smuggled e-waste was found on the premises, and whether there are any investigations into the linkages between the trafficked e-waste seized at the ports and the premises raided. Nevertheless, it appears that the e-wastes from abroad is being processed even by licensed facilities.

59 notices were issued to 40 premises for follow-up action, 24 Equipment Operation Detention orders were issued, and 18 compounds or immediate fines were issued for mismanagement of hazardous waste. 25 investigation papers were opened over several offenses including failure to adhere to licensing conditions, storage of hazardous waste without authorization, failure to obtain written approval from the Director General of the DOE, failure to present an Environmental Impact Assessment report, and placement of hazardous waste without approval. Below are some images of what happens to the wastes that managed to enter the country to be illegally processed and residues disposed of in the country.

Below are images of some of the clandestine sites that are the endpoints of the shipments documented in this report. Such sites are often situated along waterways or within or on the perimeters of palm plantations.



*Unmarked waste processing scrapyards close to residential homes in Sijangkang, Selangor.
Copyright BAN, 22 June 2024.*

73. <https://www.sinarharian.com.my/article/714532/berita/semasa/bayar-penguat-kuasa-lindung-perniagaan-e-waste---sprm>

74. <https://www.sinarharian.com.my/article/715679/berita/semasa/ada-kilang-e-waste-di-segamat-telok-panglima-garang-rangkaian-sama---sprm>

75. <https://dmedia.penerangan.gov.my/upload/km/19062025.1164650310.pdf>



*Overloaded waste processing plant in Telok Gong, Selangor near Port Klang.
Copyright BAN, November 6, 2023.*



*Smoke lofting over residences in Sijangkang, Selangor from illegal dumpsite where e-wastes burned for 19 days.
Photo Credit: Sijangkang resident. July 24, 2024.*

THE LAW

The export of hazardous e-waste to developing countries is both harmful to people and the environment, and in many cases is likely prohibited by international and national laws. However, the question of legality is ultimately a determination made by a competent government authority, typically through a judicial or administrative proceeding. While BAN maintains an informed understanding of international waste trade law, we do not

categorize any specific shipment as “illegal” unless it has been formally determined as such by a court or relevant government authority. Instead, throughout this report, as noted earlier, we use the term “likely illegal trade” to describe exports that, based on publicly available evidence, appear inconsistent with applicable national legislation or international law, including the Basel Convention.

THE BASEL CONVENTION

The Basel Convention (entry into force in 1992)⁷⁶ from which BAN takes its name, is an international treaty designed to prevent the uncontrolled export of hazardous wastes, in particular to developing countries. It is legally binding on all its member countries, referred to as Parties. Currently, 190 countries and the European Union are Parties to the Basel Convention, leaving only 6 countries that are not Parties (including the United States).⁷⁷

EXPORT PROHIBITIONS

In 1995, the Basel Convention adopted a decision to amend the Convention to prohibit all exports of hazardous wastes moving from Annex VII countries (EU, OECD Parties, and Liechtenstein) to non-Annex VII Parties.⁷⁸ This measure, known as the Basel Ban Amendment, entered into force in December 2019. Today, the Amendment is now legally binding on 104 Parties.⁷⁹ Much can be learned about this important amendment by reading our Guide to it, co-authored by BAN and IPEN (The International Pollutants Elimination Network).⁸⁰

Another important ban exists in the Basel Convention, and that is the Party to non-Party ban found in the text of the Convention⁸¹, which forbids trade between Parties and non-Parties (such as the United States) unless a valid Article 11 agreement exists that is equivalent or stronger than the environmental controls of the Convention itself (see below for more on how these agreements may or may not apply).

76. <http://www.basel.int/>

77. https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-3&chapter=27&clang=_en

78. <http://www.basel.int/Implementation/LegalMatters/BanAmendment/Overview/tabid/1484/Default.aspx>

79. https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-3-a&chapter=27&clang=_en

80. https://wiki.ban.org/images/4/4e/BAN_IPEN_Basel_Ban_Amend_Guide_Nov2019.pdf

81. Party to non-Party Ban, found in the Basel Convention at: Article 4, para. 5; Exception found at Article 11.

PRIOR-INFORMED-CONSENT

If a ban does not exist, the Basel Convention requires the control procedure known as Prior-Informed-Consent (PIC). Under PIC, an exporter of a Basel controlled waste (e.g. hazardous or Annex II waste) must notify their government of the intent to export. If the exporting country agrees to the export, it in turn must notify the importing government and obtain its formal consent to proceed with the export. Exports without notification or consent, or those based on false information, are deemed illegal traffic under the Convention. Illegal traffic is considered criminal.

THE E-WASTE AMENDMENTS (2025)

In 2021, the Basel Convention passed the e-waste amendments⁸² that fundamentally altered the older definitions of which e-wastes would be controlled under the Convention. These amendments went into active force at the beginning of 2025. BAN, together with SERI (R2) produced a webinar⁸³ explaining the Amendments and likewise has produced an FAQ⁸⁴ to explain how they apply. These amendments in particular affect the transboundary movements of all e-wastes from and into the United States due to the Party to non-Party ban noted above. A new listing of controlled e-waste known as Y49, consisting of non-hazardous electronics that includes all used electronic equipment, components and residual material derived from processing equipment or components is now controlled waste. Because of this, it is not lawful for Basel Parties to trade in Y49 with the United States (a non-Party). Additionally, the 27 European Union countries chose to ban the export of Y49 to developing countries

as part of their implementation of the Basel Ban Amendment. For Basel Parties, Prior-Informed-Consent is the default control procedure. The new listing Y49 is not impacted by the Basel Ban Amendment.

In sum, the new amendments require Parties to consider all electronic equipment, components, and residual material from the processing of electronic equipment or components, to be controlled waste under the Convention. Under the new amendments, e-wastes will either be controlled as A1181 (hazardous e-waste) or Y49 (non-hazardous e-waste for special consideration). The only exceptions to the new controls would be wastes that are already listed in Annex IX as non-hazardous commodity-like material such as non-dispersible metal scrap (B1010), or as wastes for special consideration listed on Annex II such as contaminated or mixed plastic waste (Y48).

82. [Find report of the COP15 meeting August 8, 2021 here and look for Decision 15/18.](#)

83. <https://e-stewards.org/webinars/?playlist=cb943d2&video=413cb1a>

84. https://wiki.ban.org/images/b/b2/Frequently_Asked_Questions_About_the_New_e-waste-Jan20-Update.pdf

HOW E-WASTE IS NOW DEFINED

Under the Convention, Electronic Equipment is defined (in the e-waste Technical Guidelines) as anything that needs electrical circuits to function. Wastes are defined as any material moving to an Annex IV destination. Annex IV lists various types of recovery and disposal operations. So any Electronic Equipment, components, or residues therefrom moving to an Annex IV destination is considered e-waste. If it is hazardous electronic wastes – that contains listed hazardous constituents found on Annex I of the Convention and at the same time possesses listed hazardous characteristic found in Annex III, it will be listed as A1181. It is widely considered based on these lists that equipment or parts containing lead-soldered circuit boards, mercury-bearing LCDs or switches, cathode ray tubes, and batteries (containing lead, cadmium, or mercury, or flammable solvents) are among the commonly considered hazardous e-wastes. More on the subject of what is considered hazardous e-waste can be found in the Basel e-Waste Technical Guideline⁸⁵ which has been adopted by the Parties on a provisional basis.

The listing Y49, which is also to be controlled, is defined as being all other electronics (not A1181) (e.g. non-hazardous). In this way, today, following the new Amendments entry into force on January 1, 2025, virtually all e-waste cannot be imported from the United States by Basel Parties absent a special Article 11 agreement. Most countries of the world including e-waste target countries, Malaysia, Indonesia, Thailand, and United Arab Emirates, are Basel Parties.

What follows is a quick review of the national legal status of waste import and export for the US and other key the countries involved in the trade this report identifies as well as one US state involved in this report.

US LAW

THE ONLY DEVELOPED COUNTRY THAT FAILS TO CONTROL E-WASTE EXPORTS

The United States is the only developed country in the world that is not a Party to the Basel Convention. Indeed, they are one of only two countries, together with Haiti, that signed the Convention in 1989 (signaling intent to ratify) but never actually joined the rest of the world to become a Party. Today the Basel Convention has been ratified by 190 countries – all but a handful of nations and by the European Union. The US joins, East Timor, Fiji, Haiti and South Sudan as the remaining few that have failed to ratify. Further, the United States has also never supported the Basel Ban Amendment despite its widespread global support from European countries and developing countries. As early as 2008 the Government Accountability Office (GAO), the investigative arm of the U.S. Congress responsible for internal audits and review, released a scathing critique against the U.S. government's failure to control exports of hazardous e-wastes.⁸⁶ Today, 17 years later, the problem continues with massive volumes of hazardous electronic waste flooding the Southeast Asia. The U.S. as renegade country in terms of the Basel Convention has recently been cited by Malaysian authorities as a real problem for them.⁸⁷

The only U.S. federal environmental legislation that has even a small impact on the export of e-waste from the U.S. to developing countries is known as the "CRT Rule" found in the Resource Conservation and Recovery Act of 1976, as amended (RCRA). This rule only governs some limited restrictions on the export of cathode ray tube (CRT) monitors or CRT glass.⁸⁸

85. [Technical guidelines on transboundary movements of electrical and electronic waste and used electrical and electronic equipment, in particular regarding the distinction between waste and non-waste under the Basel Convention \(E-waste\) \(scroll down to find\)](#)

86. <http://www.gao.gov/products/GAO-08-1044>

87. https://www.nst.com.my/news/nation/2025/02/1180409/possible-gaps-enforcement-one-reason-malaysia-e-waste-dumping-ground#google_vignette

88. <https://www.epa.gov/hw/final-rule-revisions-export-provisions-cathode-ray-tube-crt-rule>

The CRT Rule requires that anyone who exports CRTs for materials recovery or recycling (dismantling) must obtain notification and consent from the receiving foreign government via the U.S. EPA prior to export and pre-register with the EPA. Additionally, the U.S. controls exports of spent lead acid batteries (SLABs) and also requires prior informed consent for these. Prior notification and consent is also required for the export of what are considered to be “Universal Wastes” by federal statute. Universal Wastes are certain post-consumer wastes which would normally be considered hazardous, but are instead designated as Universal Wastes to facilitate their proper recycling and management. However, most electronic waste is not designated by the federal government as Universal Waste. Even LCD monitors containing mercury-laden cold cathode fluorescent lamps (CCFLs) are not Universal Waste

despite the fact that they contain lamps and mercury-bearing equipment which are two of types of Universal Waste. For some reason, which makes little environmental sense, when these same lamps are inside of an electronic device they are not considered a Universal Waste, but when you remove them they are.

States can certainly designate materials as Universal Wastes beyond the federal listings. California, for example, considers LCD screens to be a Universal Waste. However, state designated Universal Wastes are not subject to the federal export restrictions under RCRA. This is an unfortunate loophole in the law. States, due to the commerce clause in the United States constitution, are not allowed to regulate foreign trade.⁹⁰

Thus, unlike all other developed countries in the rest of the world, computers, LCDs,

printers etc. and most other e-wastes are not subject to any environmentally based export controls by the United States. Even though the U.S. government is well aware that exports leaving U.S. shores are likely to be illegal for our trading partners to import, and cause tremendous harm upon arrival, the U.S. government does little to control their export.

Being a non-party nevertheless has a major legal impact on those doing business in the United States that might wish to trade with other countries. Almost every country in the world is a Party to the Convention and thus barred from trading with the US due to its non-Party status. As noted, the exceptions to the rule are where countries, including possible non-Parties, join in a side agreement known as an Article 11 agreement.

ARTICLE 11 AGREEMENTS OF THE UNITED STATES

Article 11 agreements are allowed to exist between Parties and non-Parties as long as they are as rigorous and environmentally sound as the Convention itself. The U.S. is currently not involved in any Article 11 agreements that would allow exports from the U.S. to any developing (e.g. non-OECD) countries. Noting that the Party to non-Party ban has an exception for valid Article 11 Agreements, it is important to understand the agreements that the US has in place that could apply with respect to the new e-Waste amendments and a possible exception to the Party/non-Party trade ban.

The U.S. has entered into agreements with Canada, Mexico, and the group of 38 member states of the Organization for Economic Cooperation and Development (OECD) – considered some of the world’s most developed countries. Whether the OECD accord can apply has been complicated by objections to the new listings by the government of Japan, preventing consensus adoption of the Basel. More information about the possible application of these agreements to US exports of e-waste can be found in BAN’s FAQ on the e-Waste Amendments.⁹¹ The United States has entered some agreements with some developing countries (e.g. Malaysia, El Salvador), these are only for allowing wastes to be imported to the US, not exported.

89. 40 CFR part 262, subpart H

90. Article I, Section 8, Clause 3, of the U.S. Constitution give US Congress the sole right to regulate foreign trade.

91. https://wiki.ban.org/images/b/b2/Frequently_Asked_Questions_About_the_New_e-wasted-Jan20-Update.pdf

IMPLICATIONS OF US EXPORTS OF E-WASTE

There are currently 190 countries that are Parties to the Convention. Virtually all trading partners of the United States, including Malaysia, Indonesia, Vietnam, United Arab Emirates and China including Hong Kong are Parties. These countries are not allowed to import any Basel controlled wastes (hazardous or wastes for special consideration) from the United States. The United States as a non-Party exporting country does not have to prohibit export, but the importing Basel countries must prohibit the import from the non-Party. This means that as soon as the containers are loaded at a U.S. port and sent on shipping line vessels, as those ships leave U.S. territorial waters, they may then be considered illegal traffic as defined by the Basel Convention's Article 4.5 -- the Party to non-Party ban. Illegal traffic under the Convention is considered a criminal act.⁹²

U.S. exporters are not, however, immune from consequences. First, they must realize that they place their trading partners in criminal jeopardy. Further, their exports are likely to be seized or confiscated as part of the Convention's implementation. The Convention calls for illegal exports to be returned to the exporter unless an alternative and legal and environmentally sound means of disposal can be undertaken. International bodies including Interpol, the World Customs Organization, and the United Nations Office on Drugs and Crime can become involved whenever any illegal traffic is cited.

Further, even in the United States where the Basel Convention is not in force, exporters of e-Waste have been prosecuted for more traditional crimes such as fraud and tax evasion. BAN's investigations regarding illegal export of e-waste have been instrumental in sending executives of Executive Recycling (2012), Intercon Solutions (2016) and Total Reclaim (2019) to jail primarily for fraud when the companies lied to governments or their customers, by claiming they did not export to developing countries.

FALSELY DECLARED EXPORTS

As noted already in this report, available trade data shows a substantial share of electronic waste exports that appear to be misdeclared under the Harmonized Tariff System (HS). This raises concerns about potential legal liability. Many shipments we see coming from companies presenting themselves as electronic waste recyclers are not reportedly shipping under the established HS codes designated for "Electrical and Electronic Waste and Scrap" -- HS 8549. Instead, they are frequently declaring the e-wastes as commodity metals or as working electronic equipment.

The trade data used in this report comes primarily from carrier bills of lading (BOL) and import-country reporting, as compiled by commercially available trade data services and made available to BAN by Materials Research L3C. While this dataset is not always the same as the U.S. government's Automated Export System (AES) records- which are not publicly accessible- it is unlikely that exporters would use materially different descriptions for carriers than they provide to U.S. authorities. Consequently, the vast discrepancies observed in trade data represent clear red flags suggesting potential misclassification.



92. Article 4, paragraph 3.

The proper codes for e-waste are the HS-2022 six-digit subheadings under heading **8549 – “Electrical and electronic waste and scrap.”** These cover a range of categories:

- » **8549.11** — Waste and scrap of lead-acid accumulators; spent lead-acid accumulators.
- » **8549.12** — Other (non-lead-acid) spent cells/batteries/accumulators containing lead, cadmium or mercury.
- » **8549.13** — Spent cells/batteries/accumulators sorted by chemical type, not containing lead, cadmium or mercury.
- » **8549.14** — Spent cells/batteries/accumulators unsorted, not containing lead, cadmium or mercury.
- » **8549.19** — Other waste and scrap of primary cells, primary batteries and electric accumulators (not covered above).
- » **8549.21** — E-waste used principally for the recovery of precious metal, containing primary cells/batteries/accumulators, mercury-switches, CRT glass/other activated glass, or components containing Cd/Hg/Pb/PCBs.
- » **8549.29** — Other e-waste used principally for the recovery of precious metal.
- » **8549.31** — Other electrical/electronic assemblies and printed circuit boards, containing primary cells/batteries/accumulators, mercury-switches, CRT glass/other activated glass, or components containing Cd/Hg/Pb/PCBs.
- » **8549.39** — Other electrical/electronic assemblies and printed circuit boards (not containing the hazardous items above).
- » **8549.91** — Other e-waste, containing primary cells/batteries/accumulators, mercury-switches, CRT glass/other activated glass, or components containing Cd/Hg/Pb/PCBs.
- » **8549.99** — Other e-waste (residual “other”).

These new listings entered into force globally in 2022 and were approved by President Biden⁹³ on a national basis on December 23, 2021. These 6-digit titles are harmonized globally. Countries may add extra digits/wording nationally.

Despite these updates, U.S. Census Bureau data⁹⁴ show little use of HS8549 by U.S. exporters. In 2024, the data indicates 55,624 metric tonnes/year (about 4,635 metric tonnes/month) of non-battery (8549210-990) HS8549 e-waste going to any destinations worldwide. Exports reported to non-OECD countries from the US of non-battery HS8549 were 165 metric tonnes/month⁹⁵ and

exports to Malaysia were just 21 metric tonnes/month. In the table below, BAN’s data and extrapolations suggest far higher volumes are actually being shipped.

The significant gap between official filings under HS 8549 and observed shipment volumes strongly suggests widespread misclassification. If exporters knowingly misdeclare shipments, this may expose them to liability under U.S. law, including the Foreign Trade Regulations, false statements statutes, or smuggling provisions, depending on the circumstances

93. <https://www.govinfo.gov/content/pkg/FR-2021-12-28/pdf/2021-28334.pdf>

94. <https://usatrade.census.gov/index.php?do=login>

95. Based on US Census Bureau figures for 2024.

Use of HS Code 8549 (non-battery listings) in US Census Bureau Data compared to BAN data and estimates				
	Using HS8549		BAN's Total estimated e-waste exports	
	Based on US Census / All Exporters	Brokers of Shame (as recorded by BAN)	Brokers of Shame	Total US e-waste exporters (estimate)
To the World	4,635 mt/mo	not compiled	not compiled	not compiled
To non-OECD	165 mt/mo	0 mt/mo	6,519 mt/mo	33,021 mt/mo
To Malaysia	21 mt/mo	0 mt/mo	5,052 mt/mo	25,590 mt/mo

Examples of the HS codes commonly being used for e-waste exports by exporters or derived from descriptions by trade data services:

Primary Raw Material commodity codes used:

- » **74** Copper and articles thereof
- » **7401** Aluminum, unwrought
- » **7410** Copper foil
- » **760120** Aluminum alloys
- » **7406** Copper powders and flakes
- » **7603** Aluminum powders and flakes
- » **740610** Powders of non-lamellar structure
- » **760320** Aluminum powders of lamellar structure
- » **76** Aluminum and articles thereof

Commodity (new) electronic equipment categories commonly used:

- » **8443** Print mach incl ink-jet mach ancil t prnt pt nesoi
- » **85** electric machinery etc; sound equip; tv equip; pts
- » **8471** Automatic data process machines; magn reader etc
- » **852990** pts, ex antenna, for trnsmsn, rdr, radio, tv, etc nesoi
- » **847130** Port digtl automatic data process mach not > 10 kg
- » **00** Others
- » **847330** Parts & accessories for ADP machines & units

Because the World Customs Organization established HS 8549 specifically for electronic scrap and waste, the use of unrelated metal commodity codes, particularly those describing new product or single element metals, does not accurately reflect the nature of the mixed e-waste shipments. This raises the question: Is such misclassification illegal and, if so, what are the consequences?

Exporters from the United States, shipping materials with a value over \$2,500, are required to submit the **Electronic Export Information (EEI)**, through the **Automated Export System (AES)**.⁹⁶ In Schedule B, they are required to declare the proper HS code for their export.⁹⁷ Intentionally misclassifying or omitting the proper HS code could potentially violate various U.S. laws or regulations, including:

» **Foreign Trade Regulations (15 CFR Part 30):**

- » Anyone who “knowingly fails to file or knowingly submits, directly or indirectly, to the U.S. Government, false or misleading export information through the AES” can be subject to criminal penalties of up to a \$10,000 fine and/or imprisonment up to five years “for each violation”, as well as forfeiture penalties.⁹⁸ Civil penalties for “false/misleading information” can run up to \$10,000 per violation with additional forfeiture penalties.⁹⁹

» **False Statements (18 U.S.C. § 1001):**

- » Knowingly and willfully providing false information on “any matter within the jurisdiction of the executive, legislative, or judicial branch of the Government of the United States” can lead to fines and/or imprisonment of up to five years.

» **Smuggling Goods from the U.S (18 U.S.C. § 554):**

- » “Whoever fraudulently or knowingly exports or sends from the United States, or attempts to export or send from the United States, any merchandise, article, or object contrary to any law or regulation of the United States, or receives, conceals, buys, sells, or in any manner facilitates the transportation, concealment, or sale of such merchandise, article or object, prior to exportation, knowing the same to be intended for exportation contrary to any law or regulation of the United States, shall be fined under this title, imprisoned not more than 10 years, or both.”¹⁰⁰

» **Export Control Reform Act of 2018 (50 U.S.C. §§ 4801–4852) / Export Administration Regulations (15 CFR Parts 730-774):**

- » These could apply to certain types of e-waste that may have security-related applications.
- » The regulations provide that “No person may make any false or misleading representation, statement, or certification, or falsify or conceal any material fact, either directly to BIS or an official of any other United States agency, or indirectly through any other person [...]” “In connection with the preparation, submission, issuance, use, or maintenance of any ‘export control document’ [...]”.¹⁰¹
- » “Export control document” includes “Electronic Export Information (EEI) on the Automated Export System (AES) presented in connection with shipments to any country”.¹⁰²
- » Violations could result in criminal sanctions of up to a \$1,000,000 fine and/or twenty years in prison.¹⁰³ Violations could result in civil sanctions of “A fine of not more than \$300,000 or an amount that is twice the value of the transaction that is the basis of the violation with respect to which the penalty is imposed, whichever is greater” for each violation.¹⁰⁴

While BAN’s trade data is derived from carrier bills of lading and import-country records (not the confidential AES filings), it is unlikely that exporters would provide materially different descriptions to carriers than to U.S. authorities. And given what we know about the stock in trade of the brokers we have studied in this report, there appears to be widespread discrepancies between the collection of electronic scrap and what is reported by exporters in their shipments. This raises red flags of potential false filings. If misdeclarations are indeed present in AES filings, as noted, they could be prosecutable under U.S. law.

96. See 15 CFR 758.1(b)(5)

99. See 15 CFR § 30.71(b)

102. See 15 CFR § 772

97. <https://www.census.gov/foreign-trade/schedules/b/2025/introduction.pdf>

100. See 18 U.S.C. § 554(a)

103. See 50 U.S.C. § 4819(c); see also 15 CFR § 764.3(a)(1)(i)

98. See 15 CFR § 30.71(a)

101. See 15 CFR § 764.2(g)

104. See 15 CFR § 764.3(b)

CALIFORNIA LAW

As many of our featured Brokers of Shame are incorporated and operational in the State of California, it is important to understand whether these companies have been adhering to California law.

OVERVIEW OF E-WASTE IMPORT LAW IN CALIFORNIA

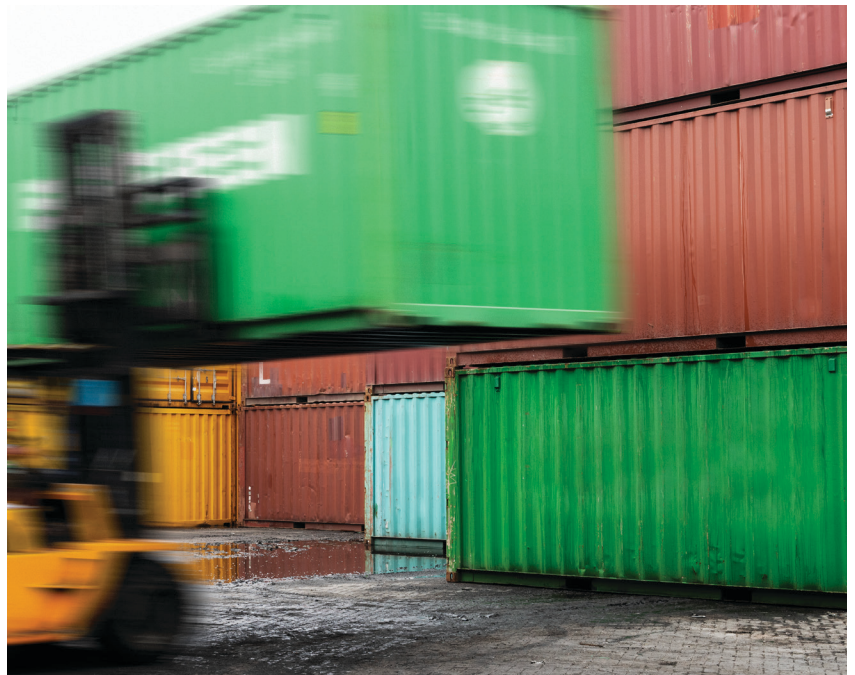
Under the Electronic Waste Recycling Act (EWRA) of 2003 (often known as SB20) we primarily discuss the concern over exportation, which we shall discuss below. However, the Act also disallows payments made into the system established by the law to recyclers for any covered electronic devices generated outside of California and subsequently brought into the state. Therefore,

while importing CEW into California is not explicitly prohibited, such waste would not qualify for state recycling incentives.¹⁰⁵ However, the lure of being paid for bringing in e-wastes from outside of California and claiming it as generated within the state is no doubt compelling, and therefore it is important for those in the program to be scrutinized for this type of possible fraud.

OVERVIEW OF E-WASTE EXPORT LAW IN CALIFORNIA

Most California e-waste is subject to exportation reporting requirements to a combination of the California Department of Toxic Substances Control (DTSC), Certified Unified Program Agencies (CUPAs)¹⁰⁶, and the US EPA, depending on the type of e-waste involved. Although exceptions exist, most e-waste is regulated in California as “universal waste” under the state’s Hazardous Waste Control Law and its implementing regulations, including basic export reporting requirements. Additional and more stringent reporting requirements apply under the Electronic Waste Recycling Act of 2003 (EWRA) if that universal waste falls into a subset of e-waste called “covered electronic waste.”

DTSC has informed BAN that “DTSC is not aware of any e-waste facilities in California that have been issued an enforcement action for exports of e-waste.”¹⁰⁷ According to DTSC’s analysis of facility-submitted annual reports, “the majority” of the e-waste handled in California either stays in the state or is shipped domestically. Moreover, DTSC has “seen an overall decrease in the total quantity of e-waste (i.e., electronic devices, CRT devices, and CRTs) and of e-waste treatment residuals being exported,” and for that e-waste that has been exported, the majority has been “non-covered electronic wastes or devices.” It is difficult to independently verify DTSC’s rosy assessment, but it appears to be contrary to our findings. Therefore, in BAN’s opinion, it is possible, if not probable, that e-waste is being exported from California without required notification to DTSC.



105. See Cal. Health and Safety Code § 42476(g)(1)(B).

106. The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) was established in 1993 to consolidate activities of six environmental and emergency response programs. See <https://calepa.ca.gov/unified-program-home/>. To implement the Unified Program, local government agencies called Certified Unified Program Agencies (CUPAs) were established, which are ultimately overseen by CalEPA, like DTSC. DTSC is responsible for administering the technical implementation of CUPAs, see <https://dtsc.ca.gov/certified-unified-program-agencies-cupa/>.

107. Email from DSTC to BAN dated February 20, 2025

E-WASTE AS CALIFORNIA UNIVERSAL WASTE

As noted, in California, most e-waste is classified as “universal waste,” which primarily comes from consumer waste streams as opposed to industrial wastes, and is considered to be a less-hazardous subset of hazardous wastes.¹⁰⁸ Universal waste is governed by the Hazardous Waste Control Law (HWCL) and its implementing regulations.¹⁰⁹ E-waste that falls under the universal waste category are referred to as “Universal Waste Electronic Devices,” or UWEDs. This waste is considered hazardous because it may contain toxic chemicals like lead or mercury but has less stringent handling requirements than other types of hazardous waste.¹¹⁰

Types of e-waste that are universal waste

The regulations on universal waste broadly define “electronic devices” that fall under its umbrella.¹¹¹ In practice, “electronic devices” covers most electronic waste, such as computers and printers, computer keyboards and other peripherals, telephones, cell phones, laptop computers and tablets, CRT devices including older televisions and computer monitors, LCD desktop computer monitors, laptop computers, LCD televisions and smart displays, plasma televisions, OLED-containing televisions, and OLED-containing desktop monitors.¹¹²

Export controls for universal waste

The key controls on exports of UWED under California state law are as follows:

- » Universal waste handlers¹¹³ must notify: (1) DTSC using the Universal Waste Electronic Devices (UWED) System¹¹⁴ 60 calendar days before the initial shipment is intended to be shipped off-site for export, and (2) also notify the CUPA having jurisdiction over the universal waste handler’s facility.
- » Provide the quantity (by count or by weight) and volume to be exported (only one notification is required per year).
- » Estimated frequency/rate, and period over which UWED will be exported.
- » All points of entry to and departure from each foreign country through which the e-waste will pass en route to the foreign destination.
- » Mode of transport
- » If the foreign destination is a destination facility that recycles the e-waste, a description of the means by which it will be recycled at the destination facility.
- » The name and site address of the foreign destination or any alternate foreign destination.
- » Additional complex requirements apply when exporting CRTs, including requirements to secure approval by the U.S. EPA.¹¹⁵

In addition, universal waste handlers’ shipment activity (destination, amounts, and types exported) must also be included in annual reports, provided they meet a relatively low volume threshold.¹¹⁶

108. There are eight types of universal waste: batteries, electronic waste, CRTs, CRT glass, lamps, mercury wastes, non-empty aerosol cans, and PV modules.

109. See Hazardous Waste Law, Health and Safety Code (section 25100 et seq.) and California Code of Regulations, Title 22, Division 4.5, Section 66260.1 et seq.

110. See California’s Universal Waste Rule, California Code of Regulations, Title 22, Division 4.5, Chapter 11, Section 66261.9.

111. “Discarded electronic devices that are hazardous solely because the device exhibits the characteristic of toxicity specified in section 66261.24 and/or are listed in article 4.1 of chapter 11 of this division may be managed as a universal waste.” 22 California Code of Regulations § 66273.3(a)(2).

112. See <https://dtsc.ca.gov/e-waste-more-information/#E-Devices> for additional examples and explanations of what is considered UWED. Exceptions are detailed in Title 22 California Code of Regulations (CCR) section 66273.3(b).

113. Universal waste handlers include generators, collectors, or recyclers. See 22 CCR 66273.9; see also <https://dtsc.ca.gov/e-waste-more-information/#Handler-Recycler>.

114. See <https://hwts.dtsc.ca.gov/uwed/>.

115. See 22 CCR § 66273.40, attached in Appendix C, Part I.

116. “An annual report is required for any universal waste handler who either: generated 11,000 lbs or more of e-waste from on-site activities and operations, accepted 220 lbs or more of e-waste from off-site sources (e.g., households, businesses, collection events) but did not perform any treatment, or treated and/or recycled any amount of electronic waste.” See <https://dtsc.ca.gov/e-waste-annual-report-frequently-asked-questions-faqs/>. For an example form, see https://dtsc.ca.gov/wp-content/uploads/sites/31/2016/01/Annual-Report-form_version-06-23-11.pdf.

Enforcement

As noted above, under California state law universal waste falls under the hazardous waste umbrella of the HWCL and its implementing regulations, including its enforcement and penalty provisions.¹¹⁷ DTSC's Enforcement Response Policy guides the agency's enforcement actions under the HWCL.¹¹⁸ As the Enforcement Response Policy notes, DTSC has broad authority under the HWCL and implementing regulations to take a wide range of enforcement actions, including informal and formal administrative enforcement actions, civil referrals to the California Office of the Attorney General, or in rare cases a criminal referral to a District Attorney, City Attorney, California Attorney General, Circuit Prosecutor, or the United States Attorney (for violations of federal law).¹¹⁹

As referenced earlier, "To date, DTSC is not aware of any e-waste facilities in California that have been issued an enforcement action for exports of e-waste." This would imply that the required reporting has been undertaken by all entities exporting UWED from their operations in California and that all of the reports were found to be compliant with relevant requirements. If enforcement actions were to occur, the potential penalties could be serious depending on the level of intentionality of the exporter and the harms caused. One possible way an exporter of UWED could violate the law is if they made any false statements or representations on any of the documents submitted to DTSC regarding exports. Fines for even "unintentional or nonnegligent" false statements or representations could result in up to a \$70,000 fine per violation.¹²⁰ If egregious, such types of statements could conceivably even result in jail time.¹²¹

In addition to potential direct violations of the HWCL and its implementing regulations, violators could also face violations of California's Unfair Competition Law (UCL)¹²², which prohibits "unlawful, unfair or fraudulent business act or practice and unfair, deceptive, untrue or misleading advertising" in connection with almost any type of business activity.¹²³

E-WASTE FALLING UNDER THE COVERED ELECTRONIC WASTE RECYCLING PROGRAM

California enacted the Electronic Waste Recycling Act of 2003 (EWRA) (SB 20, Sher, Chapter 526, Statutes of 2003)¹²⁴ to establish a funding system for the collection and recycling of certain electronic wastes known as "covered electronic waste" (CEW), which is a subset of universal waste.¹²⁵ The Covered Electronic Waste Recycling Program (Program) was developed out of the EWRA.¹²⁶ This program is administered in various ways by CalRecycle, DTSC, and the California Department of Tax and Fee Administration, and is ultimately intended to improve the recycling rates of CEW.

117. See, e.g. Cal. Health and Safety Code §§ 25180-25196.1 These provisions cover a wide range of scenarios depending on the particular circumstances of a case.

118. See https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/DTSC-OP-0006_Enf_Response_Policy.pdf.

119. See Enforcement Response Policy at 9-14.

120. See HSC § 25189(a).

121. See HSC § 25191.

122. Cal. Bus. & Prof. Code § 17200 et seq.

123. Cal. Bus. & Prof. Code § 17200

124. See <https://calrecycle.ca.gov/electronics/statutes/> for an overview of the Electronic Waste Recycling Act of 2003.

125. See <https://dtsc.ca.gov/covered-electronic-devices/> for details on what is considered Covered Electronic Device/ CEW.

126. See <https://calrecycle.ca.gov/electronics/cew/> for details on the CEW Recycling Program.

Types of e-waste that are considered CEW

A covered electronic device (CED)¹²⁷ is either:

1. A video display device with a screen size greater than four inches, measured diagonally,¹²⁸ and (2) identified in the California Code of Regulations (CCR) section 66260.201(e) and CCR Appendix X(c); or
2. Any covered battery-embedded product, which is a product containing a battery from which the battery is not designed to be easily removed from the product by the user of the product with no more than commonly used household tools.¹²⁹

The second definition above on covered battery-embedded products (CBEP) came into force on January 1, 2023, after Senate Bill 1215 was signed into law in 2022. Requirements for this program are still being developed and will be phased in through 2028.¹³⁰ The DTSC website offers no details on the types of products that are CBEP and does not include them as examples of CEW/CED. However, the definition above became effective January 1, 2023, and provides the definition of CEDs in Public Resource Code (PRC) section 42476.5, below, which provides export requirements on CEDs. Thus, a plain language reading of these two sections suggests that CBEPs have fallen under the export requirements of section 42476.5 since January 1, 2023. DTSC's own interpretations on this requirement are unknown.

Examples of CED/CEW include:

- » Cathode ray tube containing devices (CRT devices)
- » Cathode ray tubes (CRTs)
- » Computer monitors containing CRTs
- » Laptop computers with liquid crystal display (LCD)
- » LCD containing desktop monitors
- » Televisions containing CRTs
- » Televisions containing LCD screens
- » Plasma televisions
- » Portable DVD players with LCD screens
- » OLED-containing televisions
- » OLED-containing laptop computers
- » OLED-containing tablets
- » OLED-containing desktop monitors
- » LCD-containing tablets
- » LCD-containing smart displays

127. See <https://dtsc.ca.gov/covered-electronic-devices/> for an overview of CEDs.

128. See PRC § 42463 subds. (g), (h), (x).

129. See <https://calrecycle.ca.gov/electronics/embeddedbatteries/>.

130. See id.

Excluded CEDs are set forth in PRC § 42463, subsections (f)(2) and (g)(2) and include the following:

- » A video display device (VDD) that is a part of a motor vehicle, as defined in Section 415 of the Vehicle Code, or any component part of a motor vehicle assembled by or for a vehicle manufacturer or franchised dealer, including replacement parts for use in a motor vehicle;
- » A VDD that is contained within or a part of a piece of industrial, commercial, or medical equipment, including monitoring or control equipment;
- » A VDD that is contained within a clothes washer, clothes dryer, refrigerator and/or freezer, microwave oven, conventional oven or range, dishwasher, room air-conditioner, dehumidifier, or air purifier;
- » An electronic device, on and after the date that it ceases to be a covered electronic device;
- » Certain medical devices; and
- » Battery-embedded products that are certain types of medical device, that are energy storage systems, or that are electronic nicotine delivery system.

Export controls on CEW/CEDs

In addition to the reporting requirements of UWED, anyone exporting covered electronic wastes (CEWs) and devices, such as Approved Collectors or Approved Recyclers¹³¹ under the Program, must also comply with Public Resources Code (PRC) section 42476.5, which provides more stringent reporting requirements. Sixty days prior to the export of CEW, the exporter must notify DTSC, which requires the following¹³²:

- » Destination, disposition, contents, and volume of the waste or device intended for recycling or disposal.
- » Demonstrate waste/devices are being exported for purposes of recycling or disposal;
- » Demonstrate that the importation of the waste or device is not prohibited by an applicable law in the state or country of destination and that any import will be conducted in accordance with all applicable laws; as part of this demonstration, required import and operating licenses, permits, or other appropriate authorization documents shall be forwarded to DTSC.
- » Demonstrate that the exportation of the waste or device is conducted in accordance with applicable United States or applicable international law.
- » Demonstrate that the waste or device will be managed within the country of destination only at facilities whose operations meet or exceed the binding decisions and implementing guidelines of the OECD for the environmentally sound management of the waste or device being exported.
- » Demonstrate that the person attempted to locate an in-state covered electronic waste recycler and that the waste or device could not be managed by an in-state covered electronic waste recycler.

Note that these requirements above do not apply to a “component part of a covered electronic device that is exported to an authorized collector or recycler and that is reused or recycled into a new electronic component.” PRC § 42476.6.

131. The EWRA defines “Authorized collectors” and “Covered electronic waste recycler” or “covered e-waste recycler” in PRC § 42463(b) and (j). Under regulations implementing EWRA, entities that meet these definitions and whose application was approved by CalRecycle are called Approved Collectors, Approved Recyclers, an Approved Dual Entity (meaning they are both an Approved Collector and Approved Recycler), or a Designated Approved Collector (designated by a California Local Government to provide CEW collection services). See 14 CCR § 18660.5.

132. The full uncondensed list can be found in Appendix C, Part 2.

An advisory letter in response to questions submitted to DTSC interpreting these requirements was issued by DTSC in 2008 (Memo).¹³³ The Memo directly addresses a number of issues relevant to exports. The Memo's footnote 7 makes a critical observation with regard to the Basel Convention's impacts on exports out of California:

"Footnote 7: The Basel Convention is a more global international agreement dealing with the transportation of hazardous waste across international boundaries. The Convention obligates countries that have signed and ratified the Convention (Basel Party Countries) to place certain prohibitions on the export of Basel Hazardous Waste to other Basel Party Countries. However, the United States has not yet ratified the Convention or voluntarily imposed the Basel prohibitions on exporters from the United States. Consequently, until it is ratified by the United States, the Convention does not obligate the United States to impose controls on the export of any CEDs or CEWs that would qualify as Basel Hazardous Waste. But lack of United States ratification does not prevent the Basel Party Countries from barring the importation of such CEDs or CEWS. Specifically, until ratified by the United States, the Basel Convention (article 4.5) prohibits Basel Party Countries from allowing the importation of Basel Hazardous Waste from "non-Parties", such as the United States. Additionally, Article 4.4 of the Convention obligates Basel Party Countries to take appropriate legal, administrative and other measures to implement this prohibition. Consequently, even though the Convention's export controls are not yet binding on the export of CEDs or CEWs from the United States, this import prohibition, when incorporated into the law of a Basel Party Country, **would bar the entry of any Basel Hazardous Waste CEDs or CEWs exported from the United States into that country.**"¹³⁴

It is helpful here to remember what we have learned regarding exports from the U.S. under Basel. Since the U.S. is not a Basel party, any Basel Party, which is almost every other country in the world, cannot import Basel-controlled wastes from the United States unless a special side agreement known as Article 11 agreement is in force. However, the only Article 11 agreements in place for the U.S. to export waste are with Canada, Mexico, and other OECD countries, and therefore any exporter sending e-waste from the US to such non-OECD countries as Malaysia, Vietnam, Indonesia, the United Arab Emirates, Singapore, or India would be exporting outside an Article 11 agreement.

All of this background has critical implications for PRC § 42476.5(c)'s requirement that an applicant "Demonstrate that the importation of the waste or device is not prohibited by an applicable law in the state or country of destination and that

any import will be conducted in accordance with all applicable laws." As noted above, an export of Basel-controlled e-waste to a country aside from Canada, Mexico, and other OECD countries would be illegal under this section. DTSC clearly understood this in their 2008 memo, as evidenced by footnote 4 stating that "About exports to Basel Party countries, please see footnote 7 [...]", which, as detailed above, observed that it would be illegal for a Basel Party to import e-waste from the US. See 2008 Memo, footnotes 4 and 7. Today, with the advent of the new Basel Convention electronic waste amendments that went into force on January 1, 2025, even non-hazardous electronic wastes are controlled under the Basel Convention under the new listing Y49. In sum, PRC § 42476.5(c) effectively prohibits the export of e-waste to Basel Parties absent a valid Article 11 agreement, and DTSC understood this as far back as 2008.

133. See March 5, 2008 Letter from Karl Palmer, Chief Regulatory and Program Development Branch, Hazardous Waste Management Program, DTSC, to Albert Kim, https://dtsc.ca.gov/wp-content/uploads/sites/31/2020/09/FAQ_Elec_Devices_Export_a.pdf.

134. The Memo provides other relevant details on DTSC's interpretations of other key requirements relating to the exports of CED/CWA, including materials required to sufficiently demonstrate that CEW/ CED will be recycled or disposed of (Memo, at 3-4), information needed to show compliance with subdivision (c) (Memo, at 4-5), information needed to comply with subdivision (d), that exports will be in "accordance with applicable United States or applicable international law" (Memo, at 6-9), and information needed to comply with subdivision (e), which requires a showing that "electronic devices will be managed within the country of destination only at facilities whose operations meet or exceed the binding decisions and implementing guidelines of the OECD" (Memo, at 10).

EWRA Enforcement

As with universal waste, the DTSC would look to its Enforcement Response Policy to guide its enforcement strategy. The EWRA explicitly permits the EWRA and implementing regulations to be enforced by DTSC pursuant to the HWCL (HSC 25100 et seq).¹³⁵ This means that the enforcement and penalty provisions of the HWCL could also apply, as detailed above. The EWRA also added a relevant enforcement provision that allows CalRecycle or DTSC to impose a \$25,000 fine for a “false statement or representation” in a document submitted to DTSC, such as to comply with the export notification requirements.¹³⁶ As with universal waste generally, California’s Unfair Competition Law could also apply to violations relating to exports of CEW. Here, DTSC has not taken any enforcement actions on exports, and BAN is not aware of any relevant court cases.

Brokers of Shame Corporate Examples

In the table below we can see the 10 Brokers of Shame highlighted in this report that have operations in California. Two of these are participants in the Covered Electronic Waste Recycling Program as an Approved Collector, Approved Recycler, or Approved Dual Entity. Each must adhere to the requirements for universal waste exports.

Name of California Company	Approved Collector Under EWRA for Covered Electronic Waste	Approved Recycler Under EWRA for Covered Electronic Waste	Reporting Requirements Exporting of Universal Waste
ATTAN Recycling	Yes	Yes	Yes
Corporate eWaste Solutions (CEWS)	Yes	Yes	Yes
EDM	No	No	Yes
IQA Metal, Inc	No	No	Yes
GEM Lifecycle	No	No	Yes
Greenland Resources Inc. (GRI)	No	No	Yes
PPM	No	No	Yes
Semsotai	No	No	Yes

135. See Cal Pub Resources Code § 42474.5 (“Notwithstanding any other law, this chapter and all regulations adopted pursuant to this chapter may be enforced by DTSC under Chapter 6.5 (commencing with Section 25100) of Division 20 of the Health and Safety Code.”)

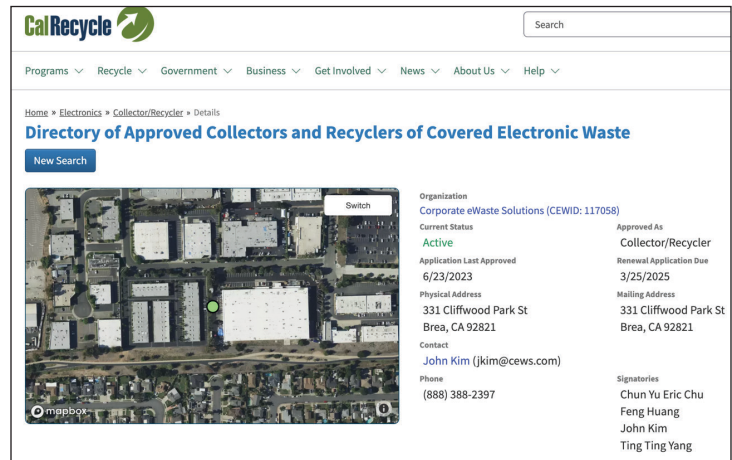
136. See Public Resources Code §§ 42474(d) and 42474.5.

Corporate eWaste Solutions: For example

Corporate eWaste Solutions is registered under the Covered Electronic Waste Recycling Program as both a collector and a recycler.

If any of the reported exports by Corporate eWaste Solutions of CEW, including from GPS, eyewitnesses of containers leaving their Brea facility, as well as commercial trade data, were in fact what they appeared to be – exports of CEW and universal waste, even in the years before the new Basel Y49 listing¹³⁷ entered into force on January 1, 2025, these exports may well have been non-compliant with California PRC 42476.5 subsections (c) and (d).

PRC 42476.5(c) requires exporters to “demonstrate that the importation of the waste or device is not prohibited by an applicable law in the state or country of destination and that any import will be conducted in accordance with all applicable laws.” As detailed above, it is impossible for such exports to be in accordance with the Basel obligations of Basel Parties.



Although this prohibition applies only to CEW, and only for participants in the EWRA which include CEWS as well as Attan. For CEWS the GPS trackers we installed in equipment passing through their hands were in several instances placed into LCD monitors, which are clearly CEWs. Regardless, the requirements applying to UWED would still apply.¹³⁸ The same analysis for Attan Recycling would apply were they to be involved in exporting CEWs to developing country Basel Parties.

Appendix C provides the full regulatory references on UWED exports and CEW/CED exports, highlighting key provisions.

MALAYSIAN LAW

BASEL CONVENTION OBLIGATIONS

Malaysia became a Party to the Basel Convention on October 8, 1993, with the Department of Environment (DOE) as the designated Competent Authority of the Basel Convention. Malaysia was an early supporter of strict controls on the movement of hazardous waste and had ratified the Basel Ban Amendment as early as 2001. The Ban Amendment does not allow any importation of hazardous wastes from Annex VII countries. Annex VII consists of member states of the OECD, the EU, and Liechtenstein.

Therefore, Malaysia is subject to all obligations found in the Basel Convention for Basel-controlled wastes, as well as to the Ban Amendment, which is now Article 4a of the Convention. Malaysia has also accepted the Plastic Waste Amendments and the E-Waste Amendments. Acceptance and national implementation, however, are two different matters. Malaysia is obliged under international law to uphold the Basel provisions, however, if Malaysia fails to implement the Basel amendments in their domestic legislation, it can make enforcing them very difficult on its own nationals.

Malaysia currently has not fully transposed the provisions of the new Amendments into domestic legislation. However, the following has been reported to the Basel Convention Secretariat:

137. See <https://www.basel.int/Implementation/Ewaste/EwasteAmendments/Overview/tabid/9266/Default.aspx>.

138. See 22 CCR § 66273.40.

Malaysia's Basel obligations are partially found within the 1974 Environmental Quality Act's Section 34B, which outlines the control of hazardous or scheduled wastes, including the placement, deposit, receipt, sending, or transiting of such waste, which are subject to written approval by the Director General of the DOE. It also outlines the offence of falsification, misrepresentation, or fraud in the transport of hazardous waste, as well as the penalties, which have recently increased.

Importantly, under this section, any unauthorized disposal or transit of hazardous waste, including e-waste, within Malaysia's land or waters, is considered a criminal offence. If convicted, offenders can face a maximum fine of RM10 million (2.73M US Dollars) and mandatory imprisonment of up to 5 years, as stipulated under the amended Environmental Quality Act (2024). The EQA is supported by a customs order on import prohibitions. Under the latest import prohibitions, any import of toxic and/or hazardous wastes, including e-waste, requires a letter of approval issued by the Director General of the DOE. The government's current policy is to not write any such letters, and in this way, completely prohibits the importation of e-waste -- a policy more strict than what is required by, but certainly allowed by, the Basel Convention.

However, in several instances, Malaysia has yet to fully align existing domestic laws with the obligations of the Basel Convention. Some examples of this include:

- i. The use of the term "Direct Reuse" is unclear in (i)(b) in the submission above. According to the Basel Convention Glossary, "Direct Reuse" refers to using a product again for its same purpose without the need for repair. Goods that can be exported for direct reuse are not considered to be waste under the Convention. It is possible that Malaysia intended to refer to exports subject to repair before they can be reused. In that case, if we are referring to electronic wastes, the import for repair can only be allowed if accomplished in accordance with the criteria laid out in the Technical Guideline on Electronic Wastes and this should be so stipulated.¹³⁹
- ii. Malaysia does not appear to have transposed into domestic law the recent Plastic Waste Amendments¹⁴⁰, nor the even more recent e-Waste Amendments,¹⁴¹ in particular the inclusion of new controls placed on Annex II listings Y48 (mixed and contaminated plastics) and Y49 (non-hazardous e-wastes), although guidelines on contamination limits for plastic waste and prior informed consent have been issued.¹⁴² As all plastic wastes are traded under the Customs Harmonized System Code (HS Code) 3915 (scrap plastic), there is currently no legal obligation for exporters to declare and apply for PIC when they ship Y48 plastics (a subset of HS3915). This will likely lead to unauthorized shipments of mixed plastics or contaminated plastics (Basel listing Y48) from entering Malaysia, and is thus out of compliance with the Basel Convention. However, for e-wastes, the lack of control over Y49 would have little impact as long as all e-wastes continue to be considered hazardous in Malaysia and thus prohibited by the DOE's policy of not allowing e-waste imports. However, it is important to remember that this "ban" is really only policy right now and could be subject to change.

Restrictions on import of wastes for recovery (Annex IV B)

This Party restricts the import of hazardous wastes and other wastes for recovery (Annex IV A)

(i) Nature of the restrictions:

- Partial restriction

If partial restriction (e.g. depending on the intended Annex IV B disposal operation), please specify the nature of the restriction:

- (a) Any importation of hazardous wastes for recovery or final disposal purposes is prohibited.
- (b) The importation of hazardous wastes is only allowed for the purpose of direct reuse or as alternative raw material provided the hazardous waste is not available in the country.
- (c) Malaysia does not allow any importation of hazardous wastes from any party or member of Organization for Economic Co-operation and Development (OECD), European Commission (EC) and Liechtenstein, in accordance to the Ban Amendment, Basel Convention.

(ii) Country or region covered by restrictions:

- All countries

(iii) Wastes covered by the restrictions:

- All wastes covered by BC
- Article 1(1)b nationally defined hazardous wastes

(iv) Specify relevant legislation and its entry into force:

- (a) Section 34B(1)(b), Environmental Quality Act 1974 and
- (b) Customs (Prohibition of Import) Order 2023.

139. [Technical guidelines on transboundary movements of electrical and electronic waste and used electrical and electronic equipment, in particular regarding the distinction between waste and non-waste under the Basel Convention \(4 May 2023\)](#). (scroll down to find)

140. <https://www.basel.int/implementation/plasticwaste/amendments/overview/tabid/8426/default.aspx>

141. <https://www.basel.int/Implementation/Ewaste/EwasteAmendments/Overview/tabid/9266/Default.aspx>

142. https://wiki.ban.org/images/8/85/Contamination_Table.pdf

- iii. Finally, and importantly, Malaysia has not strictly implemented Article 4 (paragraph 5), of the Convention, which forbids trade in Basel controlled wastes between non-Parties (such as the United States) and Parties (such as Malaysia), except where a special Agreement between the two countries is in place as described under Article 11. Malaysia and the United States do have an Article 11 bilateral agreement in place, but it is only for exports from Malaysia to the United States and not vice versa. The primary subject of this report is e-waste exports from the United States to Malaysia, of Basel-controlled wastes which, as noted above, have by policy been banned from import in practice but not by the letter of the law.

Just prior to publication of this report on October 9, 2025, the Deputy Minister of Natural Resources and Environmental Sustainability of Malaysia reiterated the fact that Malaysia has every intention of maintaining its ban on the import of e-wastes.¹⁴³

However, as it is not law, this policy could change and the country could revert to allowing imports of e-waste from non-Parties if this is not changed within the law. The Basel rule that forbids imports from non-Parties, therefore, needs to be placed within Malaysian law and this should encompass all Basel-controlled wastes. Currently, and very concerning, is the fact that plastic waste exports of newly controlled Y48 listed plastics from the United States currently pour into Malaysia, often exported by the same brokers as those that handle e-waste exports. Such imports should not be allowed under Basel unless they are B3011 listed plastics. As this report was being written, however, Malaysia indicated new regulations that will forbid Y48 as well as B3011 from Basel non-Parties.¹⁴⁴



143. <https://theedgemalaysia.com/node/773437>

144. <https://myemail.constantcontact.com/Malaysia-Prohibits-Plastic-Waste-Imports-from-USA.html?soid=1114999858498&aid=fixUCQLf8zY>

NEW BASEL E-WASTE AMENDMENTS

In 2023, the Basel Convention Parties agreed to control both hazardous and non-hazardous electronic waste. According to the new e-waste listings that entered into force on January 1, 2025, there should only exist two possibilities wherein the transboundary movement of e-waste will not be covered by the new listings of A1181 (hazardous e-waste) and Y49 (e-wastes for special consideration):

- i. **When a material is deemed not to be a waste due to the fact that it is destined for reuse, refurbishment, or repair and will follow the criteria set forth in the e-Waste Technical Guidelines (Paragraph 33b)**
 - » It should be noted, however, that this exception is not a legally binding one under the Convention but can be found in the e-Waste Technical Guidelines.¹⁴⁵ In Paragraph 33b one can find the criteria for transparency, labelling and packaging that are required if two participating Basel Parties wish to trade in e-waste for the purposes of repair. To date, there have been very few known instances of this taking place in accordance with the guidelines. The e-waste Technical Guidelines were adopted on an interim basis many years ago and still exist in a state of widespread disagreement and controversy. Each country is left to establish criteria as to whether and when this possible interpretation can be exercised. But because Malaysia appears to be adopting it in part, as will be further elaborated below, we are compelled to raise the matter here. And if countries do wish to exercise it, it must be done only by adhering to the guideline criteria.
- ii. **When wastes have already been processed to a degree that they can be designated as a non-waste or as a non-hazardous waste already listed on Annex IX (wastes not controlled by the Convention) or Annex II (wastes requiring special consideration).**
 - » This last exemption applies when a former waste ceases to be a waste (see glossary of terms), for example, via a thorough recycling operation, where it becomes a material inseparable from being deemed a commodity (e.g. copper ingot derived from recovered copper in e-waste). Or, in a second instance, the e-waste meets the criteria of an existing listing on Annex IX or Annex II, and importantly, are not contaminated with, nor contain, Annex I constituents that render it hazardous, unless it can be shown that they do not exhibit an Annex III hazardous characteristic. If the e-waste-derived material meets these requirements, it will be exempted from Basel controls as a hazardous or other waste. This latter exception is highlighted in the new definition of Y49.

Otherwise, for all other equipment, components, and waste residuals derived from electronic and electrical equipment, the following conditions under the Basel Convention should apply if they are sent to Malaysia:

1. **Party to non-Party trade ban:** As a Party, Malaysia must adhere to the Party-to-non-Party trade prohibition found in the Basel Convention (Article 4, Paragraph 5). This means that trade between themselves and a non-Party like the United States for any wastes covered under the Basel Convention is illegal unless a special bilateral or multilateral agreement is formed between the countries. No such agreement is in place between the United States and Malaysia for waste importation into Malaysia. Thus, it is illegal for Malaysia to import any Basel-controlled e-waste from the United States, both hazardous (A1181) and waste requiring special consideration (Y49).
2. **Basel Ban Amendment:** Malaysia has ratified the Ban Amendment, which means that with respect to hazardous e-waste (A1181), Malaysia cannot import this listing from any Annex VII country.

145. [Technical guidelines on transboundary movements of electrical and electronic waste and used electrical and electronic equipment, in particular regarding the distinction between waste and non-waste under the Basel Convention \(4 May 2023\).](#)

3. **Prior-informed-consent (PIC) procedure for all e-waste imports/exports:** E-wastes controlled by the Basel Convention, both hazardous and non-hazardous, are subject to the PIC procedure as elaborated in Article 6 (Transboundary Movement between Parties), requiring state-to-state notification of intent to export, to be followed by state-to-state consent after pre-requisites such as assurances of environmentally sound management are confirmed.
4. **Assurances of “Environmentally Sound Management” (ESM):** The Basel Convention in its Article 4 (General Obligations), Paragraph 2, requires all transboundary movement to only take place when there are assurances that the facilities and operators receiving the waste will be processing the waste and operating in an environmentally sound manner.
5. **Definition of “environmentally sound manner”:** The Basel Convention is meant to set a high legal bar for what is considered ESM – it means all practicable steps have been taken to ensure that the management of hazardous and other wastes is carried out in a manner that does not lead to adverse effects from such waste. Importantly, this definition of ESM applies to the entire shipment, including the fractions that may have to be managed as hazardous waste and may not be economical to be recycled. This includes plastic fractions and low-grade circuitry among the e-wastes.
6. **Illegal traffic must be considered a criminal act:** Article 9 (Illegal Traffic) defines what is deemed as illegal traffic under the Convention. Enforcement against illegal trafficking in Basel-controlled wastes is implied by its stipulating in Article 4(3), “The Parties consider that illegal traffic in hazardous wastes or other wastes is criminal.” Illegal traffic is subject to a return of shipments to the exporter should such illegality be demonstrated, and each party is required to introduce national legislation to prevent and punish illegal trafficking of hazardous wastes.
7. **Return-to-sender when shipment cannot be completed according to the contract:** Article 8 of the Convention requires the return of trafficked wastes to the exporting country when shipments cannot be properly completed according to the contract. Between 2019 and April 2021, Malaysia reportedly returned 348 containers containing mixed plastic waste.¹⁴⁶ And in 2025 as of May 15, Malaysia has returned 65 containers of contaminated plastic waste out of the 70 they inspected.¹⁴⁷ However, the status of the containers of e-waste seized following BAN’s alerts to authorities are as yet uncertain.

USED ELECTRICAL AND ELECTRONIC EQUIPMENT (UEEE) LOOPHOLE

As noted above, there remains an intentional loophole in Malaysia’s regulations on e-waste imports, which is likely to be exploited. Although e-waste is not allowed to be imported, permission from the Director General of the DOE may be granted for imports of “Used Electrical and Electronic Equipment (UEEE).” This is not a term that appears in the Basel Convention but is a similar concept as that found in Paragraph 33b of the aforementioned Technical Guidelines. UEEE charg below details Malaysia’s policy on UEEE for reuse following repair as well as for direct reuse. It is found in the Guidelines for the Transboundary Movement of Used Electrical and Electronic Equipment in Malaysia, 2021, p. 4).¹⁴⁸

146. <https://www.reuters.com/article/world/malaysia-sends-back-over-300-containers-of-illicit-plastic-waste-idUSKBN2BT29H/?>

147. <https://www.bernama.com/en/news.php?id=2423162>

148. <https://www.doe.gov.my/wp-content/uploads/2021/07/Guidelines-for-the-Transboundary-Movement-of-Used-Electrical-and-Electronic-in-Malaysia.pdf>

This policy provides criteria for allowing imports of electronic equipment as non-waste, and would seem to be based in part on Paragraph 33 in the Basel e-waste Technical Guideline. However, it does not align well with that paragraph and, as such, is out of step with that Basel guidelines, which describes the necessary requirements when used equipment is not considered waste. The Malaysian guideline contains some provisions which are not present in the Basel guidelines, which is the prerogative of Malaysia, but omits other important requirements found in the Basel guidelines.

The important missing criteria, which is found in Paragraph 33(b) of the Basel e-waste Technical Guidelines, include:

- » A declaration, made by the person who arranges the transport of the equipment, that none of the equipment within the shipment is defined as or is considered to be waste in any of the countries involved in the transport (countries of export and import and, if applicable, countries of transit);
- » Full documentation as described in Paragraph 34 and Appendix III in the Technical Guidelines that accompanies the equipment;
- » A valid contract that exists between the person who arranges the transport and the legal representative of the facility where the equipment is to be repaired or refurbished or undergo failure analysis. The contract should contain a minimum set of provisions, including the following:
 - » The intention of the transboundary transport (failure analysis, repair or refurbishment);
 - » Provisions to ensure that any residual hazardous waste and other wastes generated through the failure analysis, repair or refurbishment activities are managed in an environmentally sound manner, either in the country where the facility is located or in another country (see first sentence of Article 4(8) of Basel Convention¹⁴⁹) and a provision to allocate responsibility for such environmentally sound waste management; and
 - » A provision stating the responsibility of the person who arranges the transport to comply with applicable national legislation and international rules, standards and Basel Convention guidelines.

To ensure such compliance, the following provisions should be included:

- » A provision allocating responsibility to specific persons throughout the whole process, from export until the equipment is either analyzed or repaired or refurbished to be fully functional, including cases where the equipment is not accepted by a facility and has to be taken back;
- » A provision requiring the facility to provide the person who arranged the transport with a feedback report on the failure analysis, repair or refurbishment activities that were performed on the equipment and on the management of any residual hazardous waste and other wastes that may have been generated from such activities. If appropriate, the contract may include the possibility of a review of the feedback report by the person who arranged the transport, or by a third party.

POLICY ON TRANSBOUNDARY MOVEMENT OF USED ELECTRICAL AND ELECTRONIC EQUIPMENT OR ITS COMPONENT IN MALAYSIA

The policy of transboundary movement of Used Electrical and Electronic Equipment (UEEE) or its components in Malaysia are as follows:

- a) UEEE does not fulfil the definition of SW 110 or not contaminated with any scheduled waste under the provision of Environmental Quality (Scheduled Wastes) Regulations, 2005;
- b) Age of equipment and its components must be five (5) years or less from the date of manufactured;
- c) The UEEE must be protected appropriately against damage during transport, loading and unloading, with a focus on suitable packaging and stacking of the load;
- d) Cooling equipment should not contain any CFCs or HCFCs (banned cooling agent);
- e) Receiving facility must comply with the Environmental Quality Act, 1974 and relevant regulations; and
- f) Importation for the purpose of material recovery and disposal is not allowed.

Malaysia's policy on importation of UEEE. Source: DOE (2021)

149. "Each Party shall require that hazardous wastes or other wastes, to be exported, are managed in an environmentally sound manner in the State of import or elsewhere."

As can be seen, the Basel e-waste Technical Guidelines are far more strict than the Malaysian policy outlined in the chart above. We also note the following questions regarding the existing UEEE criteria:

- i. **Chart (a):** For there to be legal importation of UEEE, or components, the material cannot be contaminated with any scheduled waste listed in the provisions in Environmental Quality (Scheduled Wastes) Regulations 2005. This appears self-contradictory as there are many hazardous substances even in repairable or re-usable electronic equipment such as lead, cadmium and mercury. Should these all be banned from reuse and repair trade? Who will monitor this at the ports?
- ii. **Chart (b):** The incoming equipment/components can be no older than 5 years. Who will verify that, and how, at the ports?
- iii. **Chart (d):** This means that air conditioners cannot contain CFCs or HCFCs. How will this be verified in the event of seizures at the ports?
- iv. **Chart (f):** Recycling and disposal are not allowed. However, many repair operations routinely discard parts that are replaced as a function of a repair. Thus, repair very often involves recycling and disposal. Further, the economics of repair is very marginal and it is very likely that imports, even with good intentions of repair, will over time or under changing circumstances not be economically repairable and will thus be recycled or dumped in contradiction to the intent of the policy.

For all of the concerns outlined above, we find this policy on allowing the trade of repairables to be a loophole with high risks of being exploited, in particular due to the difficulty in verification. While well intended, this policy is problematic in practice. BAN has long argued that the only distinguishing feature between waste and non-waste should be functionality (whether the product is functional or not at that point in time) for the primary purposes for which it was designed. With that demonstrable criteria, one can avoid the unanswerable question of what should be deemed repairable under the law, as theoretically, anything can be claimed to be repairable.

SCRAP METAL V. WASTE

Finally, we have noted another concern which could possibly operate as a loophole in the implementation of the Basel Convention for e-waste in Malaysia. As reported often in the press, and in government statements, a significant portion of the seized containers at the ports reportedly carried “scrap metal” rather than e-waste, and thus are allowed into the country.

However, “scrap metal” per se is not a Basel listing and could very well be a waste that should be subject to control. This is particularly true now with the new Basel listings that consider only very thoroughly cleaned and processed metals to be outside of Basel controls. Scrap metal derived from electronic waste must have no electronics-derived residues. The 2021 guidelines¹⁵⁰ issued by the government to date are fairly strict in terms of concentration levels of pure metal scrap, but they must be updated to reflect the new zero tolerance for hazardous or electronic residues now implied by the new e-Waste listings A1181 and Y49. In summary, anything that can be visually seen as being derived from electronics, or contains hazardous contaminants, cannot be exempt from controls by a label of “scrap metal”.

EFFORTS TO IMPROVE ENFORCEMENT AND LEGAL FRAMEWORK

Following many revelations about widespread illegal importation of electronic and plastic wastes into Malaysia in recent years, the Malaysian government now views e-waste trafficking as a serious matter and a threat to national security. The government has expressed its commitment to prevent Malaysia, in particular Port Klang, from becoming a transit hub or dumping ground for e-waste from developed countries, warning that there will be no compromises made when perpetrators are penalized or sentenced in court.

150. See 2021 guidelines https://www.bir.org/images/BIR-News-pdf/2021.02_Malaysia_-_Guideline_for_Metal_Scrap_Imports.pdf and 2024 guidelines https://www.sirim-gas.com.my/wp-content/uploads/2024/05/Updated_FAQ-Importation-of-Metal-Scrap-May-2024.pdf.

As a developing country, with little experience with environmental crimes, Malaysia's laws and enforcement capacity has been insufficiently robust to deal with the challenge. The enforcement officers and policymakers are often left playing catch-up with unscrupulous industry actors and criminals whenever a new problem occurs. The ministry of environment held an inter-agency enforcement workshop involving 12 agencies and eight civil society organizations including BAN in September 2024 to examine policy and legal loopholes, as well as seek ways forward. Some of the recommendations proposed by participants included some of the following ideas.¹⁵¹

Malaysia is considering strengthening laws to address illegal waste importation. Proposals include extending environmental crimes under the Anti-

Money Laundering Act (AMLA) and the Prevention of Crime Act, which would provide enforcement agencies with broader powers. This reflects recognition that such offences often overlap with tax evasion, corruption, gangsterism, and intimidation—officers have even faced threats during enforcement operations.

Amendments are also being studied for port and free trade zone laws to hold shipping lines and forwarding agents accountable for false declarations. Blacklisting repeat offenders is another option under review. Section 43 of the Environmental Quality Act (EQA) already offers a basis to prosecute companies and agents who breach importation procedures.

Separately, amendments to the EQA passed in 2022 took effect in July 2024. These increased fines significantly—up

to MYR10 million (USD 2.26 million) for certain offences—and introduced mandatory imprisonment for serious violations such as water pollution and illegal hazardous waste disposal. Penalties for license breaches, air, soil, and noise pollution were also raised, while on-site compounds were expanded. A second phase of EQA reforms is currently under review.

Finally, efforts are being considered to dramatically strengthen the Department of Environment on matters having to do with waste crime. In January 2025, the environment minister announced that the DOE plans to enhance the Operational Directive for Enforcement Operations (ATOP) and Special Operating Procedures (SOPs), as part of an overall enhancement of operational procedures and guidelines covering monitoring, enforcement, and investigations.¹⁵²

LACK OF TRANSPARENCY

In the meantime, it is concerning that the Malaysian public is largely left in the dark about any follow-up actions, prosecutorial progress, or site remediation stemming from these high-profile actions. The public often only receives information via government press releases and media interviews, with no comprehensive figures regarding how many containers in total have been searched, how many have been verified to be illegal, how many have been repatriated to the exporting country as required, and what the next steps are.

Nevertheless, it is incumbent on any government to report on progress after the information becomes less sensitive to the outcome of the investigation, to promote good governance and to assure the public that the actions taken are not just a show, but have resulted in actual prosecutions. As yet, further information on the consequences of the serious crimes occurring in Malaysia related to e-waste, as revealed in the many instances of enforcement actions, has not been published, but there has admittedly been good progress on improving Malaysia's regulatory framework.

One proposal under consideration is to have stricter regulations for all recycling activities, with a wider scope and enhanced transparency, for example, mandating companies to conduct Environmental Impact Assessments that must be publicly displayed to gather feedback from the public and affected parties.

151. https://www.bharian.com.my/berita/nasional/2025/03/1368685/pihak-lupus-e-waste-secara-haram-didakwa-ikut-aml-poca?utm_source=insider&utm_medium=web_push&utm_campaign=05032025-pihak_lupus_e-waste_secara_haram_didakwa_ikut_aml_poca&webPushId=MTk1MjI%3D#google_vignette

152. <https://dmedia.penerangan.gov.my/upload/km/08012025.1309003827.pdf>

SUMMARY

While Malaysia still allows, by law, the import of certain uncontaminated e-wastes intended for recycling, recovery, or direct reuse, such imports are subject to stringent regulations and require prior approval from the Director General of the DOE. The current national policy is to prohibit all importation of e-waste and illegal importation is meant to be subject to increasingly severe penalties and crackdowns. Importers must ensure full compliance with Malaysia's environmental laws and international agreements to avoid legal repercussions.¹⁵³

And yet, despite the prohibitive policy, e-waste has been allowed to enter the country since 2001. BAN estimates that in the 26 months between January 2023 to February 2025 alone, Malaysia has imported 665,355 metric tonnes of e-waste. Despite seemingly strict laws, loopholes persist, involving misdeclarations, spurious claims of scrap metal, or imports for repair that continue to be asserted and meanwhile many imports simply go unscrutinized. Enforcement has been under-mandated, under-funded, and under-staffed.

However, it is all too easy to blame the victim of the crime. While there are no doubt complicit actors operating in Malaysia, the Malaysian people at large are not to blame here. It should not be forgotten that were it not for unethical exporters operating with impunity, abetted by the failure of the US federal and state governments from preventing such unethical trade, the Malaysian government would not be forced to deal with the unwelcome task of fighting global dumping, all at their own expense. Until the US interests begin to act more responsibly, Malaysia must seek greater and greater penalties from the businesses making the profits, including jail time and very stiff fines ensuring that Malaysia can succeed in protecting her land from becoming the dumping grounds of the transnational waste criminals.

It is hoped, also, that in lieu of cooperation from the US government, in future, Malaysia will share more data with intergovernmental agencies such as INTERPOL, the World Customs Organization, the Basel Convention secretariat, and the European Anti-Fraud Office, the United Nations Office on Drugs and Crime (UNODC) among others, as well as civil society organizations like BAN, national NGOs, including local community groups living close to illegal facilities. Finally, shipping lines can also prove to be important allies in the effort to bring the criminal trafficking to heel.

THAI LAW

As a Basel Party that is not enjoined in any special Basel Article 11 agreement with the United States, Thailand is subject to all of the same Basel rules as we listed above for Malaysia. Thailand has similarly ratified the Ban Amendment. Thus, similar to Malaysia, the only possible legal imports of waste material derived from electronic equipment allowable from the United States will be pre-processed clean and non-hazardous electronic scrap listed on Annex IX of the Convention; or fully functional electronic equipment; or following Paragraph 33b of the Technical Guidelines on Electronic Waste, imports for repair so long as the exporting and importing countries agree to this interpretation and all of the criteria laid out in Paragraph 33b of the Guidelines are followed. In the enclosed box, one can see the Basel Convention website entry for Thailand reporting its trade restrictions.

Restrictions on import of wastes for recovery (Annex IV B)

This Party restricts the import of hazardous wastes and other wastes for recovery (Annex IV A)

(i) Nature of the restrictions:

- Partial restriction

If partial restriction (e.g. depending on the intended Annex IV B disposal operation), please specify the nature of the restriction:

Import of hazardous wastes and other wastes into the Kingdom of Thailand is allowed for environmentally sound recovery/recycle only.

(ii) Country or region covered by restrictions:

- All countries

(iii) Wastes covered by the restrictions:

- All wastes covered by BC

(iv) Specify relevant legislation and its entry into force:

- For import of hazardous waste and used EEE, importer/consignee shall comply with the Notification of the Department of Industrial Works on Criteria for Import of Chemical Wastes into Thailand, issued on 14 May B.E. 2539 (1996) and 26 May B.E. 2543 (2000) and the Notification of the Department of Industrial Works on Criteria for Import of Used Electrical & Electronic Equipment into Thailand, issued on 13 September B.E. 2550 (2007).
- In May 2011, the National Environment Board ban import of 5 types of hazardous waste including 1) Waste substances and articles containing/contaminated with polychlorinated biphenyls (PCBs) and/or polychlorinated terphenyls (PCTs) and/or polybrominated biphenyls (PBBs); 2) Waste glass from cathode-ray tubes & other activated glass; 3) Used Lead-Acid Batteries; 4) Waste asbestos or waste containing/contaminated with any type of asbestos; and 5) Wastes containing/consisting of/contaminated with any congener of polychlorinated dibenzo-furan or polychlorinated dibenzo-dioxin.

153. Press statement by the minister of environment, June 26, 2024. <https://www.nres.gov.my/ms-my/pustakamedia/KenyataanMedia/KENYATAAN%20MEDIA%20KERAJAAN%20GIAT%20BANTERAS%20KEMASUKAN%20HARAM%20E-WASTE%20DAN%20SKRAP%20LOGAM%20DI%20PELABUHAN%20NEGARA.pdf>

INDONESIAN LAW

As a Basel Party that is not enjoined in any special Basel Article 11 agreement with the United States, Indonesia is subject to all of the same Basel rules as we listed above for Malaysia. Indonesia has similarly ratified the Basel Ban Amendment and so just like Malaysia, those implications are the same as well. Thus, in sum, the only possible imports of waste material derived from electronic equipment allowable from the United States will be pre-processed clean and non-hazardous electronic scrap listed on Annex IX of the Convention; fully functional electronic equipment; or following Paragraph 33b of the Technical Guidelines on Electronic Waste, imports for repair so long as the exporting and importing countries agree to the interpretation allowing exports and imports for repair and all of the criteria laid out in Paragraph 33b of the Guidelines are followed. In the enclosed box, one can see the Basel Convention website entry for Indonesia reporting its trade restrictions.

BASEL CONVENTION ENTRY for INDONESIA

This Party (Indonesia) restricts the import of hazardous wastes and other wastes for recovery (Annex IV B)

(i) Nature of the restrictions:

Total prohibition

(ii) Country or region covered by restrictions:

All countries

(iii) Wastes covered by the restrictions:

Annex VIII BC

Annex II BC

Article 1(1)b nationally defined hazardous wastes

Other:

Annex IX those not covered by Ministry of Environment and Forestry

(iv) Specify relevant legislation and its entry into force:

Prohibition of importation of hazardous waste and non-hazardous waste as regulated in Article 69 Act 32/2009 concerning Environmental Protection and Management;

Prohibition of importation of municipal solid waste as regulated in Article 29 Act 18/2008 concerning Municipal Solid Waste Management

LAW OF THE UNITED ARAB EMIRATES

As Southeast Asian countries begin to crack down on illegal waste trafficking, we are seeing more exports moving to the United Arab Emirates (UAE). But, as a Basel Party that is not enjoined in any special Basel Article 11 agreement with the United States, the UAE is subject to all of the same Basel rules as we listed above for Malaysia. The United Arab Emirates has not ratified the Basel Ban Amendment but they have implemented it according to their report on the Basel Convention website, and so, just like Malaysia, those implications are the same as well. Thus, similar to Malaysia, the only possible imports of waste material derived from electronic equipment allowable will be pre-processed clean and non-hazardous electronic scrap listed on Annex IX of the Convention, or fully functional electronic equipment, or following Paragraph 33b of the Technical Guidelines on Electronic Waste, for repair so long as the exporting and importing countries agree to this interpretation and all of the criteria laid out in Paragraph 33b are followed.

BASEL CONVENTION ENTRY for UNITED ARAB EMIRATES

This Party (United Arab Emirates) restricts the import of hazardous wastes and other wastes for recovery (Annex IV B)

(i) Nature of the restrictions:

Total prohibition

(ii) Country or region covered by restrictions:

All countries

(iii) Wastes covered by the restrictions:

All wastes covered by BC

(iv) Specify relevant legislation and its entry into force:

Article 62 of the Federal Law No. (24) Of 1999 for the protection and development of the environment

PHILIPPINE LAW

As a Basel Party that is not enjoined in any special Basel Article 11 agreement with the United States, the Philippines is subject to all of the same Basel rules as we listed above for Malaysia. The Philippines has not ratified the Basel Ban Amendment, but this would only effect imports from another Basel Party which had similarly not ratified the Ban Amendment. In sum, the only possible imports of waste material derived from electronic equipment allowable from the United States will be pre-processed clean and non-hazardous electronic scrap listed on Annex IX of the Convention; fully functional electronic equipment; or following Paragraph 33b of the Technical Guidelines on Electronic Waste, imports for repair so long as the exporting and importing countries agree to the interpretation allowing exports and imports for repair and all of the criteria laid out in Paragraph 33b of the Guidelines are followed. In the enclosed box, one can see the Basel Convention website entry for the Philippines reporting its trade restrictions.

Restrictions on import of wastes for recovery (Annex IV B)
This Party restricts the import of hazardous wastes and other wastes for recovery (Annex IV A) (i) Nature of the restrictions: - Partial restriction If partial restriction (e.g. depending on the intended Annex IV B disposal operation), please specify the nature of the restriction: Importation is allowed for scrap materials listed in Table 10.1 (Schedule of Recyclable Materials Containing Hazardous Substances that may be Imported Subject to the Corresponding Limiting Conditions) of DAO 2013-22 (ii) Country or region covered by restrictions: - All countries (iii) Wastes covered by the restrictions: - Other: scrap metals, solid plastic materials, electronic assemblies and scraps, used oil, fly ash (iv) Specify relevant legislation and its entry into force: Republic Act (RA) 6969 and its Implementing Rules and Regulations: Department Administrative Order (DAO) 1992-29; DAO 1994-28; DAO 1997-28, DAO 2004-27; DAO 2004-66; and DAO 2013-22 (v) Remarks: As a general policy and consistent with the provisions of the Basel Convention and the Toxic Substances and Hazardous and Nuclear Waste Control Act of 1990 otherwise known as Republic Act 6969, no importation of hazardous wastes, as defined in Chapter VII, Sections 24 and 25 of DAO 29 (Implementing Rules and Regulations of RA 6969) shall be allowed by the country. However, importation of materials containing hazardous substances as defined under RA 6969, its implementing rules and regulations and subsequent directives for the control of importation of wastes, for recovery, recycling and reprocessing, may be allowed only upon obtaining prior written approval from the Secretary of the Department of Environment and Natural Resources or his duly authorized representative.

THE ROLE OF CERTIFICATIONS

Voluntary electronics recycling certifications can play a powerful role in holding industries accountable and correctly shaping markets towards business ethics and responsibility. Unfortunately, if not adequately audited and enforced, certifications can have an opposite effect and function as a false seal of legitimacy.

Such appears to be the case in the US electronics recycling industry presently. Our research indicates eight of the ten “Brokers of Shame” have achieved certification, despite evidence suggesting that their operations may not align with the laws of importing countries and the intent of the standards themselves.

It is not surprising that companies lacking integrity would seek the reputational benefits of certification; what is surprising is how readily some appear to have succeeded without adhering to even some of the most vital aspects of a standard. This finding raises serious questions about whether current auditing and oversight mechanisms are sufficient to prevent unworthy attainment of certifications and misuse of their status.

As shown in the table below, eight of ten of the highlighted Brokers of Shame received certifications in 18 facilities, and nine out of ten held either a voluntary certification or state program approval. These findings suggest a serious problem with both certification programs and state programs. These findings should ring an alarm in the industry that there is a need to salvage the remaining trust in these programs so many have invested in. Maintaining a poor track record will render these important programs meaningless. Reform is essential.

Approvals Given to Companies Likely Operating Unlawfully			
Broker of Shame	e-Stewards (brokers not eligible)	R2v3 Certifications/ Facilities	State Program (CA)
1. Attan Recycling	No	No	processor/collector
2. Corporate eWaste Solutions	No	3/3	processor/collector
3. Creative Metals Group	No	No	No
4. EDM	No	1/1	No
5. First America Metal Corp.	No	8/8	No
6. Gem Lifecycle Solutions	No	1/2	No
7. Greenland Resource	No	2/2	No
8. IQA Metals	No	2/3	No
9. PPM Recycling	No	2/2	No
10. Semsotai, SST Metals	No	1/1	No

In this light, it is vital to understand that certifications are only as effective as their auditing and conformity assurance programs that enforce them. We appreciate recent steps by both SERI and e-Stewards to enhance the education on new rules, and vigilance over auditors in their program. But one inherent weakness of the certification system is that there is a limit to what auditors can do about the practices that take place outside of annual observation time. It is clear now that stronger, more frequent, and more random performance verification methods are needed to ensure 24/7 compliance. Additional final checks and safety nets may be best achieved within the standard's rules and ancillary performance verification by program administrators and not relying only on certifying bodies.

Our findings indicate that the fault of what we believe is likely illegal export is not confined to brokers alone, but many certified recyclers upstream of brokers, which should be responsible for their downstream disposal chain, appear to rely on these brokers as downstream channels, or in many cases may export directly to developing countries themselves.

One identified problem is that the R2v3 Standard, in particular, places due diligence obligations on its certified processors only to the "first R2v3 facility" or to final disposition. While on paper this rule seems logical, in practice, it allows a situation where one weak link in the chain, allows the entire intent and purpose of the program to fail as scrutiny becomes unnecessary once material enters a certified downstream. Some actors appear to have leveraged this gap, obtaining certification primarily to position themselves as a "green gateway" while continuing to find ways to game the system, and avoid scrutiny by their upstream customers.

Ultimately, responsibility for downstream activity must remain with the original manager and shipper of wastes, regardless of what the certification status is of those downstream. If the standard exonerates those who use other certified companies, a company's liability and responsibility to be certain that the standard is upheld is too easily shed.

Further, we believe that more must be done by the Certification Administrators themselves to add extra layers of policing the Certifications with random unannounced inspections, GPS tracking, Trade Data monitoring, and greater capacity baked into the standards, giving the right to conduct downstream investigations. While this may seem onerous, it is necessary to ensure the Standards that everyone is paying for retain their value.

In this report we highlight the concerns we have found, and elaborate them, not to diminish the value of certification, but to do the opposite -- to underscore the need at this point in time of the electronics recycling industry in the US for reform to prevent erosion of trust and ensure that certification truly delivers on its promise of responsible recycling. In the table below we outline needed reforms and suggested remedies.

Problems Found / Reforms Needed in Certification Programs	
Problem	Remedy
Auditor Awareness of new Rules	
Auditors may be having difficulty in understanding the increasing complexity in the array of new export rules with respect to e-wastes and e-waste fractions in international law and how these are interpreted in the standards.	Intensive and regular training required of all auditors. A hotline for quick answers to complex questions. A checklist/FAQ for auditors.
Auditor Awareness of How Cheating is Conducted	
Auditors must maintain the role of being trusted advisors to certified companies, and yet at the same time they must understand that their role also must be in part -- policing the standard and looking for potential avenues where cheating is likely to take place. This latter role is vital and yet appears to be lacking.	The intensive training noted above, must include understanding how to better penetrate the veil of downstream opacity. There are methods for doing this which must become part of the overall training of auditors for any standard.

Problems Found / Reforms Needed in Certification Programs	
Problem	Remedy
Audit System Needs to be Backstopped by Certification Administrator Enforcement	
Audits can be gamed due largely to the fact that they are infrequent (usually annual), and pre-announced. CBs have an inherent conflict of interest to not be too strict or else lose customers. Audits are a good first layer for enforcement and should be more oriented towards enforcement, but a strong second layer of policing is required to ensure conformity to any standard.	Policing (performance verification) beyond the auditing provided by the Certifying Bodies is essential. Truly unannounced inspections by well-trained inspectors who understand cheating methods is required. GPS tracking of upstream devices can also be a powerful tool. Inspections should include surveillance of loading docks and worker interviews. The Administrators should likely conduct trade data scans on a regular basis. The institution of these types of methods should be part of the standard itself.
Punishment for Cheaters is Too Light to Serve as Disincentive	
Very rarely are non-conformities, even when willful, punished to a serious degree to provide a strong deterrence and often following a suspension, the company is reinstated so quickly, even after breaking laws, as to have only a slap on the wrist effect.	To ensure that egregious, willful violations are properly punished, program suspensions need to be substantial. Further, the non-conformity leading to such suspensions needs to be transparent to the public and potential customers. Without public awareness you harm not only the program's integrity but also mislead the public as to the activities of certain companies, the public, and customers have that right to know.
Auditors with Poor Track Records Should be Removed and Sanctioned	
There are very few instances of auditors being removed from CBs or programs, despite what may be poor track records.	Following warnings in this regard R2 and e-Stewards should discuss together with CBs means to cull corrupt or negligent auditors and thereby improve accountability.
Brokers are Not Recyclers	
As companies whose entire profit is derived from finding the cheapest downstream vendors and not by improving operations, they have a higher propensity to find unsustainable and sometimes illegal destinations that can pay a better price than responsible companies. The Certifications have always been meant to certify recyclers, processors, refurbishers and their activities. They were not designed to certify companies whose model is mostly about brokering and who possess lists of hundreds of poorly vetted downstream vendors.	Standards should consider only certifying actual Recyclers/ refurbishers or otherwise ensure far greater scrutiny in auditing brokers. The standards should consider all companies that do not process waste but just arrange shipment downstream to be brokers. Companies with long lists of Downstream vendors, should be required to conduct in-person audits. Downstream charts must be updated on a monthly basis.
Basel Compliance is Accomplished by Governments Only	
The Basel Convention is a treaty between countries and requires compliance assurances only through the written consent of governments for each shipment – not on an annual permit basis. Even in the US, any Standard must ensure that the US government is informed of the export, and the importing government has pre-approved it as a specific shipment prior to export.	In the absence of copies of the written notifications and consent from governments for each specific shipment, exports should not be accepted by auditors for any Basel controlled wastes. Auditors must be trained to demand this proof and the Standards must be amended as necessary to make the Basel requirement clear.

Problems Found / Reforms Needed in Certification Programs	
Problem	Remedy
Certified Recyclers Must Maintain Responsibility for the Entire Downstream Chain of Disposition	
While theoretically, export to another company certified to the same standard should be a watertight assurance, in reality, with great incentives to cheat, or look the other way, the safety nets often need to be redundant to ensure compliance.	Both Standards should ensure that the responsibility to control downstream compliance remains for all Certified Processors until and including final disposition. Downstreams must be bound by contract and assured by in-person auditing by upstream companies or consultants acting on their behalf.
All Company Processing Facilities and Other Sites Should be Under Certification	
One is asking for certification breaches when only some facilities of a company need to be Certified. Corporate Integrity can only be assured on a corporation-wide basis and cannot be facility based, or else uncertified facilities become channels for violations.	Certification rules should apply to the entire property and operations of a company within a country.
False Commodity Codes Not Acceptable	
Any export should only be acceptable if written or photographic proof is given that the cargo inside containers meets the proper description of the HS code found on the Bill of Lading. Currently these HS codes are routinely and intentionally mis-declared, but it's not usually a concern of the auditors.	Training on the use of proper codes must be undertaken for all certified companies and auditors. This must be part of the standard requirements and conformity assurance. Importing Countries need to be made aware of the proper codes as well.
Close the Repairables Loophole	
It is not Basel compliant to export Electronics for Repair or Reuse without following all the Criteria outlined in paragraph 33 of the Basel Convention e-Waste Technical Guidelines. Some Standard adherents erroneously believe that Basel condones free export of equipment for the purposes of repair but this is only true if all the relevant criteria outlined in paragraph 33 are adhered to. If they are not followed, then the export is an export of waste electronics and unlawful to be traded with the United States.	Both Standards in guidance and in trainings must make this absolutely clear.
Prevent Certification Hopping by Maintaining Level Playing Field	
If either standard becomes known as being weaker on applying and enforcing international law, then it will create an uneven playing field, leading to a flocking to the weaker standard by unscrupulous actors. This must be avoided to prevent Standards in particular, and recycling in general, from acquiring a bad reputation.	It is recommended that both Standards seek equal application of sanctions on non-compliance and work together to train auditors, maintain high levels of education for all stakeholders, and in sharing intelligence on non-conformities.

RECOMMENDATIONS

US FEDERAL AND STATE LAWS

1. Ratify the Basel Convention

The United States must faithfully ratify the Basel Convention and do so in a manner that avoids loopholes in its implementing legislation. At present, the U.S. is the only industrialized country that has not joined this global treaty, which governs responsible waste trade and is central to advancing a circular economy. This failure not only undermines environmental protections but also places U.S. businesses at a competitive disadvantage in markets where Basel compliance is a prerequisite. Ratification would provide statutory authority for the U.S. government to prosecute illegal toxic exports, just as Europe and other Parties are required to do. It would also represent a long-overdue commitment to stop outsourcing recycling jobs—and the toxic burdens that come with them—to vulnerable communities abroad.

2. Pass the Secure E-waste Export and Recycling Act (SEERA)

In the absence of Basel ratification, Congress should pass SEERA. Promoted by electronic recyclers through the work of the Coalition of American Electronics Recyclers (CAER), SEERA would amend the Export Administration Regulations by designating non-working/ untested used electronic items as “Electronic Waste”. Such waste cannot be exported outside the U.S. except under limited, lawful conditions. This measure would finally put U.S. recyclers on an even playing field with exporters who profit by avoiding responsible processing, and it would close one of the most exploited gaps in U.S. export controls. (For more on this important bill, visit the website of CAER).¹⁵⁴

3. Enforce existing laws against false declarations

Even without Basel ratification or SEERA, the U.S. government already has the authority to act against exporters and importers utilizing false HS declarations. If misdeclarations were consistently punished, brokers would become less apt to attempt to hide shipments under misleading commodity codes. Forced to use the proper codes, authorities in all relevant jurisdictions would immediately see the exports for what they are – HS 8549 – e-waste.

4. Use Executive Powers in the United States to Halt Government Exports

By Executive Order, the Trump Administration can establish a prohibition against outsourcing recycling jobs abroad and ensure against electronics security leakage to Asia, by ensuring that all electronic waste generated by the Federal government is managed by Certified Recyclers in the United States. Further, the Defense Logistics Agency must absolutely ensure that its current contract adheres to R2 or e-Stewards Standards as already required, by conducting their own due diligence.

154. [Website of CAER](#).

5. Enforce California's existing e-waste laws

California, as a pioneer in e-waste regulation, must ensure its own laws are enforced. Companies exporting Covered Electronic Devices (CEDs), or Universal Wastes are required to report these exports, yet enforcement to date appears to be minimal. California should prosecute companies failing to comply with reporting requirements honestly. They should likewise ensure negligent non-enforcement does not become systematic. Without enforcement, pioneering laws risk becoming hollow gestures rather than models for national policy.

6. Strengthen Extended Producer Responsibility Programs.

States running EPR programs should ensure that collected e-waste is not simply exported in defiance of proper management and importing country laws. Independent tracking programs, such as BAN's EarthEye,¹⁵⁵ could be contracted as oversight mechanisms to verify where wastes collected under the EPR programs actually ends up. States that have already deployed these trackers have shown how powerful random, technology-driven verification can be in preventing illegal export and ensuring accountability.

MALAYSIAN AND OTHER TARGET COUNTRY GOVERNMENTS

7. Governments in Target Countries must strengthen their Basel Enforcement Capacity

Malaysia, Thailand, Indonesia, Vietnam, Singapore, and the United Arab Emirates among others, must strengthen their national port enforcement. This will entail updating their Basel Convention implementation legislation improving enforcement via interagency task forces equipped with scanning and other technology. We urge continued work with NGOs such as BAN and use of Artificial Intelligence to review trade data on a regular basis to identify and anticipate incoming high risk shipments. Penalties should be dramatically increased to deter repeat offenses, including prison time and heavy fines for e-waste smugglers. Prosecutors and Judges should be educated to understand the full environmental and human costs of e-waste trafficking, and officials complicit in aiding traffickers must face serious consequences. Singapore, in particular, must address its growing role as a re-shipping state for onward e-waste traffic and move to block such shipments.

VOLUNTARY CERTIFICATIONS

8. Reform certification programs

Voluntary certification systems, R2 and e-Stewards must enhance their programs to share intelligence and provide better enforcement of their standards and share intelligence as outlined in the chart above (The Role of Certifications). Both programs should provide more performance verification methods outside of the normal audit channel. More emphasis must be placed on having organizations provide and verify downstream customers on an ongoing basis. R2 should no longer allow selective facility certification, or automatically exempt other R2-certified companies from downstream due diligence. Both programs must also improve auditor training and establish processes for removing and publicizing willful violators in coordination with each other. To avoid allowing an uneven playing field, both Standards should aim to maintain equal rigor and work together on enhancing policing.

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ENTERPRISE COMPANIES AND ESG PROGRAMS

9. Strengthen enterprise responsibility

OEMs, retailers, and other enterprises running e-Waste takeback programs, must ensure they are not part of the problem. OEMs participating in EPR programs must not levy such low payments to recyclers that they are forced to be unprofitable without exporting e-waste illegally. All companies should require Certifications that include strict export controls, and full downstream due diligence covering all vendors until final disposition. Enterprises are encouraged to support certification programs that include explicit prohibitions on harmful exports, require company-wide coverage, and performance verification (e.g. unannounced inspections) by the Administrator of the Certification and not just by Certification auditors. Enterprises are encouraged to employ GPS tracking services to ensure their takeback programs are ethical and responsible.

10. Prevent ESG Greenwashing

Currently there is a high risk that ESG reporting frameworks fail to distinguish between unethical and ethical recyclers. But such programs must not allow exporters to hide behind claims of carbon savings while outsourcing toxic harm. It is the height of Greenwashing to give credit for carbon footprint reductions via recycling and avoided emissions when the recycling itself is poisoning people and ecosystems through its toxics footprint. Companies and ESG raters must account for toxic impacts alongside carbon accounting to prevent this potentially harmful form of greenwashing.

GENERAL PUBLIC

11. Choose responsible recyclers

Members of the public should beware and take precautions against the prevalent practice of recyclers making use of Brokers of Shame, or they themselves exporting your old electronics into countries where such import is unlawful and harmful. Seek out certified recyclers that first prioritize repair and the reselling of your equipment to give it a second life. And, whether or not that is possible, they must be able to tell you precisely where they will send the various fractions of your old electronics and attest in writing to you that they never export fractions to non-OECD countries. Seek out recyclers that can also tell you that their entire company is certified and not just some facilities. Beware that state-run programs, unless they utilize GPS tracking, cannot usually guarantee against unlawful or inappropriate exports.

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