

CHOOSING AN E-WASTE RECYCLER: WHAT TO LOOK FOR

White Paper

This document is designed to provide a practical understanding of e-waste recycling, highlight the importance of complying with the Environmental Protection Agency's disposal recommendations and their related legal and business concerns, and provide businesses with a detailed list of what they should look for in a reputable e-waste recycler.



EXECUTIVE SUMMARY

Over the past decade, electronic waste (e-waste) has solidified its status as the fastest-growing waste stream globally. In 2022 alone, an unprecedented 62 million metric tons of e-waste were generated — an 82% increase since 2010, and only about 22% of it was formally collected and recycled. Without substantial shifts in consumption, repairability, and infrastructure, this figure is projected to rise to 82 million metric tons by 2030, while the recycling rate may drop to 20%. The drivers of this growth are clear: shorter product life cycles, limited repair and reuse options, and consumer demand for new technology.

While households contribute to the problem, businesses and organizations are particularly significant producers of e-waste through technology refreshes, cloud migrations, and IT downsizing. For these entities, improper disposal carries not only reputational risk but also legal exposure and potential fines under U.S. Environmental Protection Agency (EPA) regulations and international compliance frameworks.

Key Facts on Today's E-Waste Landscape:

- **62 million metric tons of e-waste were generated globally in 2022 — an 82% increase since 2010.**
- **Only 22% of e-waste is formally recycled; projections show this rate may fall to 20% by 2030.**
- **Global e-waste is expected to reach 82 million metric tons by 2030.**
- **As of 2023, only 42% of UN member states had national e-waste legislation or policy in place.**

To mitigate these risks, companies must prioritize partnerships with certified, reputable e-waste recyclers that ensure safe, compliant, and environmentally responsible hardware disposal. Beyond compliance, forward-thinking organizations are embracing circular economy practices — such as refurbishment, resale, and materials recovery to reduce costs, minimize environmental impact, and strengthen corporate sustainability credentials.

WHY IS E-WASTE RECYCLING IMPORTANT

Although e-waste accounts for a small fraction of total landfill volume, it represents over 70% of the toxic waste in landfills worldwide. Once discarded electronics break down, toxic substances such as lead, mercury, cadmium, and brominated flame retardants leach into soil and waterways—or release harmful emissions when incinerated. These contaminants have been linked to cancer, birth defects, and other severe health risks.

E-waste recycling is critical not only to prevent environmental harm, but also to recover valuable raw materials such as gold, silver, copper, and rare earth elements. In 2022 alone, the world discarded billions of dollars' worth of recoverable materials, much of which could have re-entered manufacturing supply chains.

Toxic materials found in common IT equipment include:

- Mercury
- Cadmium
- Lead
- Arsenic
- Beryllium
- Brominated flame retardants

WHY DO SOME COMPANIES FAIL TO PRACTICE PROPER E-WASTE RECYCLING?

Despite these dangers, many companies still fail to practice proper e-waste recycling. In developed countries, cost remains a major factor—if equipment cannot be resold or refurbished, companies sometimes cut corners to avoid disposal expenses. Globally, weak regulations and limited infrastructure have led to illegal exporting of e-waste to developing nations, where unprotected workers dismantle electronics under hazardous conditions, further spreading the health and environmental risks.

In short, responsible e-waste recycling is both a legal and ethical obligation. For businesses, it is no longer optional—it is a core component of corporate sustainability, data security, and regulatory compliance.

HOW CAN A COMPANY ENSURE ITS E-WASTE IS PROPERLY HANDLED?

It is no longer feasible for companies to manage electronic waste on their own. Modern IT assets contain complex mixtures of hazardous and valuable materials that require specialized handling, advanced equipment, and strict adherence to evolving regulations. Responsible e-waste recycling is a labor-intensive and highly regulated process that often involves manual disassembly, controlled material separation, secure data destruction, and audited downstream processing. Partnering with a recycler certified under recognized standards such as R2v3, e-Stewards, ISO 14001, and NAID ensures that toxic materials are safely diverted from landfills, recoverable commodities are returned to the supply chain, and corporate data is irreversibly destroyed. In today's compliance-driven environment, working with a certified recycler is the only way for businesses to be confident that their equipment is being handled responsibly, legally, and sustainably.

Legal and Business Concerns

In today's regulatory environment, companies cannot afford to take shortcuts when managing electronic waste. The EPA, state agencies, and international authorities are actively enforcing e-waste laws, and penalties for mismanagement are becoming both more frequent and more severe.

For example, in 2025 Stericycle, Inc. agreed to pay \$9.5 million in civil penalties for widespread violations of hazardous waste rules, including failures to properly track and manage materials under the Resource Conservation and Recovery Act (RCRA). Similarly, Clean Harbors Environmental Services was fined over \$270,000 in 2024 for mishandling hazardous waste at one of its U.S. facilities. These cases demonstrate that even established environmental services providers are under intense scrutiny for compliance failures.

Worker safety has also become a focus in enforcement. In late 2024, Universal Recycling Technologies (URT) was fined for exposing employees to unsafe levels of lead and cadmium during cathode ray tube (CRT) processing. This underscores that improper e-waste handling poses risks not only to the environment but also to the health of employees involved in recycling operations.

At the state level, regulators are taking an equally strong stance. In Washington, Total Reclaim was fined in 2025 for running an unpermitted battery recycling line, highlighting the importance of obtaining and maintaining proper permits before processing e-waste streams.

HOW CAN A COMPANY ENSURE ITS E-WASTE IS PROPERLY HANDLED?

Cross-border cases illustrate that the issue is global. In mid-2025, Thai authorities seized 238 metric tons of e-waste illegally imported from the U.S., disguised as metal scrap. Around the same time, investigations revealed that U.S. companies are shipping over 1 million tons of hazardous waste annually to Mexico and Canada, sparking public backlash and raising concerns about the health impacts on recipient communities.

To strengthen international oversight, the Basel Convention implemented new rules on January 1, 2025, requiring prior informed consent for both hazardous and non-hazardous e-waste exports and imports. This expansion closes loopholes that previously allowed companies to ship electronics abroad under less stringent classifications.

These developments make clear that improper handling of e-waste carries significant legal, financial, and reputational risks. Partnering with certified recycler — those who adhere to standards such as R2v3, e-Stewards, and ISO 14001, remains the most reliable way for businesses to ensure compliance, protect workers, and demonstrate a commitment to environmental responsibility.



WHAT ARE THE BENEFITS OF CHOOSING AN E-STEWARDS AND R2 CERTIFIED RECYCLER?

Recyclers certified in both e-Stewards and R2v3 are fully aligned with the expectations of today's environmentally conscious and compliance-driven clients. Achieving dual certification demonstrates that a recycler is socially and environmentally responsible, maintains complete transparency in downstream processes, complies with international standards such as the Basel Convention, and upholds rigorous data protection protocols through auditable chain-of-custody documentation and verified data destruction methods.

In addition, certified recyclers help reduce environmental and human health risks associated with improper e-waste handling, improve access to refurbished and reusable equipment, and lower overall resource consumption by decreasing the demand for raw material mining and manufacturing.

WHY ARE BOTH CERTIFICATIONS IMPORTANT?

Although e-Stewards and R2v3 certifications share common principles, each brings unique strengths. Being certified by both signifies that the recycler actively promotes responsible electronics recycling through a balanced approach:

- **e-Stewards enforces a strict "no export, no landfill" policy for hazardous waste and protects workers' rights worldwide.**
- **R2v3 emphasizes robust environmental, health, and safety (EHS) management systems, traceable downstream due diligence, and scalable, auditable operational controls.**

Together, these programs ensure that recyclers maximize reuse and recycling, minimize environmental impact, guarantee safe handling of all materials, and provide verified data sanitization or destruction for every device processed.

CHOOSING A REPUTABLE E-WASTE RECYCLING COMPANY

Selecting a trusted e-waste recycler is no longer just a best practice—it's a core component of any organization's IT asset disposition strategy. Partnering with a certified, transparent provider ensures compliance with environmental regulations, safeguards sensitive data, and supports your company's sustainability commitments. When evaluating a recycler, ask the following questions to confirm their expertise and integrity:

- **Are they e-Stewards 4.0 certified, guaranteeing strict environmental and social responsibility?**
- **Are they R2v3 certified, demonstrating comprehensive environmental, health, and safety (EHS) controls and downstream accountability?**
- **Do they hold ISO 14001:2015 certification for environmental management and ISO 45001:2018 for workplace safety?**
- **Are they NAID AAA certified, with verifiable data destruction processes?**
- **Do they have a documented no-export, no-landfill policy for hazardous waste?**
- **Do they accept and responsibly process all IT equipment types, including servers, networking gear, and storage devices?**
- **Can they provide auditable chain-of-custody documentation and certificates of data destruction?**
- **Do they maintain Errors & Omissions, Cyber, and Pollution Liability insurance to mitigate risk for clients?**
- **Can they supply client references or case studies demonstrating successful enterprise-level IT asset disposition?**

A reputable partner will answer these questions with confidence and provide the documentation needed to prove compliance, security, and sustainability. Organizations that select a recycler meeting these criteria are better positioned to reduce regulatory risk, protect sensitive data, and achieve ESG goals while maximizing recovery value from retired IT assets.

SUMMARY

Responsible e-waste management is a critical element of every organization's IT strategy. Each year, more research reveals the environmental and human health risks caused by improper disposal of electronic equipment, and the regulatory and reputational consequences companies face when these standards are ignored. Partnering with a certified, transparent, and experienced IT Asset Disposition (ITAD) provider is the most effective way to safeguard your organization from these risks.

By working with a recycler that is dual-certified in e-Stewards and R2v3, along with ISO 14001:2015, ISO 45001:2018, and NAID AAA certifications, you ensure:

- Full compliance with international, federal, and state environmental regulations.
- Documented, auditable data destruction to protect sensitive business and customer information.
- Sustainable practices that reduce landfill use, toxic material exposure, and the need for raw material extraction.
- Operational excellence and accountability, with ongoing audits, transparent reporting, and insurance-backed protection.

At Liquid Technology, our commitment to compliance, security, and sustainability positions us as a trusted partner to organizations worldwide. With more than 20 years of ITAD expertise, we help clients turn outdated technology into working capital while supporting circular economy goals and maintaining the highest standards of data protection.

LIQUID TECHNOLOGY CERTIFICATIONS



IT ASSET DISPOSITION CHECKLIST

Liquid Technology

ITAD Certifications



- e-Stewards 4.1
- R2v3
- ISO 14001:2015
- ISO 45001:2018
- ISO 9001:2015

Data Destruction



- NAID AAA Certified
- NIST Compliant Hard Drive Wiping & Shredding
- Auditable Reporting for Data Destruction (Video & Barcode Capture or Digital Certificates)
- Chain of Custody Documentation (with optional GPS tracking)
- Errors and Omissions and Cyber Liability Insurance

Reverse Logistics



- A Dedicated Project Manager to Oversee Each Project
- Detailed Chain of Custody Reporting
- Insured Pickup at Your Facility
- End to End Service (Deracking, Packing, Palletizing)
- Services throughout North America / EMEA / APAC / LATAM
- Online Portal to Submit Requests and Track Projects in Real Time

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