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Fall 2025

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- IT Asset Disposition
- From Trash to Treasure: Rare Earth Comeback
- ERP for the E-Scrap Industry

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FEATURES



IT ASSET DISPOSITION AND ELECTRONICS RECYCLING: NOW AND THEN

The industry has proven more resilient, and at times quicker to adapt, than even those of us close to it expected.

By David Daoud



FROM TRASH TO TREASURE: HOW OLD ELECTRONICS ARE POWERING AMERICA'S RARE EARTH COMEBACK

Rare earth recovery from e-scrap is not just an environmental opportunity but a strategic priority.

By Keith Loria



ENTERPRISE RESOURCE PLANNING FOR THE E-SCRAP INDUSTRY

What ERP system you need depends on whether you're wiping hard drives, fixing up phones, or melting down metals.

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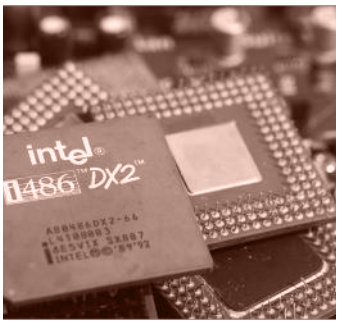
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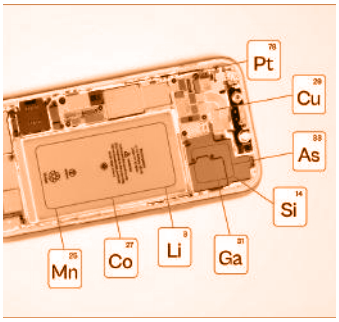
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AT PRESS TIME

The industry developments that were unfolding as we approached deadline. Head to resource-recycling.com/e-scrap for more on these stories.

➤ VALOR LAUNCHES TO REFINE CRITICAL METALS

Kunal Sinha, the former head of Glencore's recycling business, has launched a metals processing startup in New York, which he claims could reduce both the cost and time required to refine copper and other minerals essential for modern industries.

The company, called Valor, is based on technology developed at the University of Illinois Urbana-Champaign. Its process uses ligands, molecules that can be designed to bind to targeted metals when combined with an electric current. Sinha said the approach could capture copper or rare earth elements while avoiding other materials such as nickel.

Valor's approach is being promoted as a potential alternative to conventional smelting and solvent extraction, which are energy-intensive and produce waste byproducts. The company believes its system could be applied to mined ore, spent batteries or even seafloor nodules. Valor has started raising capital to build a demonstration facility in either Massachusetts or New York. The startup aims to reach commercial output of at least five metals within two to three years, pending results from scale-up efforts and securing investors.





◄ STARS OF E-SCRAP IN THE SPOTLIGHT: JERRY POWELL

Few people in recycling carry as much institutional memory as Jerry Powell. Born and raised in Portland, Oregon, he came up through hands-on operations before realizing the industry's biggest need was trustworthy information and connection. He went on to found Resource Recycling, Inc., the company behind Resource Recycling, Plastics Recycling Update and E-Scrap News.

What started as a scrappy print periodical quickly grew into a hub for policy, market and operational intelligence at a time when US recycling was scaling up. As new streams emerged, Powell broadened the enterprise, adding plastics and electronics titles and building national convenings that helped knit the sector together. Resource Recycling, Inc., went on to produce the E-Scrap Conference as well as other marquee gatherings that became annual waypoints for operators, OEMs and policymakers.

Powell sold the company to the Association of Plastic Recyclers in 2019 and shifted into retirement and advisory work, but his imprint remains. This October, the E-Scrap Conference program culminates with a closing plenary moderated by Powell titled "Legends of Recycling," a fitting stage for reflections on the field's formative decades and the lessons that still matter.

➤ TRIPLE-DIGIT REVENUE GAINS PROPEL ABTC'S EXPANSION

American Battery Technology Company (ABTC) reported Q4 2025 revenue of $2.8 million, a 183% increase over the prior quarter, while full year revenue – ended June 30, 2025 – surged 1,149% to $4.3 million compared with fiscal 2024.

This rapid growth was accompanied by strong operational cost control as total operating expenses for the year decreased 30% to $31.4 million despite significant expansion in company operations. As of mid-September, ABTC's cash position stood at $25.4 million.

Despite exponential revenue growth and improved cost management, ABTC posted a net loss of $46.8 million for fiscal 2025, though this represents a 10.9% reduction over the prior year's loss. This net loss reflects the company's costs and investment in expanding its recycling and lithium extraction operations, which still exceeded revenues during 2025.

The company's results are related to the rapid expansion at its Nevada recycling facility and major advances in lithium extraction.



SCALING SOLAR PANEL RECYCLING

OnePlanet names veteran solar executive as first CCO

By Scott Snowden



OnePlanet Solar Recycling, based in Jacksonville, Florida, has appointed Nathan Arbitman as its first chief commercial officer, as the company moves to scale solar panel recycling operations. The announcement follows OnePlanet's $7 million seed round and plans for a $90 million industrial facility in Florida.

Arbitman said his focus will be on market development and customer growth across the solar value chain. "Fundamentally, my role is to help scale the technology and operation, but through an external focus," he told E-Scrap News. "I'm laser focused on both growing the market for solar panel recycling and positioning our company as the leader in that space."

The company is building out its River City project in Green Cove Springs, with commissioning targeted for 2027. "We are planning to start construction on the new facility in 2026 and put it into operation in the first half of 2027," Arbitman said. "We currently have the capability to process half a million panels per year. The new plant will be four to five times that capacity." According to OnePlanet, the plant is designed to process more than 2 million modules annually by 2027, with expansion to 6 million by 2030.

OnePlanet frames its expansion as a response to multiple demand drivers that are largely independent of policy swings, including repowering projects, weather damage and construction or shipping breakage. "All of those things are fully unaffected by the regulatory environment," Arbitman said, adding that "there's lots of panels coming offline," citing retirements from installations that went into service 10 to 15 years ago.

In describing process consistency across generations of modules, Arbitman explained the teardown steps are similar. "Whether a panel was manufactured 15 years ago or last week, each panel at the end of the day has an aluminum frame and a junction box that needs to be removed, and glass that needs to be removed and recycled," he said. "There are metals in there that can be reclaimed and put back into new value chains." He added that OnePlanet has "designed a recycling technology that is especially made for the recovery of silicon, copper, aluminum, silver and plastic."

Traceability and compliance are central to the pitch. OnePlanet provides legally binding Certificates of Recycling tied to service orders and maintains ISO 45001:2018, 14001:2015 and 9001:2015 certifications, while operating under federal rules such as RCRA and CERCLA.



Arbitman said customers increasingly expect documentation that follows assets from pickup through processing. "We should be able to provide a certificate of recycling along with a report to those customers that say, 'this is what we received in and these are the materials that we were able to reclaim.'"

Arbitman most recently served as president and CEO of Endurans Solar, where he led an onshoring push, and previously held senior commercial roles at DuPont Photovoltaic Solutions and DSM Advanced Solar. OnePlanet CEO and co-founder André Pujadas said the hire aligns with the company's next phase.

"Nathan's deep understanding of the solar value chain, combined with his proven ability to scale clean technologies from pilot to commercial operations, makes him the ideal leader to establish OnePlanet as the solar industry's go-to recycling solution," Pujadas said in a press release. "His track record of building strategic partnerships and driving growth will be instrumental as we scale our operations toward our planned River City Project."

Founded in 2023, OnePlanet says its goal is to keep millions of panels out of landfills while feeding recovered materials back into domestic manufacturing. The company's River City project also received a $14.5 million Section 48C investment tax credit this spring in support of US advanced manufacturing. ■

Hawaii sees positive shifts in EPR revisions

By Stefanie Valentic

Hawaii's latest e-waste law revisions expanded both the range of electronics eligible for collection and the number of manufacturers required to fund the program, while also adjusting the state's weight-based recycling targets to address compliance challenges.

"SB 1298 does recognize, after negotiations during the legislative session, that 70% target, but we need a little more time to try and get there in the state of Hawaii," said Katie Reilly, vice president, environmental affairs and industry sustainability, Consumer Technology Association (CTA).

The state passed its first electronics recycling law in 2008, revising it in 2022 to require manufacturers to fully pay for the program when funds for its implementation ran empty months earlier than anticipated.

SB 1298, which went into effect on July 1, 2025, incorporated legacy devices such as fax machines and VCRs, digital media players, DVD players, DVRs and routers and modems. The program now covers new product categories for peripherals such as keyboards, power supplies, adapters and video game consoles.

A manufacturer of only electronic peripherals and not devices is not required to pay into the system. However, manufacturers raised concerns about meeting weight collection targets set at 70%. Consequently, they are set to raise incrementally at 63% for 2025, 66% for 2026 and will ultimately reach 70% in 2027.

Reilly noted a trend in which states are moving to a convenience-based program where if manufacturers meet certain convenience requirements in terms of collection opportunities for consumers, they would not be penalized for failing to meet weight requirements. "Essentially, they would be supporting collections throughout the islands, but if the volume didn't come in, there'd be no penalty associated with that," she said.

The updates also increase reporting requirements for both manufacturers and other stakeholders in the program. Hawaii's Department of Health previously expressed concerns about the number of electronics being collected outside of the program. "There's not much data around that at this point in time," Reilly said. "They're going to be doing an evaluation if the volumes are sufficient to meet the manufacturer targets, again, addressing some of these concerns that CTA has raised over time."

The Department of Health is required to prepare a comprehensive report for the legislature ahead of the 2028 legislative session, examining both the volume of electronics collected within the official program and any collection activities occurring outside the program. This data will help lawmakers and stakeholders understand the full scope of electronics recycling in Hawaii and inform future policy decisions. ■

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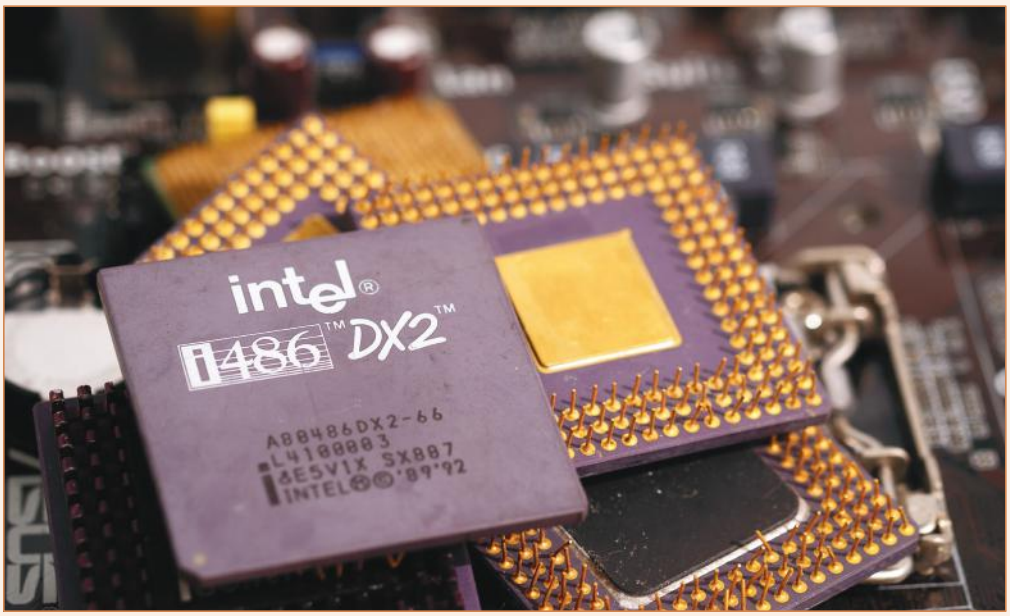
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ADAPTIVE CAPACITY

REACT aims to transform US e-scrap recycling

By Keith Loria



A project spearheaded by Intel-E-Waste is aiming to reshape US e-scrap recycling by delivering cleaner, higher-value diverse product streams and reducing dependence on overseas smelters.

REACT (Recycling E-Scrap with Adaptive Capacity Technology) is a collaboration between Intel-E-Waste, Sunnking Sustainable Solutions, Pennsylvania State University and the National Renewable Energy Laboratory (NREL). The project was a finalist in the 2025 US Department of Energy E-SCRAP Prize, which earned the State College-based operation $50,000 in funding.

Mohammad Rezaee, associate professor of energy and mineral engineering at Penn State University, said REACT is low-cost, doesn't use heat or chemicals, and is designed to match specific feedstock characteristics, throughput and product quality requirements of electronics recycling.

"By leveraging differences in mechanical and physical properties of materials, REACT selectively liberates and separates components into high-value product streams," he told E-Scrap News. Unlike conventional e-scrap recycling, which primarily targets bulk ferrous and non-ferrous metals, REACT maximizes the recovery and grade of critical materials, including aluminum, copper and precious metals, while also recycling plastics, he added.

The technology also processes a wide range of particle sizes, including the often-overlooked under-10 mm precious metal–rich fraction, to help minimize material losses.

"This adaptive capacity makes REACT both a competitive and complementary solution to conventional methods," Rezaee said. "It not only aligns with international regulations such as the Basel Convention but also diversifies and upgrades the value streams available to recyclers, strengthening revenue potential while reducing environmental impacts."

Penn State drives the research and development of the REACT technology. Under Rezaee's direction, the university provides expertise in mineral processing and recycling, supported by advanced laboratory and pilot facilities.

Sunnking Sustainable Solutions has been a major asset by supplying real-world feedstock, process data, operational expertise and continuous feedback on economics and logistics, Rezaee said.

INTEL-E-WASTE ROLE

Intel-E-Waste oversees process design, scale-up and commercialization planning. Engagement with NREL further strengthens the project by providing technoeconomic analysis and life-cycle assessment for data-driven optimization, economic viability and sustainability.

"Together, these roles bridge innovation with practical deployment, ensuring REACT is both scientifically sound and commercially viable," Rezaee said.

REACT was first developed for recovering critical materials from discarded printed circuit boards and was expanded and validated for broader e-scrap in collaboration with industry partners during Phase I of the E-SCRAP Prize.

FEEDSTOCK VARIABILITY

One challenge for the project is the variability of e-scrap feedstocks, which requires consistent delivery of high recovery and grade across very different material streams. Penn State researchers are addressing this by refining adaptive process controls and validating performance with diverse feedstock provided by industry partners.

"Another challenge lies in logistics, since collection and transport of e-scrap remain fragmented across the US, making it essential to design REACT as a modular system that can integrate directly into existing facilities with minimal disruption," Rezaee said. "On the regulatory side, landfill policies vary widely—nearly half of US states do not regulate the landfilling of end-of-life electronics. Our goal is to make REACT cost-competitive with landfill disposal so that recyclers have a viable economic alternative."



"We have demonstrated consistent separation of metals, plastics, glass and critical materials at high recovery and grade levels," Rezaee said. The project partners now are preparing for prototyping and pilot-scale demonstrations with

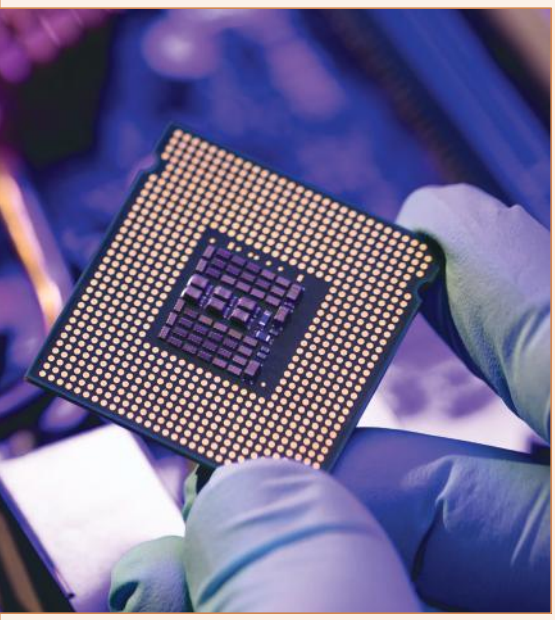
industry partners to move toward commercial deployment.

"Our immediate goal is to build and demonstrate a prototype system through integration at Sunnking Sustainable Solutions and other partner facilities," Rezaee said. "These demonstrations will allow us to refine process efficiency, validate recovery and grade of the product streams, confirm technoeconomic and life-cycle analysis and prove cost competitiveness at pilot scale."

Following that phase, the team would scale up REACT into a turnkey recycling line that recyclers can adopt with minimal retrofit.

The team expects REACT to be ready for early integration by the end of 2026. In the near term, its prototypes will be demonstrated at partner facilities to validate efficiency, cost competitiveness and operational fit.

"Because REACT is heat- and chemical-free, it is designed to slot into existing recycling facilities with minimal permitting requirements," Rezaee said. "This accelerates the path to adoption compared to conventional technologies. With support from industry partners and the DOE E-SCRAP Prize program, our goal is to make turnkey REACT modules commercially available in the next phase of development, positioning recyclers to respond quickly to the growing volumes of e-waste." ■



DATA CORNER

From scrap to strategy: Global battery recycling's next phase

By David Daoud

Ever since I interviewed Lauren Roman of Transparent Planet about the electric vehicle (EV) battery sector and its recycling aspects, I started spending more time tracking what was happening there.

Just over the past two months (summer 2025), the global battery recycling landscape appears to be going through an inflection point. Activity is ramping up quickly in various markets, from North America to Europe, with a flurry of new facilities, partnerships and research breakthroughs suggesting the sector is shedding its pilot project roots and committing to full-scale operations.

INVESTMENTS IN INFRASTRUCTURE

These developments are taking place at a time when end-of-life EV batteries have not yet flooded the market. The scale of investment signals that the industry is preparing for what's coming. Here is a sampling:

- *Princeton NuEnergy opened its flagship recycling facility in Chester, South Carolina, in August, focused on manufacturing scrap and producing battery-grade cathode materials, boasting* ***recovery rates above 97% for lithium, nickel, cobalt and manganese****.*
- *Aqua Metals in Nevada is laying groundwork for strengthened domestic battery recycling through a* ***$4.99 million US Department of Energy (DOE) consortium*** *with Penn State. American Battery Technology Company is also pushing ahead in Nevada, buoyed by a* ***$144 million DOE grant for expansion****.*
- *Clarios in Europe acquired* ***three additional plants in Germany and Austria****, while Glencore wrapped up a takeover of Li-Cycle's US assets, consolidating black-mass processing under major global players.*
- *Alberta, Canada launched* ***upgraded battery collection services*** *on September 4, 2025. Battery producers are now accountable for end-of-life management under Extended Producer Responsibility regulations. This move toward accessible recycling may set an example for other regions.*
- *BMW of North America teamed up with Redwood Materials, which* ***recovers up to 98% of valuable battery metals*** *and returns them to the supply chain.*
- *MIT researchers in Cambridge, Ma. announced a new "self-assembling electrolyte" engineered to break apart in simple liquid,* ***allowing batteries to be cleanly separated into components*** *rather than shredded.*
- *GlobeNewswire* ***valued the sector at $22.75 billion in 2024****, potentially jumping to* ***$41.66 billion by 2030****.*

GROWTH ON THE HORIZON

Despite this momentum, the industry is still in its infancy. Most incoming material isn't post-consumer EV batteries but manufacturing scrap, warranty returns and electronics batteries. The true tsunami of battery retirement is years away.

What I see in leading recyclers is keen acknowledgment that long-term competitiveness hinges on building partnerships, securing feedstocks and investing in regulatory credibility now, before the volume surge begins. ■

David Daoud is Principal Analyst and President of Compliance Standards, Inc.

INFRASTRUCTURE UPGRADES

Industry trends point to opportunity for ITAD firms

By David Daoud

In its recent quarterly investor call, Hewlett Packard Enterprise (HPE) was the latest technology firm to credit a sustained cycle of enterprise infrastructure upgrades for a prolonged increase of used equipment into secondary markets.

During the September 3 investor call, CEO Antonio Neri said customers are leaning into Gen12 servers as replacements for older lines, with the newer machines taking up less space and using far less power. That shift means prior-generation systems are beginning to be decommissioned, creating a pipeline of still-capable equipment for resale.

On the networking side, the story looks much the same. Orders for Wi-Fi 7 gear jumped, and Juniper's data-center switches have broadened HPE's catalog. As buyers adopt these newer platforms, earlier Wi-Fi 5 and 6 hardware will increasingly move into their decommissioning phase.

Another part of the picture is government and regulated-sector projects tied to AI. HPE said orders in that category more than doubled from the previous quarter. Such deployments often come with strict requirements for how equipment is handled at end of life, raising the bar on secure logistics and data destruction.

Storage is turning over as well. The company's Alletra MP arrays are gaining traction, creating decommissioning opportunities for legacy storage gear. That change is happening alongside a shift in virtualization platforms, further adding to the stream of equipment no longer in active use.

For its fiscal third quarter 2025, HPE reported $9.1 billion in revenue during the quarter, an 18% jump from last year. Servers accounted for nearly half, with $4.9 billion in sales, a record for the company. About a third of that came from systems built for artificial intelligence. Networking revenue rose sharply as well, helped by the acquisition of Juniper Networks in July.

Another area of strength for HPE is its Finance and IT business, which includes the lease returns unit. The leasing arm brought in nearly $900 million during the quarter and continues to manage a large volume of end-of-lease returns. Much of that gear is processed through HPE's own renewal centers, where equipment is sanitized, refurbished and often remarketed. That keeps high-quality returns under OEM control and leaves fewer opportunities for third-party ITAD firms to capture.

Still, as evidenced by this earnings season, servers, networking gear and storage are all cycling forward, and the volume of used equipment entering the market will likely continue to rise for the foreseeable future. ■

e-Stewards

‘Vape effect’ blamed as facility fires hit summer records

By Scott Snowden



Waste and recycling facilities across the United States and Canada saw another surge in fires this summer, with July and August setting back-to-back monthly records, according to Ryan Fogelman, VP of Fire Protection at Fire Rover.

Fogelman, who has tracked publicly reported facility fires since 2016, said the industry has shifted to a higher, year-round risk baseline fueled by what he calls the “vape effect,” or the growing presence of lithium-ion batteries from disposable vaping products in the waste stream.

The data he compiled show a nearly 20.6% increase in reported fires when comparing 2016-2021 with 2022-2025.

The first half of 2025 was the worst start to any year, Fogelman said. July logged 56 reported incidents, the most ever recorded in a single month, while August followed with 49, the highest total ever for that month. Those figures underscore a seasonal pattern that has changed in character, with May and June at multiyear lows for this time of year and July and August among the highest.

August’s reported fires were spread across multiple facility types. Nineteen incidents occurred at waste, paper and plastics facilities. Fourteen were at metal recycling yards. Organics facility operators saw seven, rubber operations four, construction and demolition sites two, electronics recycling operations two and hazardous materials operations one. Based on year-to-date numbers, Fogelman projected about 450 publicly reported incidents in the US and Canada by year-end, which would be a 5% increase over 2024.

Metal recyclers showed a modest improvement compared with last year. Reported fires at scrap yards fell 15% versus 2024, though September and October have historically run hotter for this sector, which means the final picture is not yet set. Fogelman credited wider adoption of upgraded yard-level fire protection with reducing the risk of large, smoky events that draw public attention and can shut operations.

Electronics recycling sites and organics facilities have also notched slight declines so far in 2025. Even so, counts remain elevated against long-term averages because more facilities have opened in North America, broadening the denominator and keeping incident totals high.

Fogelman’s analysis pointed to disposable vapes as a key driver. He said that the rapid growth in single-use devices has pushed more embedded lithium-ion cells into bins, trucks and in-feeds, where they can short, overheat and ignite. Evidence from the United Kingdom illustrates the challenge. A nationwide ban on single-use vapes took effect June 1, yet waste company Biffa reported a 7% rise in incorrect vape disposals across its material recovery sites in June and July, including a 24% surge at Teesside, where 232,500 now-outlawed vapes were tossed into recycling rather than taken to drop-off points.

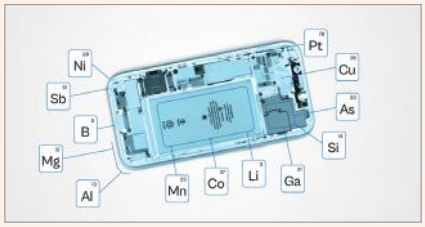
In the US, industry groups are leaning on consumer education and convenience. The National Waste & Recycling Association’s Battery Safety Now campaign recently revived Woodsy Owl with the message “Skip the Bin, Turn Your Batteries In,” pairing safety warnings with a locator for drop-off sites. Fogelman supported that approach and said that education and accessible collection will need to scale alongside technology at plants and transfer stations. ■



E-WASTE RECYCLING IN THE EU

International E-Waste Day focuses on critical raw minerals

By Nora Goldstein



On October 14, the WEEE Forum (Forum) – a nonprofit association of 50 waste electrical and electronic equipment (WEEE) producer responsibility organisations across the world — held its 8th International E-Waste Day with a spotlight on critical raw materials (CRM). "Geopolitics are highlighting how important these materials are," said the Forum. "And while many people have heard about CRMs by now, not all of them know that these elements can be recovered from unused or broken electronic products sleeping in our drawers and attics."

In Europe, the recent CRM Act sets ambitious targets: by 2030, 10% of annual CRM consumption should be sourced domestically, 40% should be processed within the EU, and 25% should come from recycling. "This last goal cannot be reached without higher volumes of e-waste being collected and more specialized technology being developed," noted the Forum. "Pushed by this legislation, there are currently new innovative technologies being developed to enable efficient recycling of CRMs, which are only available in very small quantities in the used electronic equipment and require a very elaborate treatment. Well-functioning processes have been in place for many years, though, for materials such as copper or aluminium."

A recent study authored by TNO shows that selective recovery of CRMs from e-waste could contribute up to 31% of the EU's current CRM demand. Key to that growth is getting consumers to "make the crucial step of bringing their end-of-use electricals to dedicated collection points," said the Forum. "A study of WEEE Forum and UNITAR showed that households own an average of 74 EEE items (excluding lamps and luminaires), of which 61 items are in use, nine are hoarded but working, and four are hoarded and not working. The total mass of items in households is 90 million metric tons of which 7 million metric tons are hoarded and working, and 3 million metric tons are hoarded and broken."

By returning these items through official collection channels, consumers play a direct role in keeping critical resources in the loop and supporting the circular economy, and the 2025 International E-Waste Day was instrumental in providing guidance, tools, and local events to help citizens "make informed choices and dispose of their electricals responsibly." ■



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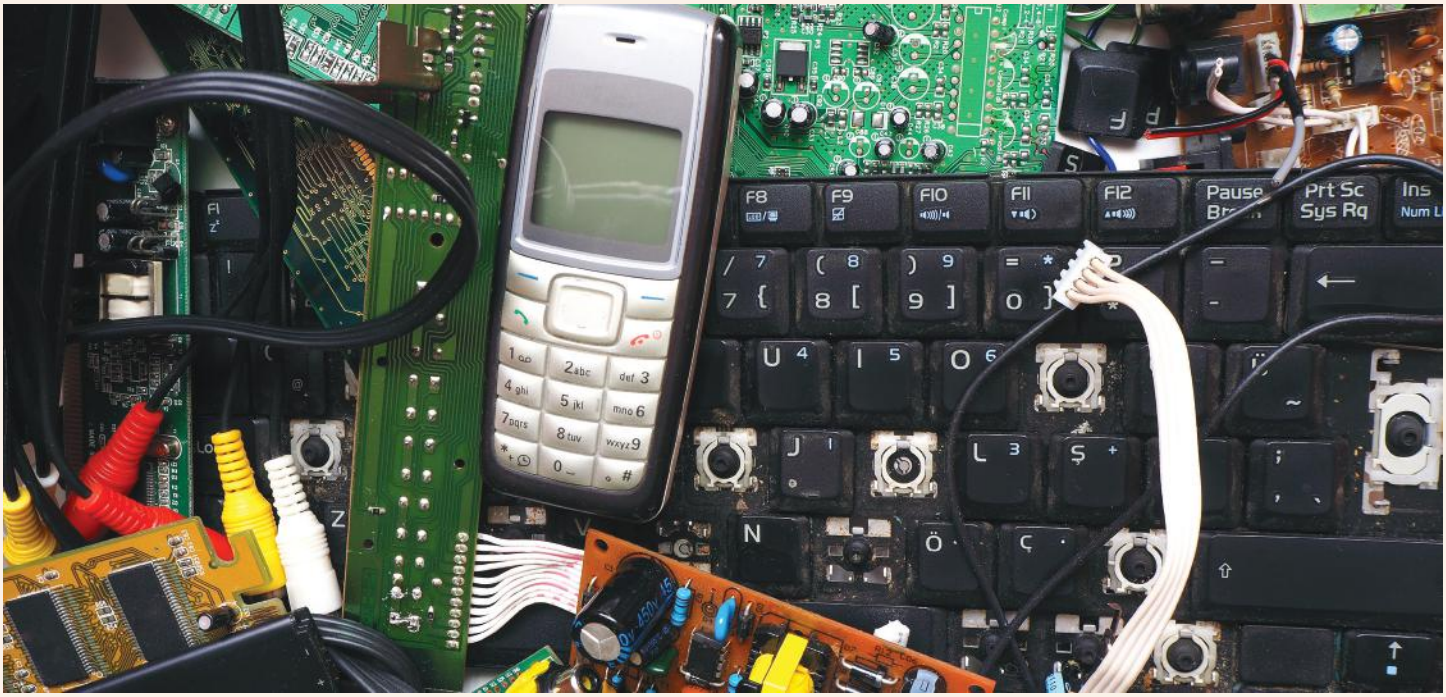
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SCAN ME

PRIVATE EQUITY EVOLUTION

How PE3.0 is transforming the ITAD sector

By David Daoud



The ITAD and electronics recycling sector is in the midst of a private equity evolution, one that is reshaping the business of retiring old technology as we know it. At the heart of this transformation are a handful of investors who bring capital, but also operational discipline, bold ambition, and a more tangible vision for circularity. Their current stance and strategies bring some clarity as to where the ITAD industry may be headed, and the pace at which new models for asset recovery are taking hold.

Over the past 20 years in ITAD and electronics recycling, private equity has ebbed and flowed, as funds entered the sector with promises of efficiency and quick financial returns. It wasn't long ago that their involvement was limited to balance sheet juggling and the occasional acquisition, only for ownership to change hands once the numbers lined up or the experience failed. But today, the landscape is changing.

Recent investments have begun to shift the entire conversation. In these latest acquisition transactions, the investors are present, visible, and ready to contribute operationally alongside management, contrasting with the days of passive capital. What we're witnessing is a real commitment to operational excellence, data security, and integrated service. There's a sense that we are entering a "PE3.0" era, where the focus is on building platforms as much as portfolios.

Compliance Standards LLC – the author's company – believes that these moves are about more than money, setting the stage for "real" industry transformation. The latest such transaction is that of newcomer Tailwind Capital investing in ITAD firm DMD, to expand its coverage and refine its service-first approach. More investments like these are expected to follow. As competition is heating up, customers stand to benefit from better services, more transparent compliance practices, and a stronger technology backbone.

Prior to the Tailwind investment in DMD, many other equity firms positioned themselves to capitalize on ITAD sustainability. SER Capital Partners is assembling Paladin EnviroTech, quickly creating a national footprint by rolling up local processors. Closed Loop Partners, too, has graduated into a circularity specialist, while leveraging a unique blend of venture, credit, and direct operational involvement. Every investor brings something different to the table, but all share a common end-game and the determination to push the industry further.

For those who've spent years tracking ITAD, the result feels overdue. Research at Compliance Standards shows the average ITAD firm is decades old, often family-run, with deep roots but generally open to change. As new capital pours in, we're seeing waves of professionalization: fresh executive teams, new KPIs, consolidated regional players, and an emphasis on international reach and robust technology infrastructure.



For too long, ITAD has been orphaned among outsourcing decisions, with

vendors often fighting skepticism around data security and environmental stewardship. Now, as more private equity sponsors roll up their sleeves, the sector is stepping forward, ready to collaborate, innovate, and finally win that trust.

As investors and operators begin to work more closely together, the future of ITAD will likely be influenced by collaboration, integrity, and shared purpose. From Wall Street to the warehouse floor, it's clear that hands-on capital is here.

Looking ahead, we see a wave of new capital energizing and reshaping the ITAD sector via investment, and the mentoring of teams, introducing new benchmarks, and encouraging more transparent and measurable growth. The expected push on the professionalization front will be coupled with smarter compliance, better data security, and a wave of service innovation. Regional firms will be compelled to merge, creating stronger, more resilient networks. The focus on chain-of-custody and asset tracking is sharper than ever, and companies are stretching their reach internationally, powered by technology-driven operations.

To learn more about this topic, make sure to join us at the EScrap Conference 2025 where a session will be dedicated to M&As in ITAD. The details can be found at: https://www.e-scrapconference.com/ ■

PROGRAMS IN ACTION

A look at recent updates from state e-scrap recycling systems in North America

MADISON, WISCONSIN
Wisconsin completed a $4.6 million e-waste cleanup linked to 5R Processors' illegal handling of leaded glass under 2021 Wisconsin Act 234, removing over 1.5 million pounds across West Bend, Catawba and Ladysmith sites with support from the Wisconsin Department of Natural Resources, US EPA and local governments, opening the door to redevelopment and future community use.

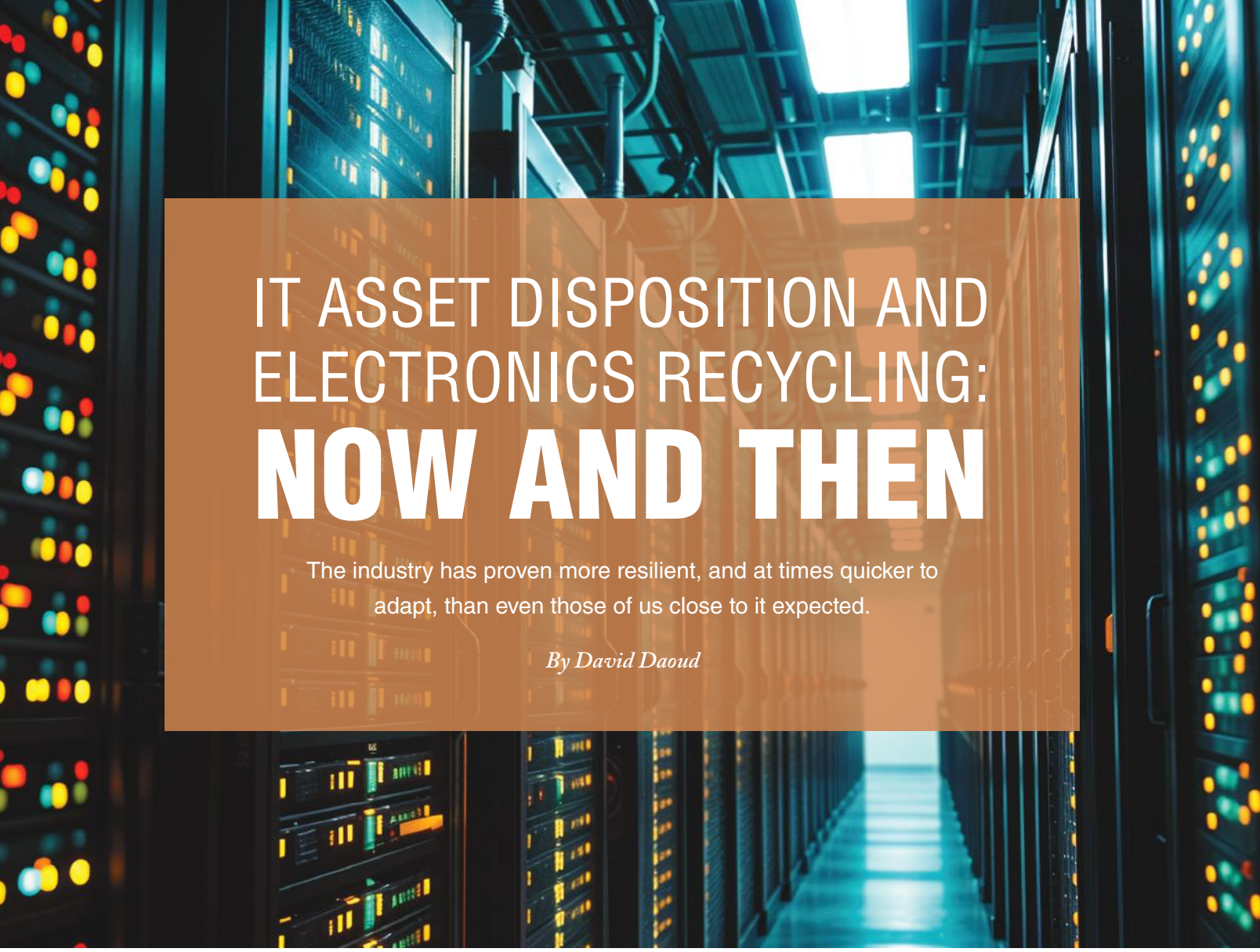
NASHVILLE, TENNESSEE
Vanderbilt IT announced a permanent e-waste drop-off at Hill Center, after FY25 events collected nearly 4,000 pounds and yielded 5,556 pounds of greenhouse gases avoided, 114 pounds of toxic metals diverted, 634 gallons of water saved and 1,346 pounds of metal recovered. A full-scale event for larger items is being planned.

SANTA ANA, CALIFORNIA
Goodwill of Orange County's Computer Works in Santa Ana sells electronics and removes donor data through a multistep screening, with deals such as computers from $59.99 and phone cases at $1.99. The store diverted 972,385 pounds in 2023, 908,842 in 2024 and 507,000 in 2025, generating over $18 million since 2008.

JACKSON, MISSISSIPPI
The Mississippi Department of Environmental Quality will hold an e-waste collection on Friday, October 24 from 8am to 2pm at the Mississippi Farmers Market for Hinds, Rankin and Madison counties. Most items are free; fees are $2 for flat-screen monitors, $5 for CRTs and $15 for TVs.

CHEVY CHASE, MARYLAND
Computer Recycling expanded its e-waste pickup service to all Maryland counties, offering door-to-door collection for businesses, schools and agencies while following federal, state and local rules. The program emphasizes reuse and material recovery and includes approved on-site or off-site data destruction and recycling certificates, with pickups online or by phone.

DAGGETT, MICHIGAN
Michigan regulators finished a cleanup of a large illegal e-waste dump in Menominee County in spring 2025. The site began as a small paid drop-off, expanded into roadside piles, drew neighbor complaints, included a fatal house fire and concluded with Michigan EGLE funding creation of 14 Upper Peninsula drop-off sites to improve proper disposal.



IT ASSET DISPOSITION AND ELECTRONICS RECYCLING: NOW AND THEN

The industry has proven more resilient, and at times quicker to adapt, than even those of us close to it expected.

By David Daoud

The information technology asset disposition (ITAD) and electronics recycling industries are in the midst of one of the most dynamic periods in their history. What was once a back-end service focused on hardware disposal over the past 40 years has grown into a global system tied directly to enterprise IT planning, compliance obligations, commodity markets and even infrastructure investment.

What comes next will be even more pronounced. The sector today is expanding and consolidating at the same time, and executives are finding opportunity and risk bound tightly together.

HAVE EARLIER FORECASTS MEASURED UP?

Before examining the current state of play and where I expect the industry to move next, it's worth reflecting on how earlier forecasts have measured up. At the end of 2023, I sat down with Jared Paben, then with E-Scrap News, to map out likely scenarios for 2024 . We anticipated a sluggish first half of the year, followed by a stronger second half as AI-capable PCs and the Windows 10 retirement cycle gained momentum. That projection held true. The first six months were quiet, with enterprises cautious in their spending, while the back half of the year saw the first organized replacement programs and a noticeable uptick in AI-related refresh activity.

We also foresaw component markets rebounding before commodities, and that sequence largely played out. Memory and processor resale values began recovering sooner than copper or mixed plastics. Where we underestimated change was in ESG (environmental, social and governance principles) and regulatory pressure. Plastics remain a burden, but by late 2024 Extended Producer Responsibility (EPR) laws and ESG disclosures had moved from background factors into central client requirements, more quickly and forcefully than either of us predicted.

In early 2025, I revisited these themes with Colin Staub, formerly of E-Scrap News. That discussion was shaped by tariff disputes, election-year uncertainty and slowing PC sales. We correctly identified unpredictability, not tariff levels themselves, as the greater challenge, and that has proven true. Shifting trade rules continue to complicate flows and raise costs, while rare earth and critical minerals have emerged as even sharper pressure points than we expected. Where our outlook missed was in refresh behavior. We wondered whether enterprises would hold onto devices longer; in practice, AI adoption and compliance deadlines have kept refresh cycles on track. We also explored nearshoring and in-country manufacturing as potential growth

areas, but so far those remain exploratory rather than transformative.

Both conversations, however, were right to emphasize the growing weight of data centers. In 2024, we treated them as one driver among many. By 2025, we went further, calling data center decommissioning the "growth engine for the whole industry." That description has only grown more accurate, as hyperscale refreshes now dominate the most competitive segment of ITAD.

CURRENT STATE OF THE SECTOR

These reflections underline a simple lesson: forecasts are strongest when they link ITAD to broad technology and economic cycles, Windows 10, AI hardware, compliance, and weaker when they wander into speculative territory. The industry has proven more resilient, and at times quicker to adapt, than even those of us close to it expected. With that context in mind, it is worth turning to what the sector looks like today, and where it is heading.

Consolidation is one of the most visible shifts. Private equity–backed roll-ups are changing the competitive map, producing multinational platforms that combine logistics, refurbishment, and recycling under one roof. I will be probing some executives who contributed to the ITAD M&A this year at the E-Scrap Conference on October 27-29, 2025. Some investors have been particularly aggressive with acquisitions and facility expansion. For smaller independents, the pressure is intense, though not every firm is being swallowed up. Some are still finding room to grow by focusing narrowly on specialized compliance work, serving only data centers, or cultivating high-touch local contracts where scale is less important.

Original equipment manufacturers (OEMs) are another source of pressure. Companies such as Dell, HP, Lenovo, and HPE are bringing more customers into their own takeback and lifecycle programs. That restricts the flow of some of the best equipment into the open market. Independent operators complain of losing ground, though many continue to win direct contracts with enterprises and hold onto quality streams. The reality is nuanced: opportunities are still there, but the field is narrowing.

For now, asset volumes are high. The retirement of Windows 10, the first real wave of AI-capable PCs, and major data center upgrades have created a surge of inbound equipment. More devices are moving through ITAD facilities than at any point in recent years. But the flood is uneven. Much of what arrives is low-value, limiting resale prospects and making processing expensive. Industry benchmarks suggest throughput alone is not enough to protect margins.

"The retirement of Windows10, the first real wave of AI-capable PCs, and major data center upgrades have created a surge of inbound equipment."

On the subject of margins, executives disagree. Many point to higher costs for labor, logistics, energy and compliance as evidence that profitability is fragile. Some admit they are moving more material but seeing less fall to the bottom line. Others, however, are having a very different experience. A few CEOs are telling me that margins are "excellent and rising," helped by access to enterprise clients with valuable equipment and by favorable commodity pricing. This divide shows just how uneven the industry has become.

COMMODITY PRICES

Commodities are a mixed blessing. Stronger demand for copper, plastics and critical minerals has helped recovery values, giving operators some financial relief. To make this statement more accurate and reflective of current 2025 conditions, the emphasis could be placed on both the operational improvements and the recent volatility in commodity pricing, rather than suggesting an across-the-board improvement in markets.

Here's a more precise version: Although recycled commodity prices themselves have remained volatile, sometimes lower year-over-year, large waste and recycling companies such as WM and Waste Connections have reported improved financial and operational performance in 2025, driven by stronger pricing, efficiency gains, and selective commodity recovery investments. It is also the case that recent earnings improvements are as much due to process upgrades and disciplined pricing as to market conditions. In this context, this trend indirectly supports ITAD.

Equipment suppliers like TOMRA, Andritz and Hillenbrand are also seeing new orders for advanced sorting lines, pointing to a broader investment push. But no one forgets how volatile commodity markets can be. Industry leaders warn that relying too heavily on scrap values is risky, and urge operators to build margin strategies that do not depend entirely on downstream pricing.

Compliance is another double-edged reality. Customers want ironclad evidence that their data is destroyed and their devices responsibly handled. This creates room for ITAD firms to differentiate and charge premiums. But repeated breaches and controversies around certification have damaged trust in the sector. The Wisetek incident and the guilty pleas in the US over fraudulent surplus sales remind everyone of the stakes. Executives expect compliance to evolve from a paper-based system of certificates to real-time, auditable verification, possibly even blockchain-based, where clients can see exactly what happens to their assets.

The regulatory environment is shifting too. EPR laws are

multiplying in Europe and now in several US states, placing more obligations on manufacturers and recyclers. Enterprises are also under pressure to embrace the circular economy model, where reuse and resale come before recycling. For ITAD companies, this puts resale channels at the center of both ESG reporting and financial strategy.



TECHNOLOGY AND ASSET FLOWS

Technology is reshaping operations as well. Artificial intelligence and robotics are no longer limited to pilot programs on the plant floor. Machine vision is helping with asset triage, predictive analytics is steering resale channel decisions, and compliance dashboards are pulling data into client reports. Larger firms are embedding these tools more quickly, while midsize operators are moving cautiously given capital constraints. The way things are headed shows that AI is becoming a standard tool of the trade, even if adoption is uneven.

Asset flows themselves are changing shape. Chief information officers (CIOs) have had to rethink asset management as remote and hybrid work has reshaped enterprise IT fleets, with more distributed devices being refreshed more often. That has added complexity for ITAD firms but also enlarged the secondary market. At the other end of the spectrum, hyperscale and colocation data centers are creating their own growth stream. With operators such as Equinix and CBRE expanding capacity, decommissioning projects will provide high-value hardware streams for years to come. Yet only a limited number of ITAD firms have the scale and compliance infrastructure to win those contracts. OEMs and integrators are moving aggressively into this territory, and competition is fierce.

In the short term, the industry can expect both windfalls and bottlenecks. The Windows 10 replacement cycle will generate volumes unlike anything seen in years, but it will also test the limits of processing, current asset tracking technology and logistics capacity. OEMs will keep pushing clients toward their own managed programs. Investors will continue to inject capital into larger operators, raising the bar for independents.

WHAT'S AHEAD

Looking further out, over a three- to five-year horizon, structural transformation will take hold. Automation and AI will move from optional tools to basic requirements. Sustainability and ESG reporting will draw ITAD into the center of enterprise sustainability strategies. Battery recycling and hazardous streams will expand, particularly in Europe and Asia where regulation is clearer, while the U.S. continues to lag. Global regulatory harmonization is inching forward but will take years outside the EU.

Through it all, transparency and trust remain the defining issues. Certificates still matter, but clients increasingly want to see evidence – digital, auditable, and verifiable – of exactly where their equipment goes and how it is processed.

The mood in the sector reflects this complexity. Many executives are energized by the asset flows, the commodity support, and the promise of automation. Others are cautious, pointing to thin margins, OEM dominance, certification fatigue, and the costs of modernization. Some see their margins climbing; others worry about holding the line.

The ITAD and electronics recycling industry today is caught between growth and risk. The short term will be dominated by surging volumes and strained logistics. The longer term will demand adaptation to automation, ESG integration, EPR compliance, hyperscale data center work and asset flows reshaped by remote work. If you are an executive in the sector, the real test will be holding onto that momentum today – while getting ready for a tomorrow where transparency, innovation, and trust are the standards for survival.

To see how the sector will shape up in the future, join me at a workshop I've organized on October 27 at the E-Scrap Conference (https://www.e-scrapconference.com/schedule). The 90-minute workshop, which is called "ITAD Sector Outlook: Market Momentum, Strategic Maturity and Emerging Risks, will be held at 9:15 AM. ESN

David Daoud is Principal Analyst and President of Compliance Standards LLC, where he leads research on the IT asset disposition (ITAD) sector and adjacent industries. He has tracked the IT hardware market since 1996, expanding into disposition research in 2003, and has advised technology and financial clients worldwide. Previously, he worked as a Research Analyst at Computerworld and as a Data Analyst at Harvard University. David is also an editorial contributor to Resource Recycling and E-Scrap news. David is currently writing a book on Sustainable IT in the Age of AI due out in mid-2026.

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FROM TRASH TO **TREASURE:**

HOW OLD ELECTRONICS ARE POWERING AMERICA'S RARE EARTH COMEBACK

Rare earth recovery from e-scrap is not just an environmental opportunity but a strategic priority.

By Keith Loria

Increased interest in securing domestic supplies of critical minerals is resulting in a recent wave of innovative projects across the US, turning old electronics into a new source of rare earth elements (REE).

"Domestic policy and funding are supporting the increase in capacity that has never been seen before in the United States for recycling, processing and refining critical minerals to meet projected demand over the next decades for metals such as lithium, cobalt, nickel, etc.," said Danielle Spalding, vice president of public affairs at Wixom, Michigan-based Cirba Solutions, which is extremely active in battery and electronics recycling, recovering critical minerals from complex waste streams.

From hard drive magnets pulled out of data centers to many companies experimenting with pulling REE from e-scrap, today's recyclers, manufacturers and research institutions are rapidly scaling efforts to reclaim neodymium and other key materials once considered out of reach.

The reason? Supply chain vulnerabilities, geopolitical tensions and surging demand for clean energy technologies have made rare earth recovery from e-scrap not just an environmental opportunity but a strategic priority.

Those factors are why rare earth recovery has become more mainstream within the electronics recycling field. In just the past year, a series of high-profile initiatives have signaled growing momentum: Apple and MP Materials inked a landmark agreement to process magnets from retired devices; Metallium is constructing a Texas facility designed to extract rare earths and other critical minerals from e-scrap; Indianapolis-based RecycleForce is piloting recovery inside an active recycling plant with support from a national laboratory; and HyProMag has partnered with Intelligent Lifecycle Solutions to secure steady hard drive magnet feedstock for a new U.S. plant.

September's Electronics Sustainability Conference even held one of its main sessions on the topic, showing how industry leaders now view rare earth recovery as both a business opportunity and a strategic necessity.

OPPORTUNITIES FOR RARE EARTH RECOVERY

When it comes to recycling REE, not all electronics are created equal. While some devices contain concentrated, easily accessible sources of REE, others make recovery far more complex and inefficient.

Sally Tran of the Electronic Recycling Association noted that

while its primary focus is on extending the life cycle of electronics through reuse, refurbishment and donation before recycling, it works closely with certified downstream recycling partners who handle the responsible processing of end-of-life devices, including the recovery of metals such as neodymium from hard drive magnets.

"We actively share industry updates, best practices, and opportunities with our partners to encourage the adoption of advanced recovery methods," she said. "We have seen a gradual increase in interest from our network, particularly as the demand for sustainable sourcing and the circular economy grows. However, the specialized nature of REE recovery means that many organizations are still in the exploration stage."

Pragathi Darapaneni, Ph.D., senior materials scientist with more than 14 years of experience in rare-earth-free material innovation, surface engineering and sustainable energy technologies, noted high-grade neodymium-iron-boron (NdFeB) magnets from hard drives, wind turbine generators and MRI machines are among the best recovery opportunities as they have high REE concentration and relatively standardized form factors.

"On the other hand, phosphor powders from fluorescent lamps and LEDs are more challenging because REEs are dispersed in a complex chemical matrix and often contaminated with mercury or other heavy metals," she said. "Miniaturized electronics, such as smartphones, contain REEs in smaller, more scattered quantities, making recovery less economical without high-throughput automated disassembly."



Pini Althaus, co-founder and CEO of New York-based REEMAG, which recycles end-of-life magnets by use of low-energy electrochemicals that separate the magnet at its grain boundaries, keeping the NdFeB crystal phase intact, noted this method recovers a powder that can go straight back into high-performance magnets.

"Every batch is tested for phase purity, oxygen content, particle size and magnetic performance," he said. "Independent labs have shown our recycled powder matches the coercivity and remanence of commercial N35–N44 grades. By preserving the original alloy structure, we give manufacturers a material that presses, sinters and performs just like virgin feedstock, often without the need for blending."

The result is less energy, zero chemical waste and a direct "magnet-to-magnet" pathway that closes the loop considerably faster than conventional routes.

"Moving from single units to 35-kilogram batch modules was about more than turning up the dial," Althaus said. "We had to engineer oxygen control, refine particle size management and design rinse and drying stages that worked at scale. The process now consistently handles mixed and coated feedstock, materials most recyclers reject, without costly pretreatment. Stable output at batch level means we're now firmly in pilot production territory, with a clear line of sight to multi-module, commercial-scale deployment."

The company sources its end-of-life magnets from a broad base: hard drives and speakers from e-waste streams, large-format magnets from industrial motors and EV drive units and decommissioned wind turbine rotors.

"Thanks to our ability to process glued, coated, and commingled magnets, we can take in cheaper, more abundant scrap, cutting feedstock costs while securing volume," Althaus said.

Over the next year, REEMAG is moving from pilot to production with a 1,000-metric ton/year modular facility and active offtake talks in wind, electronics and automotive.

"To secure feedstock and boost resilience, we're building partnerships in India, the United Arab Emirates and other strategic markets," Althaus said. "Our next stage isn't just about capacity, it's about intelligence. A new digitized circular supply chain will map feedstock material flows across geographies, with blockchain traceability, carbon accounting and real-time logistics optimization."

KEY MATERIAL AND SEPARATION CHALLENGES

Recovering REE from discarded electronics is challenging because they are deeply embedded in complex materials and tightly bound with other elements, so extraction and purification cause issues.

"The main challenge is that REEs are almost never present in pure form — they're embedded in alloys, magnets, phosphors or glass, and tightly bonded with other elements," Darapaneni said. "Separating them requires breaking down complex, multi-material assemblies without losing material in the process. In permanent magnets, for example, neodymium and dysprosium are alloyed with iron and boron, making selective separation chemically demanding."

The Electronic Recycling Association noted the big issues its partners report include the high cost of specialized recovery equipment, the complexity of dismantling certain components and the limited availability of economically viable processing options in North America. Logistics, material contamination and scale also present operational hurdles.

CHEMICAL SOLUTIONS

More recently, emerging chemical and electrochemical leaching techniques are opening new pathways to tackle the intricate mix of metals, coatings and polymers in electronic waste, offering more selective and efficient ways to extract rare earth elements.

"Traditional hydrometallurgical processes use strong acids to dissolve REEs, but they produce large volumes of hazardous waste and lack selectivity," Darapaneni explained. "Newer methods use tailored ligands, ionic liquids or bioleaching to selectively bind REEs while leaving base metals behind. Electrochemical leaching allows for in-situ control of dissolution potential, minimizing co-dissolution of contaminants. These innovations can process mixed waste streams with lower chemical consumption, reduced secondary waste and higher selectivity, improving both environmental and economic feasibility."



THE COATING CHALLENGE

Surface treatments and protective coatings can either act as barriers that trap rare earth elements inside devices or, when designed with recyclability in mind, help streamline their recovery. Many components are coated, plated or encapsulated in epoxy, which can resist processing.

Contamination from base metals, plastics and solders further complicates separation and purity control.

Surface coatings such as nickel plating on magnets or polymer encapsulation in sensors can significantly hinder recovery by adding extra processing steps for stripping or thermal decomposition, Darapaneni noted, explaining these layers must be removed before chemical leaching to avoid contamination.

"On the enabling side, some emerging designs use sacrificial or water-soluble coatings that dissolve under mild conditions, exposing REE-rich materials without harsh pretreatment," she said. "Strategic surface engineering during manufacturing could make end-of-life disassembly and separation far more efficient."

POSSIBLE GAME-CHANGERS TO INCREASE E-SCRAP REE RECOVERY

Experts in the industry are seeing a host of breakthrough technologies and federal initiatives that could help to transform rare earth extraction from electronic scrap into a scalable, efficient process.

For instance, the US Department of Energy's Critical Materials Institute has been driving research into magnet-to-magnet recycling, where NdFeB magnets are directly reprocessed into new ones without fully separating REEs into oxides.

Projects at Ames Laboratory and Oak Ridge National Laboratory are also exploring membrane-based separations and plasma processing, which could dramatically cut chemical use.

On the industrial side, companies like Urban Mining Co. and USA Rare Earth are scaling automated disassembly and short-loop recycling to capture REEs before they're lost to shredding.

Spalding noted that currently, the U.S. is heavily reliant on foreign sources for critical minerals, making us vulnerable to volatile market prices and disruptions to supply chains.

"To reduce this dependency, we need to prioritize diversifying our supply chains, and one way to do this is to increase US capacity to recycle end-of-life batteries to extract critical minerals to be put back into the domestic supply chain," she said. "By repositioning ourselves as a leading producer of critical minerals, we can reduce the nation's mineral reliance on China and other foreign entities, strengthen our domestic manufacturing capabilities, and enhance national security and global competitiveness."

Looking ahead, future electronics could be engineered with rare earth recovery in mind, using modular designs and green electronics principles to make extraction simpler, cleaner and more efficient.

"Design for Disassembly will be critical using modular assemblies, standardized fasteners and minimal adhesive bonding, making it far easier to extract REE-containing components intact," Darapaneni said. "Clearly labeling and mapping REE content in components could also streamline sorting. Where possible, replacing permanent bonding with reversible mechanical fixtures allows for direct component reuse or targeted material recovery."

Collaboration between recyclers, technology providers and government agencies is essential to advance REE recovery capabilities, making recovery processes more accessible and commercially viable. ESN

Keith Loria is a D.C.-based award-winning journalist who has been writing for major publications for close to 20 years on topics as diverse as healthcare, travel and sustainability. He started his career with the Associated Press and has held high editorial positions at publications aimed at entertainment, sports and healthcare.



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ENTERPRISE RESOURCE PLANNING FOR THE E-SCRAP INDUSTRY

What ERP system you need depends on whether you're wiping hard drives, fixing up phones, or melting down metals.

By Cedric Carter

If you run a business in IT asset disposition (ITAD) or electronics recycling, you already know things are moving fast. More and more devices are coming your way thanks to Windows 10's end-of-life. Customers are demanding stronger data security and proof that you're meeting environmental standards. And the logistics of moving devices in and out? Messy doesn't even begin to describe it.

That's why a growing number of companies are turning to something called an ERP system. Don't let the acronym throw you off – ERP stands for Enterprise Resource Planning. Manual tools and generic platforms may keep operations afloat for a time, but they create blind spots, slow audits, and undermine client trust. In a market defined by compliance and accountability, inaction is not neutral – it's a liability.

WHAT EXACTLY IS AN ERP SYSTEM?

Imagine running your whole business with one big, smart dashboard. At its core, an ERP system is a centralized platform that connects all the moving parts. Your finance operations, inventory, logistics, compliance, and customer management in one system. Instead of juggling multiple spreadsheets, siloed databases, and manual workflows, an ERP provides a single source of truth.

The main pieces of a typical ERP include:

- Financials & Accounting – Billing, payments and seeing if jobs are profitable
- Inventory & Asset Tracking – Knowing where every device is, what condition it's in, and what happens next
- Compliance & Reporting – Generating the paperwork you need for audits or certifications without digging through files
- Customer & Vendor Management – CRM functions to keep track relationships and agreements
- Workflow Automation – Standardized processes for approvals, quality checks, and escalations. Basically, making sure steps get done in the right order, every time

For ITAD companies, that last point, Workflow Automation, is huge. It ensures every laptop, server or hard drive goes through the right security, resale or recycling steps without relying on memory or manual checklists.

DIFFERENT NEEDS, SAME CHALLENGE

Not every business in this space works the same way, which means not every ERP system should either. ITAD, refurbishment, scrap and recycling all have their own challenges. Some distinctions include:

- IT Asset Disposition (ITAD): Here the priority is protecting customer data and squeezing the most value out of equipment before it's recycled. An ERP needs to track every laptop or server by serial number, prove data was wiped securely, and give you the reports to back it up. It should also support repair and testing workflows so you can resell gear and not just scrap it.
- Refurbishment: These companies are in the business of giving electronics a second life. Their ERP or inventory system has to follow each device through cleaning, testing,

repair and grading. On top of that, it needs to connect to multiple sales channels so inventory stays accurate no matter where items are sold.

- Scrap Operations: For scrap-focused businesses, the name of the game is efficiency. ERP or scrap management tools track the type and amount of scrap coming in, automate the sorting and disposal steps, and make sure recycling is documented properly. This keeps costs down and ensures environmental compliance.
- Broader Recycling (including batteries): This side gets really complex. ERPs here need to handle tricky material flows, stay up to date with new laws (like digital waste tracking or stricter battery recycling rules), and provide data that helps operators price materials correctly and avoid processing bottlenecks.



The bottom line? ERP systems can help every segment of the industry, but what you need depends on whether you're wiping hard drives, fixing up phones or melting down metals. The smart move is to find a system that matches your world instead of trying to bend your business to fit a generic tool.

GUIDE FOR SYSTEM SELECTION AND IMPLEMENTATION

Step 1: Define the Essentials vs. the Extras

Not all ERP features are created equal. Start by separating the "must-haves" from the "nice-to-haves." One tip: Focus on the must-haves first. Extras can be layered in as your maturity increases.

Must-Have Features for ITAD & E-Scrap:

- In-Process Tracking – The ability to scan, grade and track each device through its full lifecycle, with complete chain-of-custody.
- Compliance Management – Support for standards like ISO, R2v3, e-Stewards, GDPR, SOC 2 and state-level regulations.
- Data Security Integration – Audit-ready logs, certificates of destruction and links to secure data erasure processes.
- Financial Integration – Clear connections between operational activity, costs and revenue.
- Scalability – Confidence the system can handle more devices and locations as your business grows.

Nice-to-Have Features (great for later):

- AI-driven grading or resale price recommendations
- Customer self-service dashboards with real-time visibility
- Advanced forecasting and business intelligence tools
- Built-in logistics scheduling

Step 2: Choose the Right Type of System

ERP systems generally fall into two categories:

- Plug-and-Play ERPs – Quick to install, often with pre-built modules. These are best suited for smaller operations but may lack the depth and flexibility ITAD and recycling businesses require.
- Customizable ERPs – Platforms like NetSuite or Odoo that can be tailored to your processes, such as serialized asset tracking, compliance workflows and resale channels. These require more effort upfront but deliver a better long-term fit.

One tip: Weigh speed versus fit. If you need to get running quickly, plug-and-play might work. But if you're planning for scale and complexity, a customizable option usually pays off.

Step 3: Understand the Costs (and ROI)

ERP pricing isn't just about the sticker price. Costs vary widely depending on your organization's size, complexity and the deployment model you choose — and they include both direct costs (licenses, implementation) and indirect costs (training, integrations, change management). Typical ERP costs can range as shown in Table 1.

Table 1. ERP cost ranges by business size

Business Size	Cost Range (Annual)	Avg. Per-User (5 yrs)	Notes
Small (Entry-Level Cloud)	$20K - $50K	~$7,143	Low upfront cost, fast to deploy, vendor-managed updates.
Mid-Sized (Customizable)	$75K - $200K	~$8,542	Implementation often 100–200% of license fee. Scales well but more complex rollout.
Enterprise (Multi-Site, Fully Custom)	$250K+	~$7,257	High planning needs. 47% report cost overruns during implementation.

While these numbers may feel steep, the returns are mea-

surable – Faster audits and compliance reporting; Higher resale recovery; Fewer errors and lost devices; and Increased throughput within the first year. When evaluating your total ROI don't look only at upfront cost – factor in the contracts won, risks avoided, and efficiency gains that ERPs unlock.

Step 4: Plan the Transition from Spreadsheets

Moving from Excel to ERP is a big shift. Treat migration as an upgrade, not an interruption. When staff see how it makes daily work easier, adoption skyrockets. Four tips to make it smoother include:

1. Clean Your Data First – Standardize naming, remove duplicates and fix errors before migration.
2. Start Small – Roll out core business critical modules first, then add the nice to haves later.
3. Bring Your Team Along – Involve employees early. People adopt systems faster when they've had a say in design and testing.
4. Use Experts – Lean on consultants or partners who know ITAD and recycling challenges inside out.

WHY THIS MATTERS

Looking ahead, the challenges are only going to get bigger. New laws are expanding around e-scrap and batteries. If you can't provide compliance data quickly, you risk fines or reputational damage. Two other realities: AI is coming fast – grading, pricing and disassembly tools depend on ERPs capturing and analyzing data in new ways. Also, critical materials like rare earth metals will matter more, which means device-level tracking is no longer optional.

In short, the ITAD and e-scrap industries aren't just about how many devices you process anymore. They're about how smartly you manage compliance, data, and costs across the reverse supply chain. ERP platforms, especially ones tailored to your industry, are the difference between barely keeping up and pulling ahead.

Want to learn more? Join us on October 27, 2025 at the "Smarter ITAD & E-Reuse Businesses: Advancements in ERP Systems" workshop (1:00-2:30 pm) at the 2025 E-Scrap Conference (e-scrapconference.com), where we'll dive deeper into how ERP is transforming ITAD, refurbishment, and recycling operations. ESN

Cedric Carter is the Founder and Managing Partner of Ethos Business Solutions, a consulting firm specializing in NetSuite and Odoo ERP solutions across a wide range of industries, including ITAD, manufacturing, distribution, and retail. With deep expertise in ERP implementations, process optimization, and custom development, Cedric works with organizations to transform operations, ensure compliance, and achieve scalable growth.

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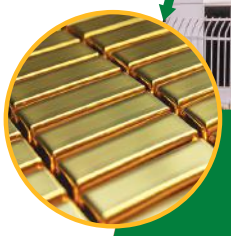
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METALLIUM | metalliuminc.com

Metal recovery



After announcing its first US facility in Houston, Texas, Metallium has now secured two additional sites in Massachusetts and Virginia for future electronics recovery plants, and received a $100,000 contract with the US Department of Defense.

Following its rebrand from MTM Critical Metals earlier in 2025, Metallium said it has lease options on both properties, which already carry environmental permits for electronics processing. The company plans to install its flash joule heating technology, developed at Rice University to recover critical and precious metals from e-scrap using high-voltage electrical pulses.

The company noted the Massachusetts property is located near established scrap aggregation hubs, while the Virginia site sits close to Northern Virginia's dense data center corridor. Metallium said the permits already in place should help shorten the path to development. The construction schedule depends on financing and build schedules, though the permits were described as giving the projects a head start. Metallium expects the two new projects would source feedstock from regional e-scrap recyclers, data centers and industrial suppliers.

The Massachusetts and Virginia announcements follow last month's news of the Houston facility, scheduled to begin operations in early 2026. That site is expected to be the company's first commercial-scale demonstration of flash joule heating.

GREENCHIP | greenchiprecycling.com

IT asset disposition

Greenchip E-Waste & ITAD Solutions (Greenchip) is a complete IT asset disposition (ITAD) provider, including end of life electronics recycling, data destruction, brand protection, and return on investment on resale IT assets. Its two New York City headquarters coordinate operations nationally, as well as coordinate regional partners and suppliers across the globe.

Greenchip is dedicated to responsible recycling practices and efficient electronics lifecycle management, handling every step in the ITAD process. Its in-house refurbishing, demanufacturing and logistics allow the company to have greater chain of custody and reduce liability.

All electronics are processed down to the base commodity level within Greenchip's R2V3 certified facilities for greater chain of custody and complete control. Security driven processes ensure all partner data is destroyed. With a strict zero landfill policy Greenchip has a 100% diversion rate from the landfill. Once recycling has been completed a certificate of recycling and data destruction is provided for the client's records.

MRP COMPANY | mrpcompany.com

Metal and electronics recycling

Established in 1987, MRP Company is a full service international metal and electronic recycling company specializing in precious metal scrap, ferrous and non- ferrous metals. The company offers direct buy or consignment services that are available throughout the US. It has partnerships with the top smelters.

Among the items MRP accepts are circuit boards, processors, gold ram, laptops, cell phones, computers, computer components, servers, networking, scrap metal miscellaneous electronics. MRP Company is R2V3 RIOS Certified.

"We go beyond the ordinary by offering you an upfront purchase for your e-scrap and electronics, ensuring you receive a solid and equitable price quote for your materials," explains MRP Company. "By harnessing the strength of our bulk buying power and direct relationships with smelters, MRP guarantees to elevate the value of your e-scrap and electronic devices."

MRP handles the complex process from shipping material directly to the smelter, confirming receipt, testing and sampling, and final value determination. Clients are kept in the loop throughout the entire process, including the end when they receive actual refining reports from the smelters showing the clients' returns. MRP can also assist with financing to help keep cash flowing during the process.

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INDUSTRY ANNOUNCEMENTS

The latest updates from e-scrap companies and organizations



Greeneye's Delich to aid 2026 RIOS update

Nicole Delich, managing director and founder of Greeneye Partners, has been appointed to the technical advisory committee that will guide the 2026 update of the RIOS certification standard. The appointment places a private sector consultant on the group that informs revisions to a program used by recyclers to manage environmental, health, safety and quality performance.

Formed in March 2025 by the Global Recycling Standards Organization, the committee consists of 14 members drawn from varied sectors and stakeholder groups. Its task is to review the existing standard and certification program and propose content updates that address emerging challenges and improve clarity for facilities.

Greeneye Partners provides consulting, auditing and training services across multiple programs, including e-Stewards, R2 and RIOS. Delich co-founded the firm in 2010.



Computer Recycling expands pickups across Maryland

Computer Recycling has expanded electronics recycling and data security services to cover all of Maryland, offering door-to-door collection for businesses, schools and government offices. The company said it aims to provide compliant and convenient disposal of outdated technology while protecting sensitive information and the environment.

The service now reaches every county in the state. Clients can schedule pickups for retired computers, servers and other equipment without arranging transport or drop-offs. Company staff handle collection and secure movement in line with federal, state and local requirements.

Computer Recycling cites environmental benefits from dismantling devices so metals and

plastics can return to manufacturing. The company also provides certified data destruction with on-site or off-site options and documentation to support compliance needs.



Australia opens world's first battery-in-device shredding plant

EcoBatt, a subsidiary of the EcoCycle Group, unveiled the new Battery-in-Device Shredding (BIDS) unit in Campbellfield in north Melbourne in mid-September, the first commercial-scale installation of the technology. The project received Australian $2 million (US $1,317,240) from the Victorian Government's Circular Economy Infrastructure Fund. The BIDS system was developed by Gloyd Recycling Solutions, a US firm focused on automating recovery of embedded power cells.

The plant uses specialized shredding and separation to remove embedded lithium-ion batteries from smaller items such as vapes, toys, power tools, electric toothbrushes and phones, then to recover metals and plastics for reuse. EcoBatt says the process can recover more than 90% of valuable materials and can handle up to about 2,000 pounds of devices per hour.

EcoBatt already operates about 7,500 public drop-off points supported by UN-rated kiosks, bins and drums and a company-owned transport fleet.



Assurant sees 60% rise in Q2 trade-in values

Assurant reported its latest quarterly snapshot of the secondary smartphone market, showing a record haul for consumers and a steady rise in device age. This suggests upgrade timing is being shaped by a mix of richer mobile provider promotions and emerging interest in on-device AI.

In its Q2 2025 "Mobile Trade-In and Upgrade Industry Trends" report, the insurance and extended warranty provider said trade-in and upgrade programs returned $1.34 billion to consumers, up 8% from Q1 and 60% on the year.

Asurant attributed part of the jump to more aggressive trade-in offers in the first half of 2025 than during the same period in 2024, which made upgrades more attractive for owners of aging devices. The average age of turned-in phones reached 3.88 years. , compared with 3.7 years in Q2 2024.



California extended fee system for battery-embedded devices

California is preparing to launch an extended fee system covering battery-embedded devices. Its Advanced Recovery System approach shifts the cost burden to the consumer rather than placing direct responsibility on manufacturers or brand owners, said Katie Reilly at the Consumer Technology Association.

Those consumer fees go into a fund administered by the state, and then collectors and recyclers are reimbursed for costs associated with properly managing and recycling those electronic devices, she said.

As of July 1, original equipment manufacturers were required to notify retailers of any battery embedded devices covered under the expanded act, as well as notify CalRecycle via email. Under SB 1215, manufacturers are responsible for identifying which products fall within the regulatory definition and which are exempt from recycling fees.



Used EV exports drive value for battery lifecycle

Reuse and recycling represent the smallest area of opportunity for used electric vehicle batteries, but remain important, according to a recent report from British consultancy Circular Energy Storage (CES) Research and Consulting.

Exports of used vehicles account for the main value in EV batteries, CES said in its 2025 battery lifecycle report. The firm specializes in collection and analytics for end-of-life lithium-ion batteries. The report estimates that 28,000 used EVs were exported from the US in 2024, and 30,000 from the European Union.

Although smaller than the export market for used EVs, the reuse sector is growing for EV batteries and recycling is the smallest by value, the report said, citing long in-vehicle lifetimes and high export ratios for suppressing volumes of end-of-life batteries.



Closed Loop enables eastern US electronics recovery corridor

Private equity firm Closed Loop Partners recently released its 2024 impact report, which included a summary of its work in electronics recovery. The firm has built a portfolio of electronics reuse and recovery companies along the eastern seaboard, according to the report.

Throughout 2024, the group continued its “buy-and-build” strategy, completing bolt-on acquisitions of electronics repair and IT asset disposition (ITAD) businesses, to develop a holistic platform to bring electronics recovery solutions to scale.

Closed Loop Ventures has invested in companies that tackle metals and electronics recovery further up the value chain — accelerating smart disassembly and processing by way of robotics and artificial intelligence. The East Coast investments include Apkudo, Cascade Asset Management, Molg, Relectro, VALIS and Sage Sustainable Electronics.



Companies set to boost US rare earth magnet recycling

A new partnership between rare earth processor HyProMag USA and electronics recovery firm Intelligent Lifecycle Solutions aims to secure and sustain domestic access to rare earth magnets used in everything from electric vehicles to smartphones to missile systems.

The agreement, finalized earlier in 2025, positions HyProMag USA to receive a consistent supply of neodymium iron boron (NdFeB) magnets and components from ILS facilities in South Carolina and Nevada. These feedstock materials, sourced from end-of-life hard disk drives and other equipment, will be preprocessed using automated extraction technology before being sent to HyProMag USA’s advanced recycling facility, expected to come online in 2027, in the Dallas–Fort Worth region.

That facility is projected to process 750 metric tons of neodymium-iron-boron (NdFeB) magnets and more than 800 metric tons of related co-products each year within five years of operation.

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By Robert Houghton

Our Industry Will Thrive on Service and Integrity



My thirty years as an ITAD CEO gives me a front-row view to the sporadic development of our unique industry. As practices have matured, services have become commoditized and margins squeezed. Many well-funded competitors have come and gone. Shipping e-waste to developing countries is no longer acceptable but still happens routinely despite processor assurances to the contrary. Virtually everybody passes supposedly rigorous certification audits with flying colors.

And my 2023 Subaru notwithstanding, electronics recyclers still drive the nicest cars in town.

Electronics recycling and IT Asset Disposition (ITAD) are complex industrial activities character-ized by the high cost of failure on one hand and manifold opportunities for error on the other. Growing is easy; scaling profitably is not. For some – maybe many bowing to competitive pressures – cutting corners is tempting and common. When Sage was hunting for ITAD acquisitions earlier this year, I could identify only one competitor whose values and honesty matched our own. Consequently, Cascade Asset Management is now part of Sage Sustainable Electronics.

Despite the sizable objective risks posed by the IT disposition process, many enterprise customers resist paying a fair price for reliable service, leveraging RFPs in a race to the bottom and relying on industry certifications instead of on-the-ground due diligence to validate vendor operational maturity and integrity. Years ago we always had the pleasure of a customer visit before signing a new contract – now almost never. Pricing aside, we are often judged today by our website, our sales pitch, and our certifications.

The stakes are higher every year. In the U.S., the average cost of a data breach in 2024 was over $9 million according to the Ponemon Institute. Data breaches in ITAD are almost exclusively due to lost or stolen assets prior to sanitation. The root cause is usually poor inventory control on the upstream customer's part, but also theft in transit, and occasionally theft or loss at the ITAD facility. Great security requires great inventory control, i.e., asset management.

Environmental liabilities receive less notice than cyber, but failures are likely more common.

Ultimately the customer is on the hook. The casualty of rising costs, shrinking margins, and growing competition in a best case may be vendor service failures; in a worst-case, customer brand-damaging calamities may result. Recent examples in the industry are numerous – including data breaches that have cost firms tens of millions of dollars, thousands of stolen devices that were resold undetected in the market for years, and abandoned materials in electronics recycling warehouses that have cost customers millions of dollars in clean up fees.

Sloppiness and/or malfeasance on the part of ITADs and e-recyclers is often enabled by the customer's poor asset management practices. In Sage's experience, the quantities of assets we receive average 12% more than the quantities the customer

indicates they are sending. In such cases true asset accountability is only possible when the customer is willing to incur the time and cost of an inventory during the recovery. With an initial validated inventory, a chain-of-custody is established that quickly identifies discrepancies from that point until final disposition.

ADVICE TO ENTERPRISE ASSET MANAGERS

ITAD and/or e-recycling is not a material cost in the context of enterprise IT spending, but end- of-life service failures become inordinately expensive. My advice to enterprise asset managers:

- Design ITAD RFPs with separate scoring of service fees and resale revenue shares. Pay a little extra for the most reliable service possible to ensure the service provider can perform consistently regardless of how much value is recovered by resale.
- Use a pure-play ITAD or recycler. Our industry's history demonstrates that large, diversified companies are culturally less capable of the focus required to be a great ITAD service provider. Remember Arrow and AvNet.
- Invest in great IT asset management. It's the best way to hold your ITAD provider accountable while reducing the overhead required to manage asset lifecycles.

Finally, I firmly believe that the ITAD and e-recycling industry will thrive in proportion to its willingness to accept full accountability for the risks and impacts of our actions. We should:

1. Pass national legislation to restrict the export of unprocessed e-waste. The Secure E- Waste and Electronics Recycling Act (SEERA) is a bipartisan bill currently before Congress and supported by the Coalition for Electronics Recycling (CAER).
2. Support creation of a watchdog service to perform frequent, unannounced compliance audits – either by current certifying bodies, or an independent service in conjunction with certification standards.
3. Require that ITAD and e-Waste company officers personally certify the integrity of certificates of destruction and financial reporting following the precedent of the Sarbanes-Oxley Act. ■

Robert Houghton is CEO and Co-founder Sage Sustainable Electronics and Co-founder Coalition for American Electronics Recycling (CAER).

The views and opinions expressed are those of the author's and do not imply endorsement by Resource Recycling, Inc. If you have a subject you wish to cover in an op-ed, please send a short proposal to news@resource-recycling.com for consideration.





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GROW YOUR INDUSTRY NETWORK

Here you'll find a list of companies that are driving the sector forward. With their combined decades of experience, these processors, equipment suppliers, materials buyers, trade groups and innovators are some of the largest and most well-regarded links in the electronics recycling value chain — and they may be the partners your operation needs to expand or diversify.

Read on to learn how these enterprises are meeting today's needs and challenges. And if you're joining us at the 2025 E-Scrap Conference in Texas, be sure to find these industry leaders in the exhibit hall so you can make your next connection.

All the groups and businesses listed in this index are E-Scrap Conference sponsors at the Gold, Platinum or Diamond level. Want to see your operation listed here next year? Make plans now to sponsor in 2026!

3C Environmental Solutions

3C ENVIRONMENTAL SOLUTIONS

3cenvironmental.com | Carrollton, Texas

3C Environmental Solutions Inc is a Texas-based leader in electronics recycling and IT asset disposition (ITAD) services. We provide environmentally responsible e-waste recycling, secure data destruction, and IT asset recovery for corporations, schools, and government agencies across the region. Our R2v3, NAID, and ISO-certified processes guarantee rigorous data security and regulatory compliance, while maximizing value through refurbishment and resale of technology equipment. With a commitment to transparency and sustainability, 3C Environmental Solutions helps clients manage their IT lifecycle and achieve their environmental goals, all supported by an experienced, certified team.

AUR Advanced United Refining

ADVANCED UNITED REFINING

advancedunited.com | Phoenix, Arizona

At Advanced United Refining, we specialize in recovering precious metals from spent solutions, electronic scrap and manufacturing by-products. With a commitment to sustainability and circular economy practices, we provide tailored refining solutions for businesses looking to maximize resource recovery while minimizing environmental impact.

Our expertise spans precious metals refining, e-waste recycling, and advanced extraction technologies, ensuring high yields and compliance with global standards. We work with electronics manufacturers, recyclers and industrial sectors to deliver cost-effective and responsible recovery solutions.

With a focus on innovation and efficiency, we continuously develop new refining processes to meet the evolving demands of the industry. Our goal is to help businesses turn waste into value, contributing to a more sustainable and resource-efficient future.

Learn more about how we can support your recycling and refining needs at E-Scrap Conference 2025.

AURIBUS RICHMOND LLC

aurubis.com/en/richmond | Augusta, Georgia

Aurubis Richmond LLC is a subsidiary of Aurubis AG, a leading global provider of non-ferrous metals and one of the largest copper recyclers worldwide. The company processes complex metal concentrates, scrap metals, organic and inorganic metal-bearing recycling materials, and industrial residues into metals of the highest quality.

DYNAMIC LIFECYCLE INNOVATIONS

thinkdynamic.com | Onalaska, Wisconsin

Dynamic Lifecycle Innovations is a full-service electronics and materials lifecycle management corporation specializing in electronics recycling, legislative compliance, IT asset disposition (ITAD), product refurbishment, remarketing and resale, materials recovery and data security. We create customized service packages to safeguard our customers' sensitive data and protect the environment from e-waste and other pollutants.

Since our company's inception in 2007, we have become an industry leader by constantly refining our services and processes as we gain new insights into materials lifecycle management. We strive to foster authentic, meaningful relationships with our clients, maximize their value recovery, ensure their organizations' assets and data are properly disposed of and deliver the security they need to know the job is done right.

e-STEWARDS

e-stewards.org | Seattle, Washington

e-Stewards® is the gold standard for responsible electronics recycling and IT asset disposition (ITAD). Designed for organizations committed to the highest standards of environmental and social responsibility, the e-Stewards standard prohibits the export of hazardous e-waste to developing countries, the use of prison labor and unsafe disposal practices. It goes beyond compliance to protect people, the planet and your brand. Certified processors undergo rigorous audits and participate in a robust performance verification program — including GPS tracking and unannounced inspections — to ensure integrity year-round. Fortune 500 companies, governments and institutions around the world trust e-Stewards certified processors to manage their end-of-life electronics securely and ethically. Whether you're an enterprise looking to improve your ESG performance or a recycler committed to leading the industry, e-Stewards is the mark of true stewardship.

FIRST AMERICA

firstamerica.com | Morris, Illinois

First America is one of the largest recycling companies in the United States, serving customers across the country from a network of eight strategically located facilities. First America provides whole-unit and component recovery, reuse and resale services, along with critical documentation and support services to ensure compliance with legal and regulatory requirements. Minority-certified, ITAR-registered and R2/V3-certified, First America serves customers in new energy, EV/HV, telecommunications, healthcare, manufacturing, financial services, technology, education and government to preserve our global resources for future generations.

FMI CAPITAL ADVISORS

fmicorp.com/investment-banking
Raleigh, North Carolina

FMI Capital Advisors is a leading investment banking firm for companies that work and invest in the built environment. For decades, we've guided businesses in engineering and construction, building products and materials, power and energy, infrastructure and other related sectors through more than 1,000 transactions.

GANNON & SCOTT

gannon-scott.com | Cranston, Rhode Island

Are unknowns in your precious metal recovery weighing you down? Are you getting the total value from your waste streams? Was your material processed responsibly? And will this come back to haunt you? Letting these questions go unanswered can potentially put your business at risk. You deserve a partner who provides peace of mind. Our commitment to our customers, our industry and the world we live in ensures we fully recover your precious metals while dramatically reducing environmental impact. Why do we do it? Because you deserve the freedom to focus on growing your business.

GLENCORE

glencore.com | New York, New York

Glencore is a major recycler of end-of-life electronics, lithium-ion batteries and other critical metal-containing products. We are working toward closing the loop for critical metals such as copper, nickel, cobalt, zinc and precious metals. We are committed to responsibly sourcing the commodities the world needs to advance everyday life.

GREENCHIP E-WASTE & ITAD SOLUTIONS

greenchiprecycling.com | Fredericksburg, Virginia

At Greenchip E-Waste & ITAD Solutions, we specialize in secure IT asset disposition, data center decommissioning, OEM program management, electronics recycling, and material recovery, all customized to meet your business goals. Our direct-to-smelter model enables true closed-loop recycling, maximizing transparency and value while minimizing downstream risk. Every step of our process is designed to protect your brand, your data and the planet.

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GREEN TECH



Short of hand?
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- Robot disassembly can maximize your Devices' Metal ,Plastic ,PCBboard and Chip value.
- We also buy all kind of PCB board ,tested failed SSD and DDRAM

R2 v3
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i-SIGMA

isigmaonline.org | Phoenix, Arizona

The International Secure Information Governance & Management Association (i-SIGMA®) is the industry trade association, enforcing standards and ethical compliance for secure data destruction and records and information management service providers on six continents. i-SIGMA currently maintains the most rigorous and widely accepted data-security vendor-compliance certifications, NAID AAA Certification® and PRISM Privacy+ Certification®, with hundreds of governments and thousands of private contracts using the programs to meet their regulatory due diligence requirements.

i-SIGMA was formed by the merger of two long-standing industry associations, the NAID® and PRISM International® (Professional Records and Information Services Management®), in 2018.

By harnessing the strength from its foundations and keeping abreast of current regulatory changes, i-SIGMA members are now better equipped than ever with access to more tools and learning opportunities. A stronger association, combined credibility and more resources also mean the association can better support members and better address regulators, policymakers and decision-makers

MITSUBISHI MATERIALS CORPORATION

mmc.co.jp/corporate/ja | Chiyoda-ku, Tokyo

Mitsubishi Materials Corporation is a leading company in the e-scrap industry with world-class e-scrap processing capacity. We produce copper, gold, silver and other precious metals at the Naoshima Smelter & Refinery and Onahama Smelting and Refining Co. Ltd. We operate MM Metal Recycling BV in the Netherlands for sampling e-scrap collected from customers in Europe. In Japan, we operate home appliance recycling plants in collaboration with Japanese manufacturers.

We operate diverse businesses, ranging from nonferrous metals and other fundamental materials to metalworking, the manufacturing of semiconductor-related and electronic components, and the environment and energy business. We have established “For people, society and the earth, circulating resources for a sustainable future” as our commitment and aim to realize it through the expansion of resource recycling and enhancing the supply of high-performance materials and products.

MRP COMPANY

mrpcompany.com | Hunt Valley, Maryland

MRP Company is a full-service international metal and electronics recycling company specializing in precious metal scrap, ferrous and nonferrous metals. Established in 1987, our strong reputation coupled with strong financials is why our customers return load after load. Partner with us for reliable, eco-friendly recycling that prioritizes sustainability and quality.

OHATA SHOJI INC.

ohata.org | Osaka, Japan

Ohata Shoji Inc. is a Japan-based recycling and trading company specializing in e-scrap (electronic waste) recovery and the export of compact, highly practical kei trucks. Since 1998, we have focused on responsible metal extraction from circuit boards, connectors and industrial components, supporting sustainable and compliant recycling practices.

We also supply carefully inspected Japanese mini trucks to both domestic and international markets. Known for their durability and versatility, these vehicles are ideal for farming, construction and light-duty transport.

With offices in Osaka and Chiba, and growing partnerships across North America, we are expanding our reach to meet global demand. Our mission is to deliver Japan’s technical expertise and operational efficiency to international markets with reliability and integrity. At Ohata Shoji, we are committed to sustainability and long-term, trustworthy business relationships.

OUSEI KANKYOSHOJI CO., LTD.

ousei.co.jp/en | Osaka, Japan

Ousei Kankyoshoji Co., Ltd. is an accredited refinery agent that sources precious metal-bearing materials in Japan. We accept various kinds of materials containing precious metals from all over the world. Our company has all of the necessary certifications for recycling businesses, and our supplies are delivered to smelters for state-of-the-art refinery solutions. Furthermore, we offer competitive refining terms, prepaid settlement, freight arrangement and metal hedge services to help customers maximize metal returns. We are always looking for a way to contribute to our customers. By constantly innovating, our company anticipates customers’ needs and offers quality returning and attentive services that exceed expectations.

QML, INC.

qml.us | East Providence, Rhode Island

QML, Inc. specializes in the sampling and reclamation of your precious metals, offering modern techniques and advanced technical expertise. Leveraging the power of our extensive global network, QML provides customers with a unique and strategic advantage. This includes options for refining both large and small volumes with the flexibility to provide reclaim on varying grades of precious metal-bearing materials.

QML reclaims gold, silver, platinum, palladium, rhodium, iridium, ruthenium and copper in our secure and environmentally friendly state-of-the-art facility, Material Sampling Technologies (MST) in North Smithfield, Rhode Island. We are proud to be an ISO 9001 and ISO 14001 certified and ITAR registered company, a testament to our unwavering commitment to quality and compliance.

RECYCLED MATERIALS ASSOCIATION (REMA)

recycledmaterials.org | Washington, D.C.

The Recycled Materials Association (ReMA) represents more than 1,700 companies in the U.S. and 40 countries around the globe. Based in Washington, D.C., ReMA provides advocacy, education, safety and compliance training and promotes public awareness of the vital role recycled materials play in the U.S. economy, global trade, the environment and sustainable development.

RIOS

rioscertification.org | Washington, D.C.

"RIOS is an integrated quality, environmental, health and safety management system that is designed for recyclers, by recyclers. RIOS is a program that is designed to assist recyclers across all commodities, of any size, in the goals of improving their environmental and health and safety performance, while also becoming a better partner to their customers and suppliers.

RIOS is an accredited standard that meets the environmental and health and safety management system requirements, as well as the quality requirement in R2v3. RIOS is also an accepted option for meeting the certified environmental management system requirement in the e-Stewards Standard. RIOS is the perfect choice to complement your electronics certification.

Save lives, save money, save the environment ... with RIOS.

SIPI METALS CORP

sipicorp.com | Chicago, Illinois

"Located within the city limits of Chicago, Sipi Metals Corp. is an industry-leading and highly trusted precious metal processor and refiner. E-scrap and OEM customers worldwide trust Sipi Metals Corp. to provide more — more value, more quality, more service.

Sipi Metals Corp.'s Precious Metal Division recovers the most accurate precious metal value from clients' essential materials. Sipi is dedicated to delivering high-quality results, professional account management and exceptional customer service to all customers. We pride ourselves on our ISO 17025-certified laboratory and plant operations, executing environmentally responsible processes.

Sipi also provides the highest level of data security and secure destruction (its process is molecularly final via Firemelt), while maintaining full regulatory compliance. Come visit us at E-Scrap 2025 — Booth 519. Talk to one of our executives and schedule a visit to our plant and headquarters — it would be our honor to host your visit.

STS RECYCLING LLC

stsrecycle.com | Jacksonville, Texas

STS Recycling is a leading provider of IT asset disposition (ITAD) and electronics recycling services, with R2v3-certified facilities in Texas and Florida. We help organizations across the U.S. securely dispose of outdated technology while protecting data, maximizing value and promoting sustainability.

In addition to our full-service ITAD solutions—including data destruction, refurbishment and responsible recycling—STS is a premier wholesale supplier of refurbished electronics. We specialize in tested, data-wiped laptops, desktops and IT equipment sourced from enterprise and institutional partners.

Our in-house process ensures transparency, quality, and consistent supply for resellers, retailers, and exporters. Whether you're looking to responsibly manage e-waste or grow your resale business, STS delivers the volume, value and reliability you need.

At STS, we're not just recycling—we're redefining it.

TDW US | UAE

tdwus.com | Sanford, Florida

TDW US | UAE is an ITAD company with four locations and more than 150 team members across Florida and the UAE. Our main facilities are R2v3 certified, and we focus on building strong partnerships with other ITAD companies. We help our partners with local ITAD projects in the UAE, sort and settle containers of mixed electronics, and repair laptops and hard drives back to top condition.

On top of our services, we also are active buyers of IT equipment like hard drives (HDD, SSD, NVMe, M.2), docking stations, AC adapters, Zebra thermal printers, Fujitsu scanners, enterprise hardware and brand-new in-box items.

We work to make IT asset recovery and resale simple and efficient for our partners, using our global reach and experienced team to support their business.

UMICORE PRECIOUS METALS REFINING

pmr.umicore.com | Raleigh, North Carolina

Umicore's precious metals refining facility is one of the world's largest and most eco-efficient for recycling complex waste streams containing precious metals. Our advanced, in-house-developed sampling and assaying processes ensure customers receive maximum value for their complex materials, such as e-scrap and catalysts, while maintaining optimal handling costs. E-scrap is a complex mix of materials, and at Umicore, we have the expertise to accurately sample and assay different types of precious metal-bearing e-scrap and recover all valuable and precious metals like Ag, Au, Pd, Pt and Cu from e-scrap. We operate on an assay-based settlement and recommend removing nonvalorized elements like aluminum and iron, as well as batteries for safety. We accept various materials, from printed circuit boards to shredded fractions containing PCBs from mechanical pre-processing. Umicore guarantees 100 percent high-quality recycled metals, such as Au, Ag, Pt, Pd and Rh. Nexyclus™ certificates will be third-party audited.

3R Technology
CALIFORNIA

5300 Claus Rd.
Riverbank, CA 95367
info@3rtechusa.com
209-972-0150

3R Technology California helps small e-waste collectors comply with the new regulations for managing this materials.

Our processing plant in California is able to process 55,000,000 pounds of plastic and breakage per year.

New processing facilities will soon be open in the East coast, allowing us to collect plastics and breakage from all around the US.

3R Technology California is looking for shredded plastic and breakage in California and surrounding states.

Call our team for conditions for transport from different points in the US.



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Oct. 27–29 • Grapevine, TX
e-scrapconference.com

Georgia Recycling Coalition Annual Conference
Oct. 27-29 • Jekyll Island, SC
georgiarecycles.org/shapingthefuture/

NOVEMBER 2025

Plastics Recycling Worlds Expo North America
Nov 12-13 • Cleveland, OH
ami-events.com

ReMA 2025 Operations and Safety Forum
Nov. 10-12 • Louisville, KY
recycledmaterials.org/event

Battery Recycling & Sustainability Summit
Nov. 12-13 • Bethesda, MD
cambridgeenertech.com/battery-recycling

RCon 2025
Nov. 12–15 • Columbus, OH
swana.org

NYSAR³ Annual Conference & Trade Show
Nov. 19–21 • Cooperstown, NY
nysar3.org

JANUARY 2026

International Electronics Resource & Recycling Congress
Jan. 21–23 • Valencia, Spain
events.icm.ch/event/IERC2026

EPR Think Tank
Jan. 27-28 • New York, NY
americanconference.com/eprthinktank/

FEBRUARY 2026

Southeast Recycling Conference & Trade Show
Feb. 15–18 • Destin, FL
southeastrecycling.com

Plastics Recycling Conference, co-located with the Resource Recycling Conference and the Textiles Recovery Summit
Feb. 23–25 • San Diego, CA
plasticsrecycling.com

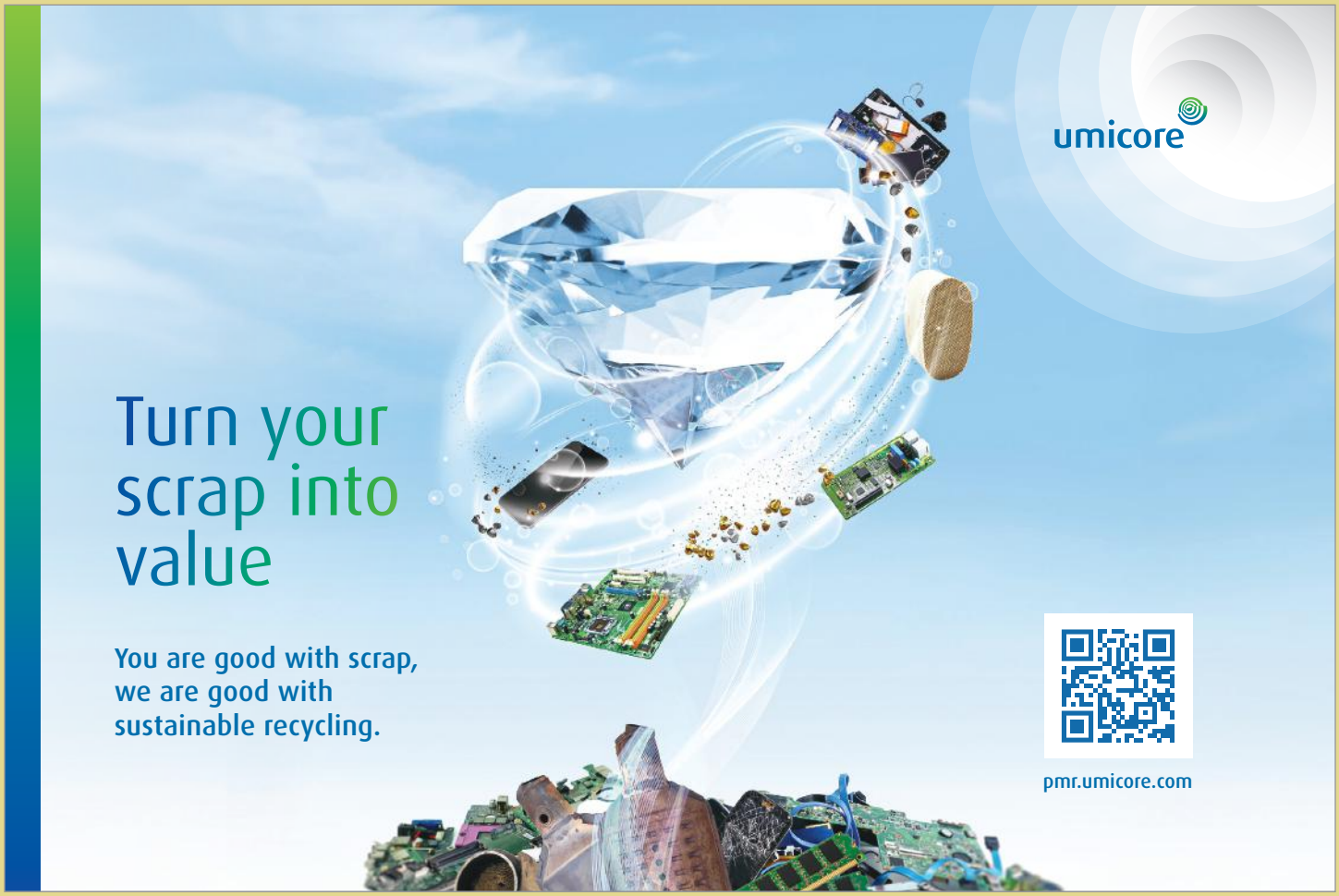
APRIL 2026

ENSURE International Conference
April 13–15 • Boston, MA
ensure.unitedscientificgroup.org

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ewaste-expo.com

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