Still Guessing: The Proportion of Pro Audio-Visual Equipment in Global Electronic Waste



By John Thomas, SAVe Board Member \cdot May 12, 2025



Let's be blunt. The mountain of discarded electronics continues to grow at an alarming rate, casting a long shadow over our planet's sustainability. The sheer volume of this waste, surging relentlessly over the past decade, leaves no doubt that our current patterns of consumption and disposal are fundamentally flawed. In 2022 alone, the world generated a staggering 62 million metric tons of electronic waste, nearly double the amount recorded in 2010. Projections indicate this figure could reach an even more colossal 82 million metric tons by 2030. This escalating production far outpaces our ability to manage it responsibly; in 2022, only about 22% of the generated e-waste was documented as being recycled through environmentally sound practices.

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Now, consider this: Within that paltry 22% of recycled e-waste, what proportion consists of commercial audio-visual (AV) equipment? It's a question that yields a frustratingly vague answer – probably a negligible amount, so small it barely registers in the grand scheme of things. For the most part, when we talk about e-waste, we refer to anything with a circuit board, from the computers on our desks to the refrigerators in our kitchens. That doesn't include wire



and cable, as well as components like lights, batteries and AC adapters, among others.

Distinguishing a sophisticated Crestron processor from a standard Dell PC, or the intricate control panel of a Peloton bike, is often beyond the scope of a recycler's operation. Once these devices are broken down, they become simply a collection of printed circuit boards and various components. The economic incentive for recyclers lies in recovering valuable, nonrenewable resources like gold, copper, silver, and platinum. This reality underscores the urgent need for the commercial AV industry to gain a better understanding of the materials contained within the equipment we discard. Such knowledge is crucial for developing tailored recycling programs, assigning responsibility for end-of-life management, and ultimately reducing our collective environmental footprint.

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The crux of the matter lies in the frustrating lack of concrete data regarding the contribution of commercial AV equipment to the overall e-waste problem. We are essentially operating in the dark, with little to no reliable information on the quantities involved. This informational void stems from the absence of established regulations, industry-wide best practices, or even compelling reasons for stakeholders to meticulously track

this specific category of waste. Adding to the complexity, manufacturers often appear to detach themselves once their products reach the end of their operational life. Furthermore, the existing infrastructure for waste management and recycling typically does not differentiate between commercial AV equipment and more general categories like IT or telecommunications hardware. Consequently, attempting to establish the sheer volume or weight of discarded commercial AV equipment is a daunting task. given the immense diversity of products within this sector – ranging from substantial video projectors and intricate video wall displays to complex speaker systems and rack-mounted audio gear. This significant absence of specific data presents a major obstacle in accurately assessing our industry's impact on the global e-waste stream. Without dedicated mechanisms for tracking and reporting this waste, any estimate remains speculative, hindering our ability to make informed decisions regarding waste management strategies and policy development within the commercial AV domain.

Given the absence of a specific category for commercial AV within global e-waste reports, it's reasonable to assume that our equipment is being aggregated into broader classifications. Smaller items like microphones, compact audio mixers, video cameras, and radios likely fall under the umbrella of "small equipment," encompassing anything with dimensions under 50cm. Larger components such as substantial displays and amplifiers could be categorized as "large equipment," alongside items like printing presses and photocopiers. Networked control systems and video conferencing units might be



concealed within the "IT and telecommunications equipment" category, alongside laptops, mobile phones, and routers. While it's probable that a significant portion of AV equipment, particularly the smaller and networked components, is being counted within these "small equipment" and "IT" categories, this broad categorization provides little insight into the actual volume of AV-specific e-waste we are generating. The lack of granularity prevents us from isolating meaningful figures. Moreover, the inclusion of consumer electronics within the same categories further obscures the picture, making any direct estimation highly unreliable. Compounding this issue is the fact that different regions across the globe employ varying methods for categorizing e-waste, making it even more challenging to gain a unified understanding of the commercial AV sector's contribution on a global scale.

The lifespan of commercial AV equipment is not uniform; it varies considerably depending on the type of equipment and the intensity of its use. Industry estimates suggest that displays such as LED screens, LCD monitors, and projectors typically have a lifespan of around 5 to 7 years. Speakers and audio systems tend to have a longer operational life, often exceeding a decade. However, video conferencing and integrated control systems frequently have a shorter lifespan. The rapid pace of technological innovation within our industry is a significant contributing factor to this. The constant demand for upgrades to meet the latest audio and video standards, resolutions, and software often necessitates the replacement of perfectly functional AV devices, effectively shortening their useful life. This continuous cycle of technological

advancement and subsequent replacement generates a steady stream of e-waste.

Conversely, external factors such as the imposition of tariffs on imported AV equipment, as seen in the US, might lead companies to retain their existing equipment for longer periods rather than opting for immediate upgrades. When it comes to the responsible disposal of AV equipment, it is of paramount importance due to the presence of various materials, including metals, plastics, and even hazardous substances like lead, mercury, and cadmium. The most effective approaches to managing this waste include reusing or repurposing equipment within the organization or the local community, returning it to manufacturers for refurbishment or recycling, or utilizing certified electronics recyclers who adhere to stringent environmental regulations. Furthermore, there is a growing movement advocating for "modular sustainability" in AV design, which focuses on creating systems that are adaptable, minimizing waste through component-level upgrades or replacements, and making it easier to recycle. While these responsible disposal options exist, there is a significant lack of comprehensive data on how frequently commercial AV equipment is recycled. The likelihood of recycling probably depends on factors such as the size of the company, their awareness of available recycling programs, and the accessibility of convenient and certified recycling facilities in their vicinity.

Stepping back to examine the broader landscape of global e-waste, the most recent reports reveal a diverse mix of electronic devices and materials. The 2024 Global E-waste Monitor provides an



updated overview of the primary categories of e-waste generated worldwide. These categories typically include small devices (such as toys, microwaves, and vacuum cleaners), which accounted for an estimated 20.4 million metric tons in 2022, with a strikingly low recycling rate of only 12%. Small IT and telecom equipment (including laptops, phones, GPS devices, and routers) contributed 4.6 million metric tons, with a slightly better, but still concerning, recycling rate of 22%. Other significant categories include temperature exchange equipment (refrigerators, air conditioners), screens and monitors (TVs, laptops), lamps, and large equipment (washing machines, electric stoves). With only 22% of the total 62 million metric tons of e-waste generated in 2022 having been collected and recycled, market research indicates that we are losing out on nearly 90 billion US dollars'

worth of recoverable metals and other valuable components contained within this waste. While these reports offer a general understanding of the composition of the e-waste stream, they do not provide a specific breakdown for commercial AV equipment, as illustrated in Table 1 below. The consistently low recycling rates across various categories underscore the urgent need for more detailed and specific information.

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TABLE 1 (Source: The 2024 Global E-waste Monitor)

CATEGORY	ESTIMATED MASS	RECYCLING RATE
Small Devices	20.4 million metric tons	12%
Small IT and Telecommunication Equipment	4.6 million metric tons	22%
Screens and Monitors	Not Specified	25%
Lamps	Not Specified	Not Specified
Large Equipment	Not Specified	Not Specified



Commercial audio-visual (AV) equipment encompasses a broad spectrum of electronic devices specifically designed and utilized in commercial, educational, and entertainment environments. These are not the everyday consumer electronics found in homes; rather, they are typically engineered for higher levels of performance, durability, and possess specialized functionalities. Examples include large venue video projectors, expansive video wall displays, sophisticated speaker systems and amplifiers, professional audio mixing consoles, dynamic digital signage systems, and the integrated control systems commonly found in conference rooms, auditoriums, broadcast studios, and live event productions. It is crucial to differentiate between consumer and commercial AV equipment when discussing e-waste because they may contain different types and quantities of materials, have varying lifespans, and follow distinct disposal pathways. Current e-waste reporting systems do not make this important distinction, however, which likely means we are overlooking a significant piece of the puzzle when it comes to understanding the environmental impact of the commercial AV sector.

To further complicate matters, AV equipment can be ambiguously categorized within existing e-waste classifications. For instance, large displays and projectors might be grouped under "large equipment," while smaller items like microphones, cameras, and compact mixers could fall into the "small equipment" category. Networked AV control systems and certain video conferencing equipment might be included within "IT and telecommunications equipment." The broad and general nature of these categories in standard e-waste reports makes it extremely difficult to extract data that specifically pertains to commercial AV equipment.

In conclusion, without reliable quantitative data, accurately assessing the environmental impact, the potential for resource recovery, and the effectiveness of current recycling efforts for commercial AV equipment remains a significant challenge. The encouraging news is that the landscape is beginning to (slightly and slowly) shift. Evolving e-waste regulations and various initiatives, such as the updates to California's e-waste legislation, the stricter regulations on e-waste shipments under the Basel Convention, and the increasing global adoption of Extended Producer Responsibility (EPR) laws, all indicate a growing recognition of the imperative to improve e-waste management.

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Moving forward, our focus must be on establishing clear definitions and standardized reporting methodologies for commercial AV e-waste to enable the collection of more accurate and granular data. Enhanced collaboration between AV industry associations and e-waste management organizations could be instrumental in defining and tracking this specific waste stream. Implementing pilot programs aimed at collecting detailed data on commercial AV equipment as it enters recycling facilities would provide invaluable insights. Developing industry-specific best practices for responsible disposal and recycling, alongside advocating for the recognition of commercial AV as a distinct category in future e-waste reports, are essential steps. Ultimately, it is the responsibility of the commercial AV industry to cultivate greater awareness and take proactive measures to ensure the sustainable end-oflife management of our equipment. This is not merely an option; it is a necessity for mitigating our environmental impact and maximizing the utilization of the resources we consume.

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