

# Electronic Waste: Managing the Environmental and Regulatory Challenges

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## Because of the complexities of identifying, handling and disposing of e-waste, companies may choose to work with experts that can help develop and manage effective risk management e-waste strategies.

Electronic devices are essential to business operations. With technology changing at a brisk pace, many companies update their equipment frequently and this means looking for ways to properly dispose of equipment and devices that no longer serve a purpose. Telecommunications equipment, security systems, computers, monitors, printers, mobile phones, and other electronic equipment often contain toxic metals like mercury and lead, along with valuable amounts of copper, gold and other materials. By establishing proper procedures for recycling or disposal of electronic waste, companies assume an active role in protecting their business and the environment.

Pollution due to electronic waste (e-waste) is a serious and growing concern. Federal and state regulators are taking an increasingly stringent look at e-waste disposal. Companies can face fines and litigation with settlements for improper disposal reaching into the tens of millions of dollars. Proactive companies in all industries are looking for insurance and risk management solutions to help mitigate potential environmental risks and losses.

To avoid potentially serious claims and legal actions, companies need to first understand the potential hazards associated with the disposal of electronic equipment and then explore their options with regard to recycling and/or proper disposal. It is also important to recognize that the risk to the organization does not end when e-waste is turned over to a disposal vendor. Because of the complexities of identifying, handling and disposing of e-waste while complying with local, state and federal regulations, companies may choose to work with experts that can help develop and manage effective risk management e-waste strategies.

### **Electronics waste grows rapidly**

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As new technology replaces older electronics, e-waste is piling up rapidly. The EPA has estimated that electronic waste is growing two to three times faster than any other waste stream.<sup>1</sup> At a basic level, any product that contains computer circuitry may eventually turn into e-waste. While e-waste has included such staples as televisions, security systems, and lighting, the range of products that contain electronic circuitry and can connect to the Internet continues to expand almost exponentially.

Because of the materials used in electronics, special care must be taken when disposing of unwanted or out-of-date equipment. E-waste that finds its way to municipal and other landfills that are not equipped to handle it may cause contamination when broken devices leach toxic and hazardous material into the ground and water, raising potential health risks for people on site and on neighboring properties.

The liabilities for contamination are not limited to the owners of the disposal site but extend to the companies that generate the waste and responsibility remains for its entire life cycle. When problems stemming from e-waste are identified, investigators from regulatory or government agencies can trace the materials back to the source and seek to hold the company that disposed of it responsible.

### **Adapt and reuse programs reduce e-waste**

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While consumers may bring unwanted electronics to local collection sites, corporations are required to comply with stringent guidelines or risk penalties. The waste must be disposed of in the proper

manner using disposal vendors that have the requisite expertise, certifications and permits. A national retailer was fined \$2.78 million for disposing of waste, including electronic waste, batteries, and mercury lamps, in trash bins that were sent to local California landfills that did not have the necessary permits.<sup>2</sup> In a 2014, a leading telecommunications company agreed to a settlement totaling more than \$50 million in a California action over its e-waste disposal practices.

Despite the environmental dangers, most outdated electronics still end up in landfills. About 2.44 million tons of computers, monitors, keyboards, printers, fax machines, computer peripherals, televisions, and mobile devices were disposed of in 2010, the Electronics Take Back Coalition reported<sup>3</sup>, and about 27 percent of that was recycled. The percentage of each category recycled ranged from 11 percent for mobile devices to 40 percent for computers.

When e-waste is simply discarded, valuable materials are lost. The U.S. Environmental Protection Agency estimates that 35,000 pounds of copper, 772 pounds of silver, 75 pounds of gold and 33 pounds of palladium can be recovered from every million cellphones that are recycled.<sup>3</sup>

More companies, however, are making significant efforts to adapt older equipment so that it can be reused, rather than discarded. Some of this effort is being driven by large electronic and technology firms that also require their vendors and suppliers to refurbish and reuse as much of their outdated electronics as possible. New products also feature designs that make it easier to recycle materials and to remove heavy metals for reuse.



These strategies serve several purposes: they conserve valuable resources; lessen the amount of new equipment that must be purchased; and reduce the amount of waste overall. Reducing the amount of e-waste requiring tracking also serves to limit potential liability from a data or an environmental standpoint.

Among the initiatives, the Electronic Industry Citizenship Coalition, formed in 2004 by major electronics companies, seeks to foster an industry-wide standard on social, environmental and ethical issues, including reducing the use of resources and the generation of waste. The member companies require their leading suppliers to implement their code of conduct.

For electronics recyclers, the Responsible Recycling Standard (R2) provides principles and guidelines to promote and assess responsible practices for protecting the environment, worker safety and health, security, and downstream management of electronic material and equipment. The standard seeks to ensure that cathode ray tubes, circuit boards, items containing mercury or PCBs, and batteries are not incinerated or put into landfills.

The U.S. federal government has also sought to encourage reduction of e-waste. The National Strategy for Electronics Stewardship, announced by the U.S. federal government in 2011, seeks to spur greener design of electronics; to make the federal government a leader in reuse and recycling; increase the safe management of used electronics and reduce harm from exports of e-waste to developing countries.<sup>4</sup>

### **Recycling e-waste can be complex**

For the discarded equipment that cannot be reused, companies need to decide upon a disposal vendor or facility that can make sure that their data is protected and that all the applicable environmental regulations are followed.

Recycling may involve salvaging equipment and components for valuable materials, such as glass, steel, copper, aluminum and other metals, while sometimes separating toxic materials. Smelting may help to recover precious metals, while simple incineration may generate toxic fumes.

## Companies should seek to confirm that their insurance program provides the appropriate coverage for e-waste exposures that cannot be avoided by their proactive risk management efforts.

When it comes to deciding upon an electronics recycling or refurbishing vendor, companies may want to look for two voluntary certifications: the Responsible Recycling (R2) Standard, administered by the non-profit group SERI (Sustainable Electronics Recycling International) and the e-Stewards certification, created by the Basel Action Network. The U.S. EPA also provides guidance and technical support for firms seeking to implement best practices for the management of e-waste.

### Regulations

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E-waste typically falls under the category of “universal waste” under U.S. EPA rules for the disposal of items such as batteries, pesticides, mercury-containing equipment and lamps.<sup>5</sup> Individual states may defer to federal regulations or develop their own, more stringent standards. Half of the states have enacted e-waste laws,<sup>6</sup> and companies that do business in a number of states may have to comply with varying regulations that cover a wider list of materials.

Some materials may require handling as hazardous waste according to federal, state and local requirements. On a federal level, hazardous wastes may be subject to the Resource Conservation and Recovery Act of 1976, the Comprehensive Environmental Response, Compensation

and Recovery Act (or Superfund), and the Toxic Substance Control Act. The applicable regulations depend upon considerations including the type and amount of waste, the original use, and whether the equipment or device remains in its original form or it has been modified, for instance if circuit boards and lead solder have been added.

U.S. businesses may be subject to international treaties. The shipment of e-waste between countries is governed by the Basel Convention on hazardous waste.<sup>7</sup> The European Union has set forth requirements on e-waste generation and management, including promoting designs that encourage reuse and recycling, under the Waste Electrical & Electronic Equipment Directive (WEEE Directive).<sup>8</sup> Canada has enacted regulations for the export and import of hazardous waste and hazardous recyclable materials. Japan and China have laws regulating the disposal and recycling of electronics, and Australia has a national recycling scheme.

Despite those laws, the U.N. Office on Drugs and Crime has estimated that about 8 million tons of e-waste is smuggled into China annually, and roughly 10 million tons - worth about \$3.75 billion - into the East Asia region.<sup>9</sup> Companies whose e-waste ends up in illegal trade should be aware of the potential consequences under national laws and international treaties.

### Managing e-waste to reduce risk

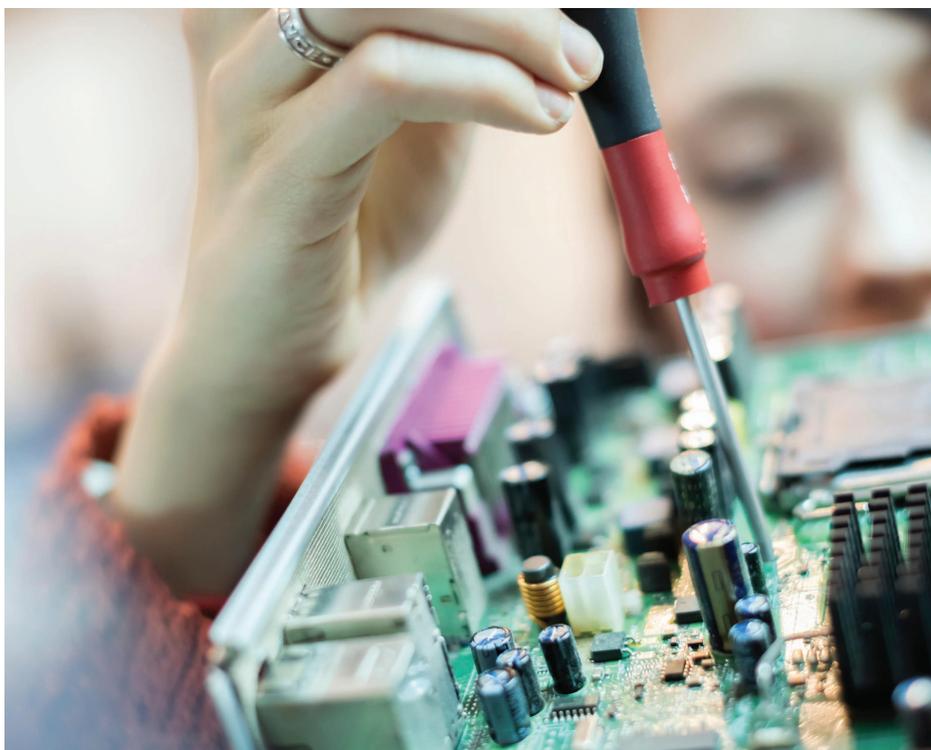
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Developing and implementing strategies to deal with e-waste is essential for companies of all size and in all industries. Minimizing waste, recycling electronics, managing the risks of disposal, and complying with regulations at the local, state, federal and international levels are all important considerations. Compliance with appropriate regulations means knowing and understanding which laws and treaties apply to the particular waste in question, keeping proper records, and meeting permitting requirements.

Companies working with vendors to handle their e-waste can avoid liability by assessing vendors at the onset and auditing them throughout the disposal process. Vendors should be required to provide assurance as to their ability to meet regulatory requirements and present evidence that requisite permits and certifications are in place.

To deal with these complexities, organizations may want to seek help from a provider with expertise in health, safety and environmental compliance services. For e-waste, those services can include assessing the waste to determine proper handling; providing guidance on waste management and disposal; and evaluating disposal vendors to ensure they have proper certifications and valid permits, and to reveal any past violations. To avoid compliance lapses, companies may want help in reporting and record keeping requirements. Training, written program development, R2 Certification, EICC conformance, auditing, and permitting are other valuable services that companies may want to consider.

As they work to optimize their e-waste management strategies, companies should seek to confirm that their insurance program provides the appropriate coverage for e-waste exposures that cannot be avoided by



Companies need to implement effective e-waste management strategies, and secure the most appropriate insurance coverage available for any remaining e-waste exposures.

their proactive risk management efforts. Premises pollution liability policies can provide coverage for environmental risks on a particular site, including remediation when necessary, as well as coverage for liability arising from releases during transportation of e-waste and releases from properly permitted third-party disposal sites. Companies may want to consider a policy that provides coverage for their entire business operations, whether on their own premises or at third-party locations. Also, for firms involved in e-waste management, contractor's pollution liability coverage can provide insurance for environmental risks at project sites owned by another entity - whether it be a government body or private company. Previously unregulated e-waste management practices have become subject to new and evolving regulations. Some insurers may be willing to pay for associated auditing, training or other risk management services tailored for e-waste as part of a comprehensive coverage program.

### Managing e-waste for a more sustainable future

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As technology plays an ever-expanding role in commerce and society, managing e-waste to protect the environment is a growing challenge in all industries. The risks of improper handling and disposal of e-waste are not only financial, but also reputational. Companies that manage their supply chains and distribution in a sustainable manner lower the risks of pollution and liabilities while burnishing their reputation as responsible environmental stewards. To protect their organization and its reputation, companies need to implement effective e-waste management strategies, and secure the most appropriate insurance coverage available for any remaining e-waste exposures.

### About the Authors:

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#### **Endnotes:**

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