

Regulators, Recyclers and Retailers Build 'Urban Mining' Industry

By JOEY PETERS of [ClimateWire](#)

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Each year, new electronics hit the market and capture consumers' attention, giving them reason to throw away the old VCR or standard television and engross themselves in state-of-the-art gadgetry.

Most of the time, the old electronics end up in the garbage, despite holding plenty of reusable material. But a push for recycling them has gained ground in recent years through both new state laws and a developing "e-recycling" industry.

Imagine a fleet of miners flocking to landfills and disassembling the dated electronics for their batteries and power supplies. John Shegerian uses the term "urban mining" to describe this process. Shegerian is chairman and CEO of Electronic Recyclers International, one of the world's largest electronic waste recyclers. To him, urban mining is a budding global industry that encompasses essentially anything that's recyclable.

"Urban mining goes way beyond electronics," he said. "It's everything that goes into a landfill that can be taken out."

But electronics are a mainstay for companies like ERI, especially since many contain "precious metals" like platinum, iridium and others that could have large implications for energy independence and renewable energy in the United States. Many of the most valuable metals are mined outside U.S. borders and are used in everyday electronic materials. China alone accounts for 97 percent of the rare earth metal market.

E-recycling has been prompted both by organizations like ERI and state laws seeking to prevent "e-waste," or electronics that end up in landfills. California was first to pass e-waste legislation in 2003. The state has processed nearly 1 billion pounds of e-waste since then and has 60 recyclers and 600 collectors.

Twenty-four other states have since followed suit, mostly in the past few years, but California's law stands out because it charges a consumer fee on certain electronics. The fee goes on covered electronic devices, or any electronic item with a screen bigger than 4 inches. Buying a big-screen TV, for instance, may require a \$10 fee that gets diverted into a recycling fund. The fund goes back to recyclers and collectors, who are paid a subsidy based on the amount of electronics they bring to a recycling plant. Collectors typically get about 30 cents per pound of e-waste.

Two state agencies oversee the e-waste law: CalRecycle, which is in charge of the fee and payment system, and the state Department of Toxic Substances Control, which visits recycling plants to monitor the storage of toxic materials.

Other states with e-waste laws take "producer responsibility" approaches, which seek to shift the burden of recycling costs from the taxpayers back to the manufacturers. Manufacturers are pushed to make products that can be easily recycled or made from recyclable materials. The catch is, they have to pay for it themselves.

The laws and regulations help the e-recycling industry thrive. ERI alone has seven recycling plants nationwide and processes more than 120 million pounds of e-waste a year.

But despite e-recycling's growth, most old electronics in the United States still end up in the trash. U.S. EPA estimates that in 2009, more than 82 percent of discarded electronics went to landfills and incinerators. The Electronics TakeBack Coalition, which promotes responsible e-recycling, says 50 to 80 percent of electronics recycled in the United States are shipped overseas. Shegerian said that estimate may even be conservative.

Shipping e-waste to the Third World

Barbara Kyle, the TakeBack Coalition's executive director, estimates that much of this is sent to developing countries. Asian countries like China and Vietnam as well as African countries like Ghana and Nigeria receive the bulk of the waste, Kyle said.

Developing nations like these have few or no regulations, Kyle said, and as a result, a whole industry based on crude, unsafe methods to extract the minerals exists. Many contain toxic materials that harm surrounding environments and populations, Kyle said.

"If they can pull the metals out by bashing and burning, that's what they do," Kyle said. "These are people working for a few dollars a day and don't get health safety."

Perhaps the biggest problem about this is that most of the exporting is legal in the United States. The only regulation that Kyle could point to is an EPA rule requiring exporters to notify the agency before sending out cathode ray tubes, such as the ones contained in many older television sets.

If the exporter claims that the tubes are for reuse, then it just needs to give EPA a one-time notice, regardless of the laws of the country they're being shipped to, Kyle said. There's also no limit to how much e-waste an exporter can ship overseas.

Shegerian attributes the problem to a culture within the industry that's pressured to find the cheapest recycling options. "What you've got is well-meaning people choosing the lowest-costing scenario," Shegerian said. "This goes for corporations as well as the federal government."

His mantra is that responsible recycling isn't cheap.

The TakeBack Coalition and many others, including major companies like Dell and Samsung, are backing legislation that would ban shipping e-waste to Third World countries. In September, Reps. Gene Green (D-Texas) and Mike Thompson (D-Calif.) introduced the "Responsible Electronics Recycling Act," which would have made such practices illegal. Because it was introduced late in the session, the bill didn't get any hearings and quickly died. It will likely be reintroduced this session, Kyle said.

In the meantime, e-recyclers can volunteer for certifications like e-Stewards, a program developed to prevent misuse of toxics in the electronics, especially in Third World countries. More than 50 recyclers are certified or in the process of doing so. ERI is one of them.

Building an industry

Another issue lies in the fact that most, if not all, of the smelting of precious metals happens outside of the United States. ERI is partners with LS-Nikko Copper, a large, South Korea-based copper smelter. Shegerian mentions LS-Nikko's small ownership stake of ERI as a sign of transparency.

Shegerian, who takes credit for coining the "urban mining" term, started promoting urban mining in the mid-2000s shortly after he took over ERI. At first, people looked at him "a little bit sideways" whenever he would bring it up in speeches, but he eventually bought the domain names for two websites to spread his business plan.

One, urbanmining.org, is an online urban mining encyclopedia of sorts that details all its benefits. The other, 1-800-Recycling.com, offers personal recycling tips intended to make the process as convenient as possible.

As the e-recycling trend gained ground, electronic manufacturers and retailers picked up on it. Two years ago, Best Buy began a recycling program that allows anyone to bring in used electronics, which get shipped off to one of the four recycling companies it's partnered with. Although the list of acceptable electronics is long, most people bring in one or two things.

"Eighty percent of the weight we take in is old tube TVs or old computer monitors," said Chris Boik, Best Buy's director of recycling and integration. "They have incredible amount of glass, aluminum and copper in them."

At the program's start, Best Buy set a goal to take in 1 billion pounds of e-waste, which it's still far from realizing. In the program's first year, Best Buy took in 75 million pounds. That number jumped slightly to 80 million pounds in the second year.

But the retail giant makes the process simple, allowing anyone to bring in electronics regardless of where they were bought. Sometimes it costs money. In most states, the store charges customers \$10 for monitors and TVs and gives out a \$10 Best Buy gift card in exchange. That's \$10 per item that Best Buy fronts by giving out the gift card, which all goes back to Shegerian's mantra.

"Recycling costs money," he said. "Services aren't free. Recycling is a service."

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