





## **Where Do Old Cellphones Go to Die?**

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AMERICANS replace their cellphones every 22 months, junking some 150 million old phones in 2010 alone. Ever wondered what happens to all these old phones? The answer isn't pretty.

In far-flung, mostly impoverished places like Agbogbloshie, Ghana; Delhi, India; and Guiyu, China, children pile e-waste into giant mountains and burn it so they can extract the metals — copper wires, gold and silver threads — inside, which they sell to recycling merchants for only a few dollars. In India, young boys smash computer batteries with mallets to recover cadmium, toxic flecks of which cover their hands and feet as they work. Women spend their days bent over baths of hot lead, “cooking” circuit boards so they can remove slivers of gold inside.

Greenpeace, the Basel Action Network and others have posted YouTube videos of young children inhaling the smoke that rises from burned phone casings as they identify and separate different kinds of plastics for recyclers. It is hard to imagine that good health is a by-product of their unregulated industry.

Indeed, most scientists agree that exposure poses serious health risks, especially to pregnant women and children. The World Health Organization reports that even a low level of exposure to lead, cadmium and mercury (all of which can be found in old phones) can cause irreversible neurological damage and threaten the development of a child.

The growing toxic nightmare that is e-waste is not confined to third world outposts. It also poses health problems in the United States where, for several years, the Federal Bureau of Prisons has kept inmates busy processing e-waste. There are concrete steps the government, manufacturers and consumers could take to better dispose of electronic trash and to help prevent the pileup of more e-waste and the hazards e-waste processing poses.

The United States, for example, remains the only industrialized country that has not ratified the Basel Convention, an international treaty that makes it illegal to export or traffic in toxic e-waste. Fully implementing the treaty would be a step toward joining global efforts to contain toxic waste troubles.

The Responsible Electronics Recycling Act, introduced in Congress in 2011, would have made it illegal to export toxic waste from the United States to countries that don't belong to the

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Organization for Economic Cooperation and Development. The aim was to stop dumping e-waste on the world's poorest nations and thus to provide an incentive for safer waste management in our own country. The bill had bipartisan support but was never put to a vote.

The European Union provides a model for industrial regulation that would shift the burden of safe product disposal back to the manufacturers that produce electronic goods. Its Waste Electrical and Electronic Equipment Directive requires electronic sellers to accept, free of charge, any of their used products brought in by customers for recycling. The goal is to have properly recycled 85 percent of the European Union's e-waste by 2019. Similarly, Japan requires its electronic manufacturers to establish their own recycling facilities or commission third parties to recycle a range of products, from computers and cellphones to TVs and air-conditioners.

Government or consumer pressure on manufacturers to design electronics with end-of-product-life issues in mind could be enormously helpful. Most cellphones, for example, are deliberately designed to make disassembly difficult. Changes in the way manufacturers glue, screw and solder components together would make it easier to dismantle discarded phones and thus reduce the risks posed by crude recycling techniques like those deployed by Ghanaian children.

THERE are alternative phone service business models that could be beneficial to producers, users and the rest of us. For example, manufacturers could sell products complete with prearranged recycling service or subscriptions that made it possible, for example, for phone user to exchange old units for new ones rather than throwing them away. Under a product service system model, companies recycle old units and repurpose core components. Xerox uses a similar model for its photocopiers, without impact on sales or profits.

In the absence of government regulation or industry initiative, consumers could play a role in determining what happens to products that have outlived their usefulness. Most phones and small electronics are designed with obsolescence in mind. But what if we held on to our gadgets longer and repaired, rather than replaced them? We could recycle the ones we no longer use through certified recycling services like e-Stewards, a nonprofit organization that runs certification programs for e-waste recyclers, ensuring that goods are not improperly exported.

As consumers we need to demand better end-of-life options for our high-tech trash; if manufacturers and government fall down on the job, we, the millions of Americans who own cellphones, should press for safe recycling.