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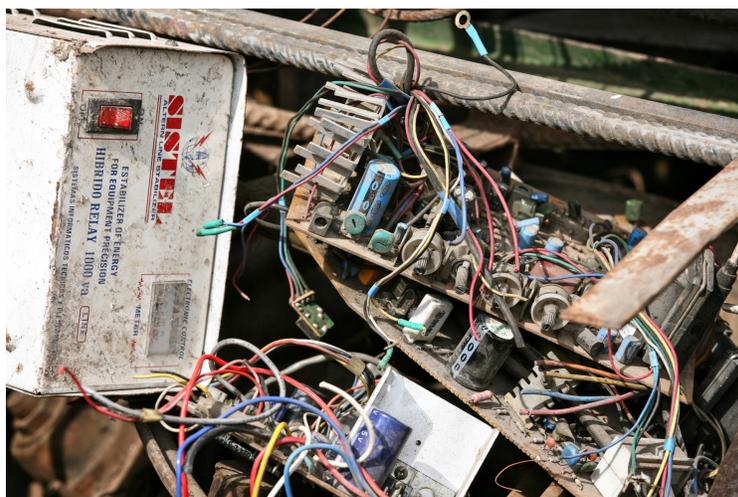
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The Surprising U.S. National Security Benefits Of E-Waste Recycling

Tip of the hat to the folks over at the [National Defense Magazine](#) for posting an intriguing piece about the unappreciated national security benefits of recycling electronic waste.

Scaling up recycling programs for electronic waste – or, e-waste – would protect more than just the environment. It could also protect the U.S. defense system from the potentially grave risks posed by failure-prone counterfeit electronic parts. Counterfeit parts have pervaded the U.S. defense supply chain, according to a report by the [U.S. Senate Armed Services Committee](#).

Writing for the [National Defense Magazine](#), Jim Burger, Henry Livingston and Tom Sharpe suggest that ramping up e-waste recycling programs might also rein in counterfeit electronic parts.



Why?

It turns out that electronic waste is a key “feedstock” for the materials used in counterfeit electronic components. Burger and his co-authors explain how counterfeiters tap the international flow of e-waste to source parts for counterfeit goods:

“E-waste is shipped by boat across the Pacific Ocean, smuggled into China and trucked to Guangdong Province, the epicenter of counterfeiting activities. There, workers pull apart the e-waste by hand, often in backyards and dump sites. The e-waste is often heated over open fires to loosen electronic components so they are easier to remove from the circuit boards to which they are soldered . . . The parts are then dumped on sidewalks for sorting. The process is messy, so the components are washed in a river or left outside in the rain. After drying in the open air, the parts are shipped to larger facilities that are set up for counterfeiting.”

The techniques employed to re-process the used parts into components that appear “new” make already unreliable components even less reliable. For example, used parts are commonly sanded or acid washed to remove product identification information and re-coated to further conceal that they are counterfeit. The collective impact of these reprocessing techniques is to increase the already significant risk posed by unwitting reliance on bogus components.

And this risk is hardly limited to the private sector. During 2009 and 2010, more than one million counterfeit electronic components were identified in critical defense systems ranging from submarines and aircraft to thermal weapon sights and advanced missile systems, according to the U.S. Senate Armed Services Committee.

“We do not want a \$12 million missile defense interceptor’s reliability compromised by a \$2 counterfeit part,” said General Patrick O’Reilly, the Director of Missile Defense Agency in 2011.