

# E-waste: What we throw away doesn't go away

July 8 2015

---



Dr. Sunil Herat is a senior lecturer in Griffith University's School of Engineering and associate editor of *Waste Management & Research*. Credit: Griffith University

In the life of almost every household appliance, there comes that moment of out with the old and in with the new.

However, while electrical and [electronic equipment](#) have never been more efficient, economical or in demand, consumers' desire to own the best and the latest is contributing to an environmental issue of increasing seriousness and concern.

"E-waste is one of the fastest growing waste streams in developing, emerging and developed regions and it covers all electrical and electronic equipment and parts discarded by consumers," says Dr Sunil Herat, Associate Editor of the journal *Waste Management & Research* and a Senior Lecturer in the School of Engineering at Griffith University in Queensland, Australia.

"According to figures published in the Global E-waste Monitor 2014 and compiled by the United Nations University, last year an estimated 41.8 million metric tonnes of [e-waste](#) was discarded throughout the world.

"This comprised mostly end-of-life kitchen, laundry and bathroom equipment such as microwave ovens, washing machines and dishwashers, although mobile phones, computers and printers also featured.

"That figure is estimated to rise by almost 20 per cent to 50 million metric tonnes in 2018, which is why waste management practitioners are seeking new technologies and approaches to deal with e-waste."

Dr Herat will discuss e-waste when he addresses the Sixth Regional 3R Forum in Asia and the Pacific, organised by the United Nations Centre for Regional Development and to be held in the Maldives from August

16-19.

He says that while the emphasis so far has been on end-of-life IT equipment such as computers and mobile phones, a focus on a broader spectrum of household e-waste is required if its growth is to be slowed.

A recent study commissioned by the Australia and New Zealand Recycling Platform and conducted by the Economist Intelligence Unit found that Australia generates one of the highest per capita volumes of e-waste in the world. Of 19.71kg per person per year, almost 30 per cent comes from digital and audio-visual items.

The study also showed that growing incorporation of smart technology into common [household items](#) is regarded as the main cause of increases in the global e-waste streams from homes.

"This gives rise to important issues such as how we prepare for the growth in household e-wastes; whether existing take-back programs - which currently exist in only a few countries - are sufficient to handle new demands; and whether regulations are sufficient to ensure small household e-waste items are not mixed with residual waste contents in traditional household bins," says Dr Herat.

"Furthermore, the sheer range of household electrical and electronics items these days brings with it the use of rare earths and precious metals within circuits and chips, all of which can increase subsequent waste management challenges when items become obsolete and are discarded."

Dr Herat says there are significant benefits from expanding the coverage of e-waste products beyond the traditional computers, mobile phones and televisions. These include more efficient recycling and material recovery processes and the encouraging of private sector investment in recycling and recovery technologies.

"Crucially, e-waste policies must have a consumer focus, particularly regarding small e-waste items," he says.

"In Finland, for example, the government encourages recycling of small household e-waste items by treating them differently from large items. In Japan, [consumers](#) do not have to pay the recycling fee for small household items. In the Netherlands, a "pay-as-you-throw" system has seen a significant reduction in small household e-waste items occurring in household waste [streams](#).

"Also, a unit-based recycling target is preferable to a weight-based target because the latter may result in greater incentive to recycle only large household items."

However, the biggest challenge facing e-waste policy makers is in developing countries.

"Most developing countries do not practise waste segregation at the source," says Dr Herat.

"This means that municipal solid waste can contain up to 3 per cent hazardous wastes, including e-waste. This can increase concentrations of heavy metals in leachate and contribute to environmental pollution.

"Governments can also struggle to collect funds from producers or imports if goods are smuggled in, or if small, shop-assembled products enjoy a large share of the market.

"A further challenge arises from systems that create incentives for collectors and recyclers to seek extra subsidies by exaggerating the amount of e-waste they collect. Competition between the formal and informal recycling sector is another impediment."

Despite such issues, Dr Herat says change is essential and inevitable.

"What is certain is that the e-waste management landscape is about to transform its traditional focus on computers and mobile phones to a broader range of more sophisticated household e-waste items," he says.

"With the exception of a few countries, most of us are about to face the reality of this latest challenge."

Provided by Griffith University

Citation: E-waste: What we throw away doesn't go away (2015, July 8) retrieved 25 April 2024 from <https://phys.org/news/2015-07-e-waste-doesnt.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.