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The report is available for preview online at <http://bit.ly/1an7E08>

Discarded Kitchen, Laundry, Bathroom Equipment Comprises Over Half of World E-waste: UNU Report

*End-of-life electronic, electrical equipment
totals 41.8 million metric tonnes in 2014*

*E-waste last year contained \$52 billion in resources,
large volumes of toxic material; most is not collected for recovery or treatment*

New report details e-waste generation by region

In 2014, people worldwide discarded all but a small fraction of an estimated 41.8 million metric tonnes (Mt) of electrical and electronic products — mostly end-of-life kitchen, laundry and bathroom equipment like microwave ovens, washing machines and dishwashers.

And the volume of e-waste is expected to rise by 21% to 50 million Mt in 2018.

The new figures were released today in the Global E-Waste Monitor 2014, compiled by the United Nations University (UNU), the UN's think tank. The report offers in unprecedented detail a wealth of insights into the location and composition of the world's fast-growing e-waste problem.

Just 7% of e-waste last year was made up of mobile phones, calculators, personal computers, printers, and small information technology equipment.

Almost 60% was a mix of large and small equipment used in homes and businesses, consisting of:

- 12.8 Mt of small equipment (vacuum cleaners, microwaves, toasters, electric shavers, video cameras, etc.)
- 11.8 Mt of large equipment (washing machines, clothes dryers, dishwashers, electric stoves, photovoltaic panels, etc.)
- 7.0 Mt of cooling and freezing equipment (temperature exchange equipment).

- 6.3 Mt of screens
- 3.0 Mt of small IT (mobile phones, pocket calculators, personal computers, printers, etc.)
- 1.0 Mt of lamps

The 41.8 million Mt weight of last year's e-waste is comparable to that of 1.15 million 40-ton 18-wheel trucks, enough to form a line of trucks 23,000 kilometres long, or the distance from New York to Tokyo and back.

Less than one-sixth of last year's e-waste is thought to have been diverted from landfills to recycling and reuse.

The e-waste generated in 2014 contained an estimated 16,500 kilotons of iron, 1,900 kilotons of copper, 300 tonnes of gold (equal to 11% of the world's total 2013 gold production), as well as silver, aluminum, palladium plastic and other resources with a combined estimated value of US \$52 billion (48 billion Euro).

Toxins in that e-waste, meanwhile, include 2.2 Mt of lead glass — more than six times the weight of the Empire State Building — 0.3 Mt of batteries, as well as mercury, cadmium, chromium and 4,400 tonnes of ozone-depleting substances (CFCs). Health problems associated with such toxins include impaired mental development, cancer, and damage to livers and kidneys.

And while the USA and China produce the most e-waste overall (32% of the world's total), the top per capita producers by far are the wealthy nations of northern and western Europe, the top five being Norway, Switzerland, Iceland, Denmark, and the UK.

The escalating global e-waste problem is driven by the rising sales and shortening life cycles of electrical and electronic equipment (EEE — essentially, any device with a battery or an electric cord).

“Worldwide, e-waste constitutes a valuable ‘urban mine’ — a large potential reservoir of recyclable materials. At the same time, the hazardous content of e-waste constitutes a ‘toxic mine’ that must be managed with extreme care,” says UN Under-Secretary-General David Malone, Rector of UNU.

“The monitor provides a baseline for national policymakers, producers and the recycling industry, to plan take-back systems. It can also facilitate cooperation around controlling illegal trade, supporting necessary technology development and transfer, and assisting international organizations, governments and research institutes in their efforts as they develop appropriate countermeasures. This will eventually lead to improved resource efficiency while reducing the environmental and health impacts of e-waste.”

Says co-author Kees Baldé of United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) SCYCLE in Bonn (Germany): “This report, based on empirical data, provides an unprecedented level of detail and a more accurate overview of the magnitude of the e-waste problem in world different regions than has ever been reported previously.”

Selected highlights:

- In 2014, approximately 4 billion people were covered by national e-waste legislation (though not all laws cover the full range of e-waste and are not all enforced).

- Around 6.5 Mt of e-waste was reported as formally treated by national take-back systems
- Most world e-waste in 2014 was generated in Asia: 16 Mt (3.7 kg per inhabitant)
- The highest per inhabitant e-waste quantity (15.6 kg/inh.) was generated in Europe; the region (including Russia) generated 11.6 Mt
- The lowest quantity of e-waste was generated in Oceania (0.6 Mt), however, per inhabitant the e-waste generated was nearly as high as Europe's (15.2 kg/inh.)
- The lowest amount of e-waste per inhabitant was generated in Africa (1.7 kg/inh). The continent generated 1.9 Mt of e-waste in total.
- The Americas generated 11.7 Mt of e-waste (7.9 Mt in North America, 1.1 Mt in Central America, 2.7 Mt in South America), or an average of 12.2 kg/inh
- Growth of e-waste by volume since 2010, with projections to 2018

GLOBAL QUANTITY OF E-WASTE GENERATED			
Year	E-waste generated (Mt)	Population (billion)	E-waste generated (kg/inh.)
2010	33.8	6.8	5.0
2011	35.8	6.9	5.2
2012	37.8	6.9	5.4
2013	39.8	7.0	5.7
2014	41.8	7.1	5.9
2015	43.8	7.2	6.1
2016	45.7	7.3	6.3
2017	47.8	7.4	6.5
2018	49.8	7.4	6.7

Top 40 e-waste producing nations, per capita (kg per individual), and by volume (kt)

Name	WEEE_kginh	WEEE_kt	Regulations	population
Norway	28.4	146	yes	5150000
Switzerland	26.3	213	yes	8098000
Iceland	26.1	9	yes	331000
Denmark	24.0	135	yes	5610000
United Kingdom of Great Britain and Northern Ireland	23.5	1511	yes	64271000
Netherlands	23.4	394	yes	16861000
Sweden	22.3	215	yes	9655000
France	22.2	1419	yes	63996000
United States of America	22.1	7072	yes	319701000
Austria	22.1	188	yes	8520000
Germany	21.7	1769	yes	81589000
Finland	21.5	118	yes	5476000
China, Hong Kong Special Administrative Region	21.5	157	yes	7296000
Belgium	21.5	242	yes	11260000
Luxembourg	21.0	12	yes	550000
Canada	20.4	725		35538000
Australia	20.1	468	yes	23339000
Ireland	19.8	92	yes	4641000
Singapore	19.6	110	no	5595000
New Zealand	19.1	86	no	4510000
Bahamas	19.1	7	no	360000
Taiwan	18.6	438		23499000
Brunei Darussalam	18.1	7	no	411000
Spain	17.8	817	yes	45995000
Italy	17.6	1077	yes	61156000
Japan	17.3	2200	yes	127061000
United Arab Emirates	17.2	101	no	5873000
Israel	17.2	138	no	8040000
Kuwait	17.2	69	no	3999000
Qatar	16.4	33	no	1989000
Portugal	16.2	171	yes	10569000
Republic of Korea	15.9	804	yes	50475000
Greece	15.2	171	yes	11242000
Slovenia	15.0	31	yes	2066000
Czech Republic	14.8	157	yes	10594000
Malta	14.6	6	yes	418000
Oman	14.1	46	no	3288000
Estonia	14.1	19	yes	1340000
Barbados	13.2	4	no	279000
Bahrain	12.9	16	no	1198000

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Name	WEEE_kt
United States of America	7072.0
China	6032.6
Japan	2200.5
Germany	1768.9
India	1640.7
United Kingdom of Great Britain and Northern Ireland	1510.9
France	1418.7
Brazil	1411.9
Russian Federation	1230.7
Italy	1076.9
Mexico	957.9
Spain	817.4
Republic of Korea	804.2
Indonesia	745.1
Canada	724.7
Iran (Islamic Republic of)	580.7
Turkey	503.1
Australia	468.2
Taiwan	437.6
Thailand	418.9
Poland	396.6
Netherlands	394.4
Saudi Arabia	378.8
Egypt	373.0
South Africa	346.4
Argentina	291.7
Pakistan	265.6
Ukraine	257.6
Colombia	252.2
Belgium	241.7
Venezuela (Bolivarian Republic of)	232.7
Malaysia	231.7
Nigeria	219.3
Sweden	215.2
Switzerland	213.4
Romania	196.7
Austria	187.9
Algeria	183.5
Chile	176.2
Portugal	170.9

United Nations University

UNU is an autonomous organ of the UN General Assembly dedicated to generating and transferring knowledge and strengthening capacities relevant to global issues of human security, development, and welfare. The University operates through a worldwide network of research and training centres and programmes, coordinated by UNU Centre in Tokyo.

The UNU's Institute for the Advanced Study of Sustainability (UNU-IAS) is a leading research and teaching institute based in Tokyo. Its mission is to advance efforts towards a more sustainable future, through policy-oriented research and capacity development focused on sustainability and its social, economic and environmental dimensions. UNU-IAS serves the international community, making valuable and innovative contributions to high-level policymaking and debates within the UN system.

Sustainable Cycles (SCYCLE) is an operating unit of UNU-IAS based in Bonn, Germany. Its activities are focused on the development of sustainable production, consumption and disposal

patterns for electrical and electronic equipment, as well as other ubiquitous goods. SCYCLE leads the global e-waste discussion and advances sustainable e-waste management strategies based on life-cycle thinking.

SCYCLE fosters a solutions-oriented dialogue, cooperation and consensus through e.g. hosting the Solving the E-Waste Problem (Step) Initiative, a global network of more than 65 member organizations committed to developing applicable, holistic, science-based recommendations concerning the growing e-waste problem.