UNITED NATIONS UNIVERSITY

UNU-VIE SCYCLE

Sustainable Cycles Programme

SCYCLE

Programme

United Nations University's activities related to informal e-waste recycling

Violeta Nikolova, UNU-VIE SCYCLE

nikolova@vie.unu.edu

UNITED NATIONS UNIVERSITY

Content

■ About UNU-VIE

■ SCYCLE

■ StEP

■ Overview of E-Waste Quantifications

■ Capacity Building & Training

■ E-Waste and the Circular Economy

About UNU-ViE

UN University Mandate

- Founded in 1973 as " Academic Arm" of UN
- Headquartered in Tokyo, Japan
- At present 13 Institutes in 12 countries
- 13 Associated institutions
  (e.g. AIT, University of Bonn, etc.)
- Staff: app. 670 persons

Strategic fields 2015-2019
Principal areas
1. Peace and governance
2. Global development and inclusion
3. Environment, climate and energy

New areas (resources permitting) include
4. Demography and migration
5. Higher education policy

- Think tank for UN agencies & Governments
- Research
- (Specialized) education
- Capacity development

UNITED NATIONS UNIVERSITY
UNU-VIE SCYCLE

UNU Global Campus

1 UNU-Centre ★
2 UNU-INWEH (Water)
3 UNU-ONY (Liaison)
4 UNU-BIOLAC (Biotechnology)
5 UNU-FTP, UNU-GTP,
   UNU-LRT, UNU-GEST
   (Fisheries, Geothermal Research,
   Land Restoration, Gender Equality)

6 UNU-MERIT (Innovation & Technology)
7 UNU-WIDER (Development Economics)
8 UNU-CRIS (Regional Integration)
9 UNU-EHS (Human Security)/
   ViE (Vice Rectorate in Europe)
10 UNU-FLORES (Integrated Material Fluxes)
11 UNU-EGOV (Electronic Governance)

12 UNU-GCM (Culture and Mobility)
13 UNU-IRADDA (Sustainability in Africa)
14 UNU-INRA (Natural Resources)
15 UNU-IIGH (Health)
16 UNU-CS (Computing and Society)
17 UNU-IAS (Advanced Studies)

Sustainable Cycles Programme (SCYCLE)

UNU Institutes & Programmes

	NAME	LOCATION	WORKING AREAS
CRIS	Comparative Regional Integration Studies	Bruges	Processes and consequences of regional integration and cooperation
CS	UNU Computing and Society	Macao	High-impact innovations in computing and information technologies for development
EHS	Institute for Environment and Human Security	Bonn	Environmental risks including climate change, urban spaces, environmentally induced migration
FLORES	Institute for Integrated Management of Material Fluxes and of Resources	Dresden	Integrated management of water, soil, and waste
SCYCLE	Sustainable Cycles Programme	Bonn	Sustainable production, consumption and disposal of ubiquitous goods
IAS	Institute for the Advanced Study of Sustainability	Tokyo	Sustainability science

UNITED NATIONS UNIVERSITY
UNU-VIE SCYCLE
Sustainable Cycles Programme

SCYCLE – Key Projects & Activities

1. Policy advice

- Studies on Article 7 & 11 of the WEEE Directive (2014 & 2015)
- Review of the EU WEEE Directive (2007)

2. E-waste quantification studies

- Global E-waste Monitor (2017, 2014)
- Regional E-waste Studies: East and Southeast Asia (2017), Latin America (2018, 2015)
- National Country Studies: Romania, Ireland, Italy, France, Belgium, Netherlands, Switzerland
- E-waste Statistics: Guidelines on classification, reporting and indicators (2015 & 2018)
- Person in Port Project: Lagos (Nigeria) (2015-2017)
- ProSUM: Prospecting the Urban Mine (2015-2017)

3. Capacity building and training

- E-waste Academies for Managers (EWAM) & Scientists (EWAS) (Global, since 2009)
- Dotcom-Waste: Developments of tools to counter illegal management and trade of waste (2016-2017)

4. Facilitating International Dialogue

- Hosting StEP Secretariat: Solving the e-waste problem (Global, since 2004)
- UN E-waste: towards a joint e-waste effort of UN organizations (Global, since 2016)

5. Others

- PolyCE: Enabling Recycling of Plastics from E-waste (2017-2021)
- FORAM, SCRREEN, ORAMA

Solving the E-Waste Problem Initiative

StEP Initiative

http://www.step-initiative.org/

solving the e-waste problem

- A global network of more than 35 member organizations committed to developing applicable, holistic, science-based recommendations concerning the growing e-waste problem.

- **StEP Interactive E-Waste World Map ('13)** - generation of e-waste by 184 countries along with information on e-waste rules, regulations, policies and guidance

- **StEP Business Plan Calculation Tool** - supports entrepreneurs in setting up an economically viable e-waste recycling business in an environmentally sound manner.
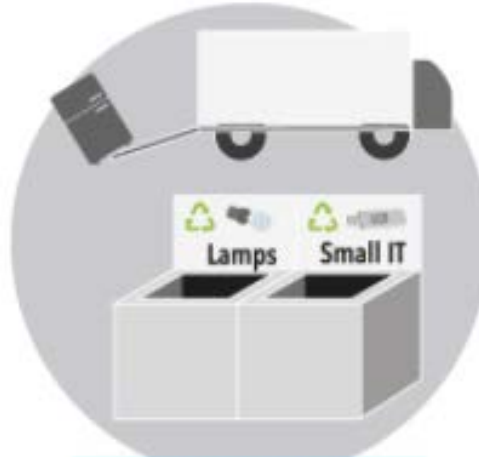
Overview of E-Waste Quantifications
Global E-waste Monitor, Regional E-waste Monitors
(South and East Asia & Latin America)

Why do we need statistics on e-waste?

To reduce e-waste generation

To promote recycling

To prevent illegal dumping & emissions

...and to create jobs

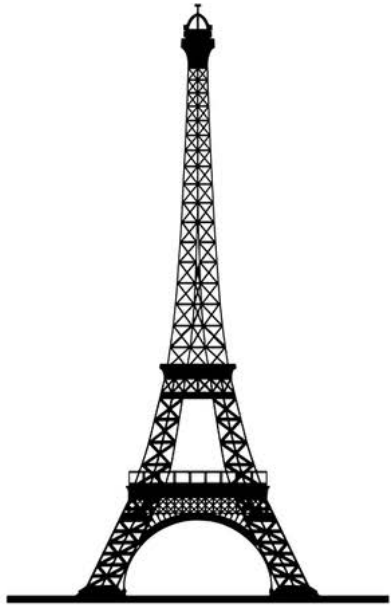## The Global E-waste Monitor 2017

Quantities, Flows, and Resources
Authored by Baldé, C. P., Forti, V., Gray, V., Kuehr, R., Stegmann, P.

Global E-Waste Monitor'17 : Highlights

In 2016, **44.7** million metric tonnes of e-waste were generated.

This is an equivalent of almost **4,500** Eiffel towers.

44.7 Mt
Of e-waste generated in 2016

9 Mt
are collected by official take back systems

2 Mt
end up in waste bins

Of the 44.7 Mt of e-waste generated, only **20% (8.9 million Mt)** is documented to be collected and properly recycled. **80% (35.8 million Mt)** of the e-waste is not documented.

Global E-Waste Statistics Partnership

Main objectives of partnership:

- *To build capacity and help countries produce reliable and comparable e-waste statistics.*

- *To collect data from countries and build a global e-waste database.*

- *To track developments over time and to inform policy makers and industry.*

Only about 40 countries in the world collect internationally comparable statistics on e-waste.

Regional E-Waste Monitor: Americas

- In the Americas in 2016, the total e-waste generation was **11.3 Mt.**

- Only 1.9 Mt was documented to be collected and recycled, mostly coming from North America.

Table 3.2: Smartphone life cycles by countries, in months, for 2013 - 2015

	USA	China	EU5	France	Germany	Great Britain	Italy	Spain
2015	21.6	19.5	20.4	21.6	18.8	23.5	17.7	20.0
2014	20.9	21.8	19.5	19.4	18.2	22.0	18.7	18.2
2013	20.5	18.6	18.3	18.0	17.1	20.0	18.6	16.6

Source: Kantar World Panel 2016

- The top producer of e-waste in the Americas is the United States of America, with 6.3 Mt.

- The second largest producer of e-waste is Brazil, with 1.5 Mt, and the third is Mexico, with 1 Mt.

- UNU estimation studies show that the USA collected approximately 1.4 Mt of e-waste, which is 22% of the e-waste generated. The whereabouts of the remainder of the e-waste is largely unknown in the USA.

Capacity Building & Training

E-Waste Academies

UNITED NATIONS UNIVERSITY

UNU-VIE SCYCLE
Sustainable Cycles Programme

- Developing capacity in **enterpreneurship, policy-making, research** and **enforcement**.

- **E-waste Academy for Managers** - for small- and medium-sized enterprises and policy-makers.

- **E-waste Academy for Scientists** - for young researchers.

- **The Dotcom Waste Project** - for law enforcement agencies, customs and port authorities, environmental agencies and prosecutors
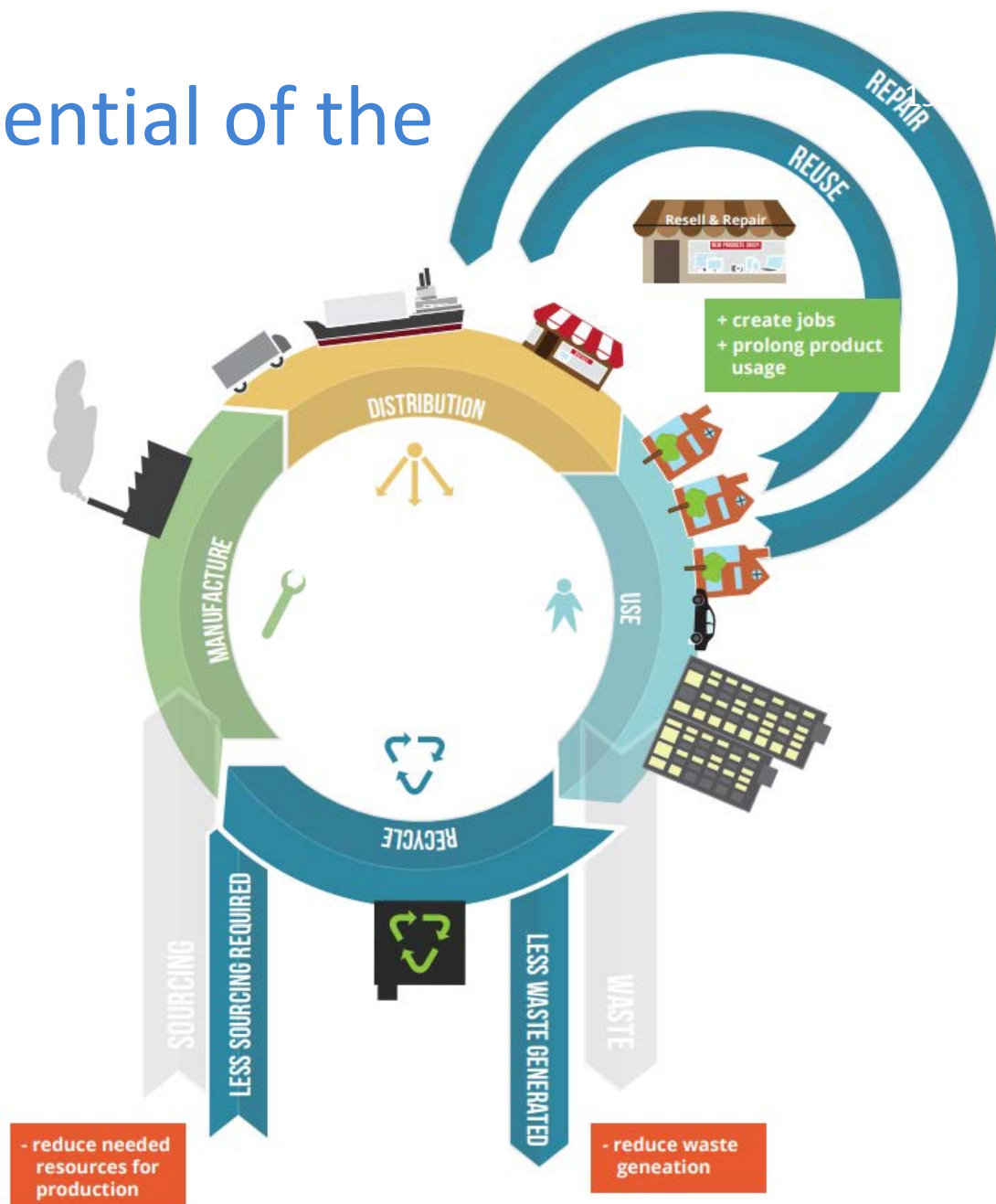

Next EWAM will take place between 7th and 11th of May in Bangkok, Thailand.

UNITED NATIONS UNIVERSITY
UNU-VIE SCYCLE

E-Waste and the Circular Economy

Unlocking the Potential of the Circular Economy

- The Circular Economy concept offers huge economic and employment opportunities for e-waste management.

- Circular economy models should allow the increase in value of EEE when wasted, while reducing the environmental pressures that are linked to resource extraction, emissions, and waste.
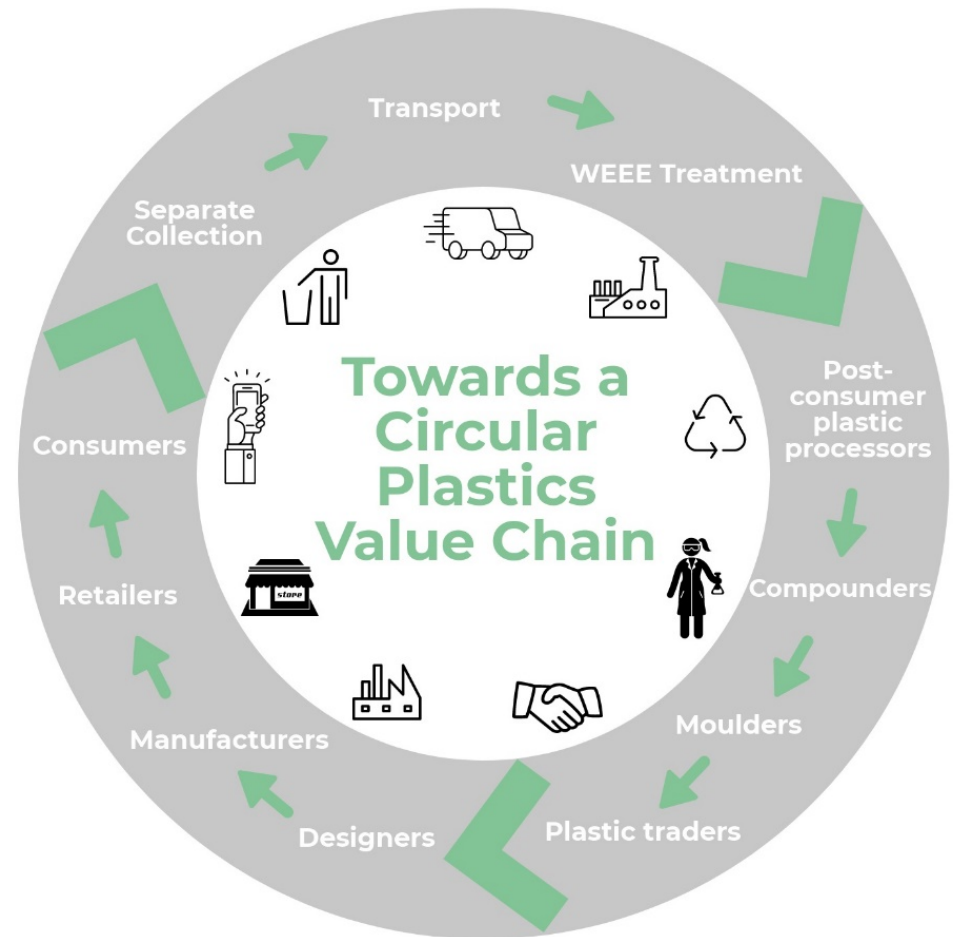
PolyCE Project

PolyCE
POST-CONSUMER HIGH-TECH RECYCLED
POLYMERS FOR A CIRCULAR ECONOMY

https://www.polyce-project.eu/

- EU Horizon2020 project addressing the challenge of **transforming the lifecycle of e-waste plastics** to a more sustainable one.

Main objectives:

✓ Demonstrate the feasibility of a circular model for the plastics supply and value chain.

✓ Develop a grading system for recycled plastics, which will ultimately serve to provide guidelines for designing new electronic products.

Towards a Circular Plastics Value Chain

Transport · WEEE Treatment · Post-consumer plastic processors · Compounders · Moulders · Plastic traders · Designers · Manufacturers · Retailers · Consumers · Separate Collection

UNITED NATIONS UNIVERSITY
UNU-VIE SCYCLE

ProSUM

Prospecting Secondary raw materials
in the Urban mine and Mining wastes

Video length: 2min30sec.

- Every year in Europe, ~9 million tons of WEEE and 7-8M tons of ELVs are generated, and over 1 million tons batteries are sold.

- EU Commission HORIZON 2020 funded project ProSUM delivered the first ***Urban Mine Knowledge Data Platform*** in Europe.

http://www.urbanmineplatform.eu/homepage

THANK YOU!

UNITED NATIONS UNIVERSITY | Vice Rectorate in Europe |
Sustainable Cycles Programme (SCYCLE)
Platz der Vereinten Nationen 1 | 53113 Bonn | GERMANY
www.unu.edu | www.scycle.vie.unu.edu

References

- *Global E-Waste Monitor Report.* The Global E-waste Monitor 2017, a joint effort of the ITU, the United Nations University (UNU) and the International Solid Waste Association (ISWA), provides the most comprehensive overview of global e-waste statistics and an unprecedented level of detail, including an overview of the magnitude of the e-waste problem in different regions.

- *PolyCE Project Latest Newsletter and Blog Articles.* PolyCE (or Post-Consumer High-tech Recycled Polymers for a Circular Economy) is a European Commission funded project that aims to significantly reduce the use of virgin e-waste plastics in new applications, and enhance their recyclability.

- *ProSUM Project Urban Mine Platform Homepage and Video.* The ProSUM project is a European Commission funded project that has created the world's first Urban Mine Platform at www.urbanmineplatform.eu .

- *Step Initiative E-Waste World Map.* This first-of-a-kind e-waste world-map provides comparable, country-level data on the amount of electrical and electronic equipment put on the market and the resulting amount of e-waste generated in most countries around the world.

- *Step Initiative Annual Report: http://www.step-initiative.org/news/step-releases-its-2015-2016-annual-report.html*

- *E-Waste Academy website: http://ewasteacademy.org/*