Opportunities for investment in Appliances scrapping

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Introduction

With increasing consumer demands, technology is growing rapidly, making electronic devices obsolete quickly. This has led to the reduced life span of electrical and electronic products over the last two decades. After its use, EEE is disposed of, generating a waste stream that contains hazardous and valuable materials. This waste stream is referred to as e-waste, or Waste Electrical and Electronic Equipment (WEEE).
Definition and Classification

Waste Electrical and Electronic Equipment (WEEE) is defined as any item of EEE and its parts that have been discarded after the end of its useful life by the owner as waste.

The United States Environmental Protection Agency (EPA), and Directive 2012/19/EU classifies waste into ten categories:

1. Large household appliances, including cooling and freezing appliances
2. Small household appliances
3. IT equipment, including monitors
4. Consumer electronics, including televisions
5. Lamps and luminaires
6. Toys
7. Tools
8. Medical devices
9. Monitoring and control instruments and
10. Automatic dispensers
WEEE generation and quantities

In 2019, the world generated a striking 53.6 Mt of e-waste. The global generation of e-waste grew by 9.2 Mt since 2014 and is projected to grow to 74.7 Mt by 2030 – almost doubling in only 16 years.
WEEE generation per capita

Globally: 7.3 kg per capita

Europe: ranked first worldwide in terms of e-waste generation per capita, with 16.2 kg per capita.

Oceania: 16.1 kg per capita

Americas: 13.3 kg per capita

Asia: 5.6 kg per capita

Africa: 2.5 kg per capita

Ref. The Global E-waste Monitor 2020
WEEE generation in MENA countries

Electronic waste considerations in the Middle East and North African (MENA) region
WEEE collected and recycled globally

In 2019, the formal documented collection and recycling was 9.3 Mt, thus 17.4% compared to e-waste generated. It grew with 1.8 Mt since 2014, an annual growth of almost 0.4 Mt. However, the total e-waste generation increased by 9.2 Mt, with an annual growth of almost 2 Mt. Thus the recycling activities are not keeping pace with the global growth of e-waste. The statistics show that in 2019, the continent with the highest collection and recycling rate was Europe with 42.5%, Asia ranked second at 11.7%, the Americas and Oceania were similar at 9.4% and 8.8%, respectively, and Africa had the lowest rate at 0.9%.
WEEE collected and recycled globally

Global e-waste generated 2019: 53.6 Mt (7.3 kg per capita)

- 17.4% | 9.3 Mt documented to be collected and properly recycled
- 82.6% | 44.3 Mt flows that are not documented

Collection and recycling rates:
- Africa: 0.9%
- Americas: 9.4%
- Europe: 42.5%
- Oceania: 8.8%
- Asia: 11.7%

- 7-20% is exported as second-hand products or e-waste
- 8% is discarded into waste bins in high-income countries
WEEE collected and recycled globally

- Europe: 12 million tonnes
- Asia: 24.9 million tonnes
- Americas: 13.1 million tonnes
- Oceania: 0.7 million tonnes
- Africa: 2.9 million tonnes

- E-waste generated (million tonnes)
- E-waste documented and recycled (million tonnes)
### Countries with the highest e-waste generation per sub-region

#### Eastern Africa

<table>
<thead>
<tr>
<th>Country</th>
<th>E-waste (kt)</th>
<th>kg per capita</th>
<th>%</th>
<th>Mt</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>55.2 kt</td>
<td>1.3%</td>
<td>0.004 Mt</td>
<td>383</td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td>51.3 kt</td>
<td>1.3%</td>
<td>0.004 Mt</td>
<td>383</td>
<td></td>
</tr>
<tr>
<td>Tanzania</td>
<td>50.2 kt</td>
<td>1.3%</td>
<td>0.004 Mt</td>
<td>383</td>
<td></td>
</tr>
</tbody>
</table>

#### Middle Africa

<table>
<thead>
<tr>
<th>Country</th>
<th>E-waste (kt)</th>
<th>kg per capita</th>
<th>%</th>
<th>Mt</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>125.1 kt</td>
<td>2.5%</td>
<td>0.002 Mt</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Cameroon</td>
<td>26.4 kt</td>
<td>2.5%</td>
<td>0.0001 Mt</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Congo</td>
<td>18.3 kt</td>
<td>2.5%</td>
<td>0.0001 Mt</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

#### Northern Africa

<table>
<thead>
<tr>
<th>Country</th>
<th>E-waste (kt)</th>
<th>kg per capita</th>
<th>%</th>
<th>Mt</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>585.8 kt</td>
<td>5.4%</td>
<td>1.3 Mt</td>
<td>240</td>
<td></td>
</tr>
<tr>
<td>Algeria</td>
<td>308.6 kt</td>
<td>5.4%</td>
<td>1.3 Mt</td>
<td>240</td>
<td></td>
</tr>
<tr>
<td>Morocco</td>
<td>164.5 kt</td>
<td>5.4%</td>
<td>1.3 Mt</td>
<td>240</td>
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</tr>
</tbody>
</table>

#### Southern Africa

<table>
<thead>
<tr>
<th>Country</th>
<th>E-waste (kt)</th>
<th>kg per capita</th>
<th>%</th>
<th>Mt</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>415.5 kt</td>
<td>6.9%</td>
<td>0.5 Mt</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Botswana</td>
<td>18.8 kt</td>
<td>6.9%</td>
<td>0.02 Mt</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Namibia</td>
<td>15.7 kt</td>
<td>6.9%</td>
<td>0.02 Mt</td>
<td>67</td>
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</tbody>
</table>

#### Western Africa

<table>
<thead>
<tr>
<th>Country</th>
<th>E-waste (kt)</th>
<th>kg per capita</th>
<th>%</th>
<th>Mt</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>461.3 kt</td>
<td>1.7%</td>
<td>0.6 Mt</td>
<td>382</td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td>52.9 kt</td>
<td>1.7%</td>
<td>0.002 Mt</td>
<td>382</td>
<td></td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>30.0 kt</td>
<td>1.7%</td>
<td>0.002 Mt</td>
<td>382</td>
<td></td>
</tr>
</tbody>
</table>

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**Legend**

- **E-waste generated** (in Mt and kg per capita)
- **E-waste documented to be collected and properly recycled**
- **Population** (in millions)
Asia Countries

Countries with the highest e-waste generation per sub-region

**Western Asia**

- **2.6 Mt | 9.6 kg per capita**
- **Turkey**: 847 kt
- **Saudi Arabia**: 595 kt
- **Iraq**: 278 kt

**Central Asia**

- **0.2 Mt | 7.1 kg per capita**
- **Kazakhstan**: 172 kt
- **Turkmenistan**: 39 kt
- **Kyrgyzstan**: 10 kt

**South-Eastern Asia**

- **3.5 Mt | 5.4 kg per capita**
- **Indonesia**: 1,618 kt
- **Thailand**: 621 kt
- **Philippines**: 425 kt

**Eastern Asia**

- **13.7 Mt | 8.6 kg per capita**
- **China**: 10,129 kt
- **Japan**: 2,569 kt
- **Republic of Korea**: 818 kt

**Southern Asia**

- **4.8 Mt | 2.6 kg per capita**
- **India**: 3,230 kt
- **Iran ( Isl. Rep.)**: 790 kt
- **Pakistan**: 433 kt
Composition of E-Waste

E-waste normally contains valuable, as well as potentially toxic materials. The composition of e-waste depends strongly on factors such as the type of electronic device, the model, manufacturer, date of manufacture, and the age of the scrap.
Policy and Legislation

Since 2014, the number of countries that have adopted a national e-waste policy, legislation, or regulation has increased from 61 to 78. However, regulatory advances in some regions are slow,
Main Problems

- lacks a specific regulatory and policy framework for industrial waste management, *(even though some legislative provisions are in place)*,
- Enforcement is weak, causing industrial waste to end up in open dumpsites mixed with municipal solid waste,
- Absence of companies or entities dedicated to collecting processing,
- More treatment and disposal operations are dependent on the informal sector,
- Failure to properly dispose in designated locations.
Environmental & occupational safety problems

Ramifications:

- Toxic emissions from burning
- Soil & water contamination from chemical disposal
- Inefficient recovery of precious metals
Stakeholder

Informal Sector

Consumer
Householders/Public Entities and private Enterprises

Sareha/Robabekia (Street collector)

Drop off points/shops

Merchant

Refurbisher and Dismantlers

E-waste Recyclers
Stakeholder
Informal Sector
Stakeholder

Formal Sector – ITG, ERC, Spear ink
E-waste Proper Management Benefits

- Increase Job opportunities
- Extracting precious materials
- Refurbishment: Reduce energy consumption for producing new products – thus assist in the Climate change issue
Contact us!

MeetMED
Mitigation Enabling Energy Transition in the MEDiterranean region
Together We Switch to Clean Energy

For any inquires or comments, please don’t hesitate to contact us

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This project is funded by the European Union
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