UNIDO E-waste Program and the Circular Economy

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CIRCULAR ECONOMY:
DEVELOPMENT OF RECYCLING INDUSTRIES
Vienna, 15 November 2018
Agenda

1. E-waste management and the Circular Economy

2. UNIDO approach to E-waste management

3. An example: the UNIDO-GEF LAC E-waste project
E-waste management and the Circular Economy
E-waste: facts, challenges and opportunities


- **“2nd-hand” equipment (mostly e-waste) exported to developing countries** where it cannot be properly managed or disposed of.

- **WEEE has hazardous substances**: POPs, Ba, Cd, Pb, Hg, Cr, Pd, etc. CRTs, flat screens, batteries, fridges and compact fluorescent lamps pose esp. challenges. Skilled operators are required.

- **“Urban mining” / “waste refining” are needed**: by 2030 developing countries would discard 400-700 M obsolete PCs/year and developed countries 200-300 M:

- **Scarce materials used in producing electronics**: about 10% of gold worldwide and other (Pt, Pd, Ag...). There is 40-800 times more gold in 1 ton of Printed Wiring Boards (PWB) than in 1 ton of ore.
Main barriers to proper E-Waste Management

• Lack of regulations and current regulatory loopholes that cause uncertainty and permit illegal operations
• Limited management and recycling options which may be very costly and subject to commodity price fluctuations
• Wide variety of stakeholders, views and differing perspectives that create political and policy challenges
• Challenging trans-boundary movement of e-waste as hazardous wastes

Sources: Khaliq et al. (2014); Global E-waste Management Market (2011-2016)
Rationale for the CE approach

1. Circular Economy seeks optimal management of EoL e-products by promoting reuse, refurbishment and recycling to reduce the rate of resource consumption.

2. The search for smarter e-product design and business models also contribute to reduce e-waste and further promote the virtuous material and economic cycles.
The circular “cradle to cradle” model

- Green Products w/out Toxics, Long-life, Recyclable
- Collect at End-of-Life, Re-manufacture
- Extend Lifetime of products through Better Service
- Separate Waste, Re-use Resources
- Minimise Waste
- Generate Increased Income
- Cleaner Production w/Less Resource Use
- Reduce Resource Dependency
- Reduce Environmental Footprint

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Reduce Resource Dependency

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The UNIDO approach to E-waste management
UNIDO Approach to E-waste management

UNIDO and its partners help build and consolidate local capacities

• By promoting **sustainable e-waste recycling industries that recover efficiently and safely valuable resources**
• **Generating quality jobs, and care for the environment and health.**

- Green recycling industries are key for implementing a circular economy
- Partnerships for action and technology transfer help countries develop e-waste management systems and strategies based on the whole recycling value chains and life-cycle analyses
- UNIDO enhances N-S, S-S and triangular cooperation and knowledge sharing
UNIDO E-waste project portfolio

Finished / On implementation:
- Uganda, Tanzania and Etiopia
- Cambodia
- The Philippines
- Regional WEEE Project for Latin America

Pipeline:
- Regional WEEE Project for ECOWAS**
- Regional WEEE Project for SADC**

**= Technically approved by the GEF
UNIDO Partnerships/ Networks for Success

GEF / UN

NGOs / Others

GOVERNMENTS

Conventions

Platforms

Businesses

UNIDO

UNEP

UNDP

UNU
Example: the UNIDO-GEF LAC E-waste project
13 participating countries

- Guatemala
- El Salvador
- Costa Rica
- Honduras
- Nicaragua
- Panama
- Venezuela
- Ecuador
- Peru
- Bolivia
- Chile
- Uruguay
- Argentina
Overall Objective

To strengthen national initiatives and enhance regional cooperation for the environmentally sound management of POPs in Waste of Electronic or Electrical Equipment (WEEE) in Latin-American Countries

- GEF-funded (9.5 million USD) plus 71.4 million USD cofinancing
- PIF approved February 2014; PPG Phase started June 2014
- GEF CEO Endorsement on March 2017
- Project officially launched on March 2018
- Next meeting in Costa Rica on March 2019
## Main project components

<table>
<thead>
<tr>
<th>Components</th>
<th>GEF grant, USD</th>
<th>Co-financing, USD</th>
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<tbody>
<tr>
<td>Strengthening of national e-waste management initiatives</td>
<td>3,600,000</td>
<td>13,320,000</td>
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<tr>
<td>Strengthening of national capacities on e-waste dismantling and recycling facilities/infrastructure</td>
<td>3,900,000</td>
<td>43,340,000</td>
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<tr>
<td>Enhancement of Regional Cooperation on e-waste management</td>
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<tr>
<td>Project Monitoring and Evaluation</td>
<td>200,000</td>
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<td>Project Management Costs</td>
<td>450,000</td>
<td>3,703,912</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>9,500,000</strong></td>
<td><strong>71,411,312</strong></td>
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Key project elements

1. Detailed inventories of existing WEEE volumes and ongoing initiatives
2. Policy & legislation development / enhancement, including funding mechanisms
3. Capacity building, training and awareness-raising
4. Improved e-waste strategies, collection and processing schemes
5. Up-scale of national e-waste dismantling / pre-processing facilities, and set-up of sustainable business models
6. Connection to downstream markets on national, regional and international levels in accordance with international conventions, e.g. Basel Convention
7. Partnerships for success (13 countries, 15+ exe. partners, 40+ cof. Partners)
Thank you!

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