15th ITU Symposium on ICTs, Environment, Climate Change and Circular Economy

Session 2: Advancing Circular Economy in Africa - the importance of assessing the performance of ICT goods and how a Digital Product Passport can help

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Improving the circularity of ICT products through regulation and standards

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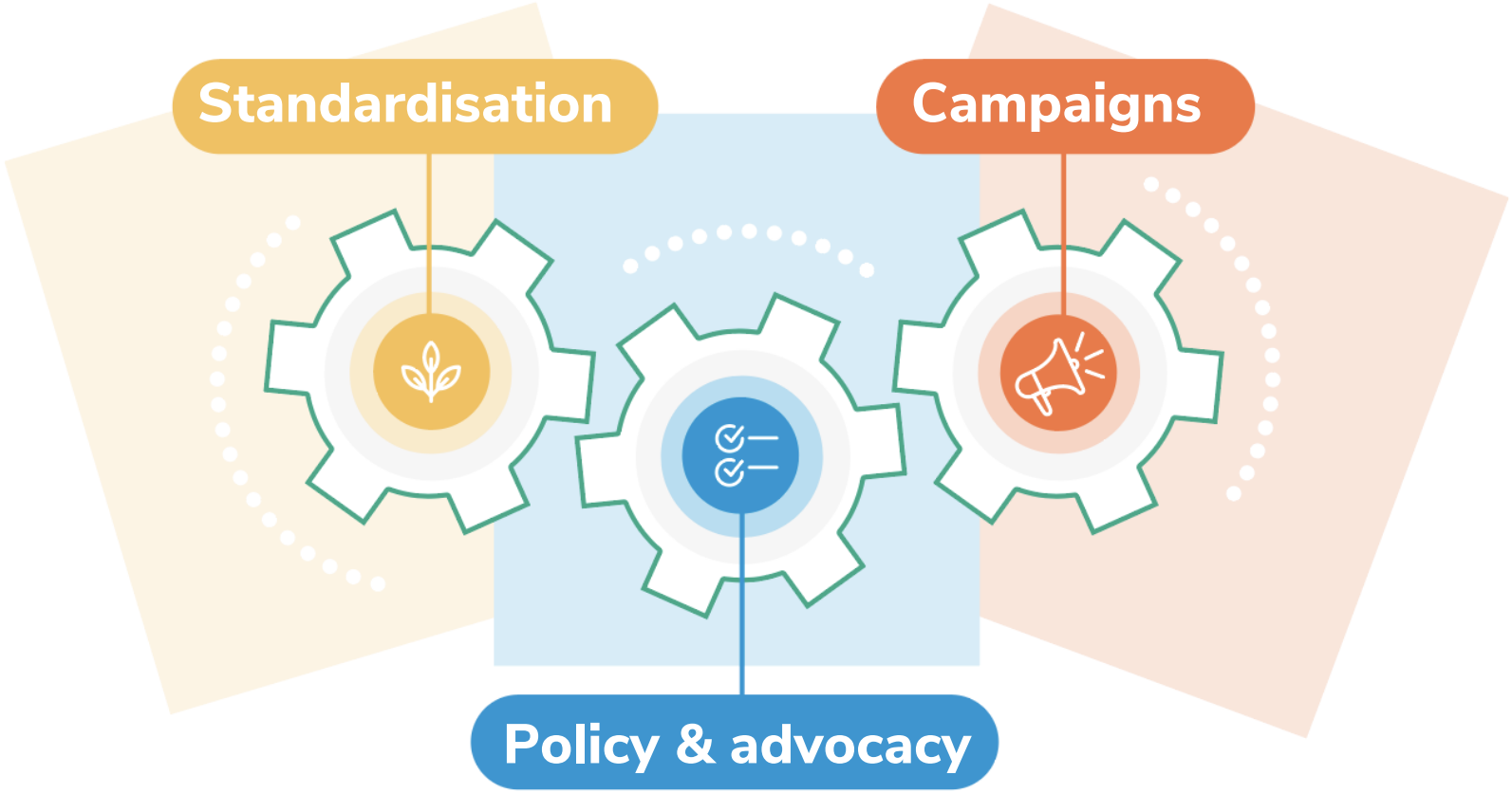
ECOS

Environmental Coalition on Standards

is an international NGO with a network of members and experts advocating for environmentally friendly technical standards, policies, and laws.

The ECOS method – how do we work?



ECOS global engagement

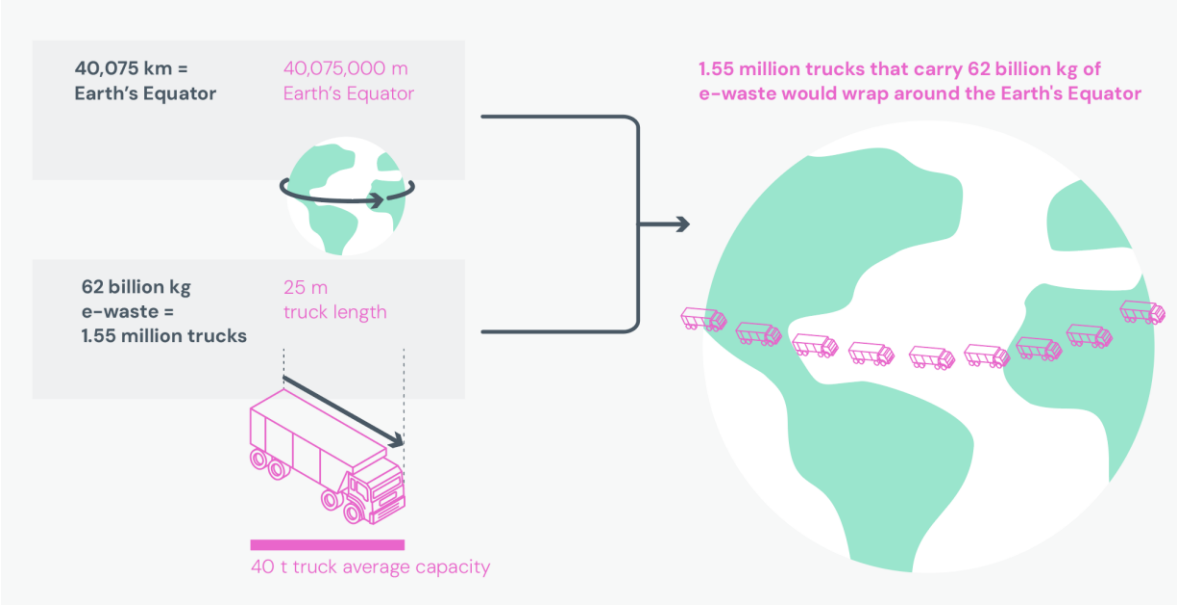
ECOS STRATEGIC GOAL IV
Strengthen the voice of environmental organisations in international standardization

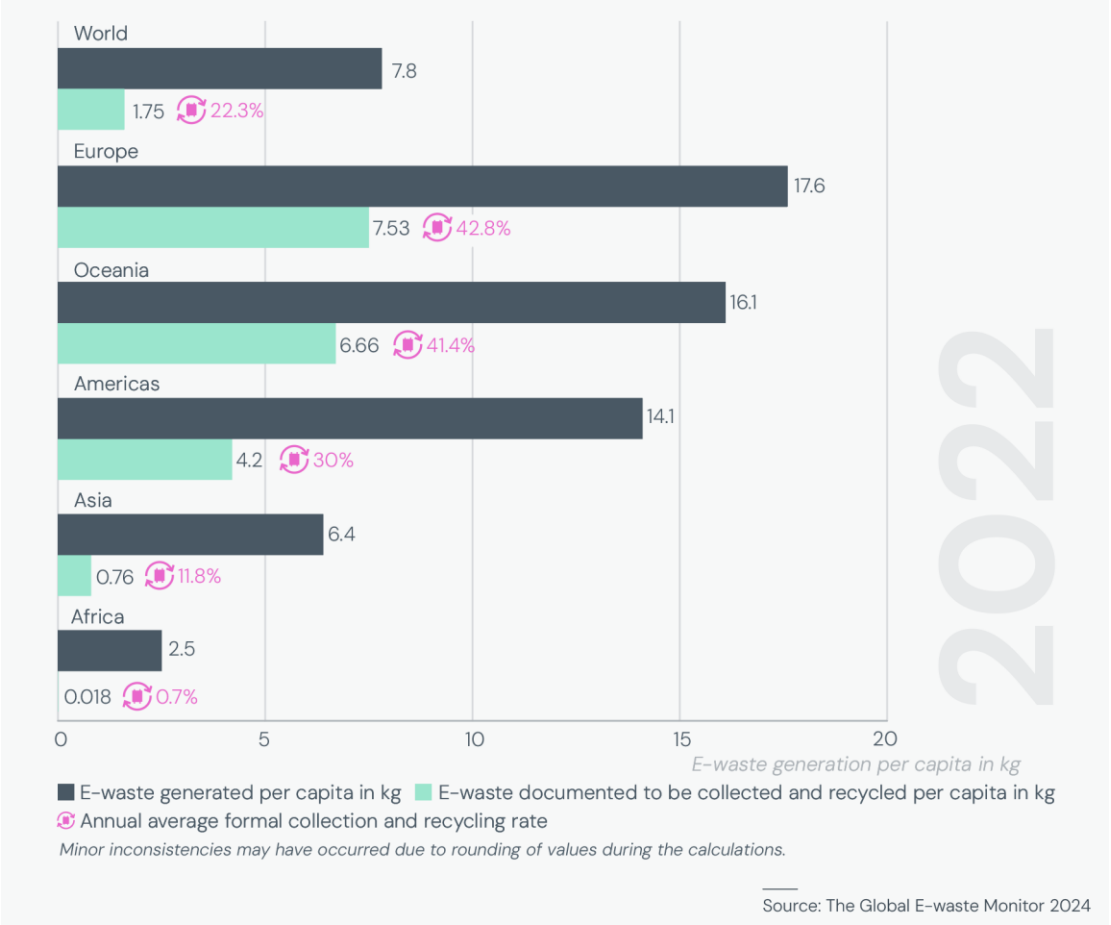
- ❑ Proactive engagement in ISO, ITU & IEC standards
- ❑ Increasing collaboration in Africa through regional standards & policies
- ❑ Advocate for increased access for environmental experts on standards and technical work programmes
- ❑ International dialogue and partnerships as a thought leader in standards and sustainability(UNEP, UNCTAD, UNFSS, UNECE)
- ❑ ECOS is part of advisory council for the Global Electronics Council
- ❑ Global reach projects with local partners in Asia
- ❑ Engaging on CEN/CLC Africa Taskforce

Sustainable electronic products and batteries: Why necessary?

- **Fastest growing waste stream in the world**
- **2022: 62 billion kg of e-waste generated globally**
- **Only 22.3% collected and recycled globally (ITU, 2024)**
- **Trigger conflicts, human rights abuses, chemical pollution and environmental degradation**
- **Standards and regulations are still insufficient**

Sustainable electronic products and batteries: Why necessary?





What ECOS wants to achieve?

- The global market provides enabling conditions for low environmental impact electronic products and batteries: ambitious standards, regulations and labels
- Electronic products and batteries are the instruments of a fair digital transition
- Through a life-cycle approach, advocating for standards, laws and ecolabels driving the global market towards sustainable electronic products and batteries with:

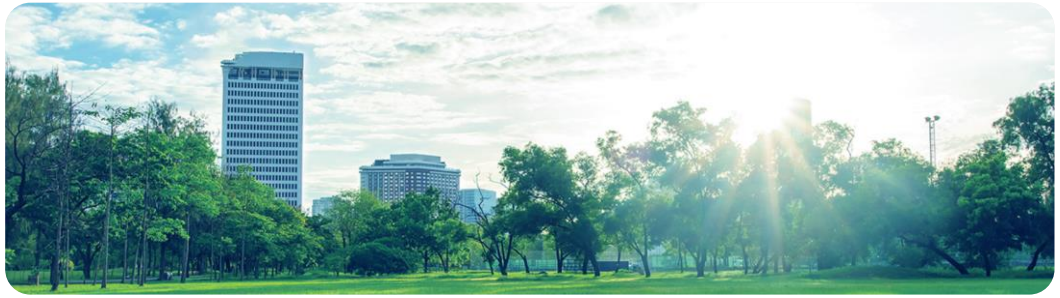
1. Electronic products and batteries that are long-lasting, repairable and energy-efficient

2. With better access to repairability, reusability and recyclability information, waste management prevents waste electronics

3. A reduced and better-quality extraction of minerals respecting environmental and social requirements

ECOS strategy and activities

- **Influence standards and labels at international and EU level to push for sustainable innovation**
- **Looking to collaborate with other regions interested in this work**
- **Sustain and expand environmental alliances**
- **Develop research and capacity building**



How should ICT products be designed to improve their circularity?

Durability

Resistance to:

- drop / shock
- wear (scratch, abrasion, indentation, cutting, bending)
- surface cleaning (priority surfaces)
- water and dust ingress
- low pressure for altitude testing
- exposure to high and low temperatures
- temperature shock (both operating and in storage)
- rain (including wind blown and freezing rain)
- humidity
- fungus
- salt fog (for rust testing)
- sand and dust exposure
- explosive atmosphere
- acceleration
- transport shock
- random vibration
- leakage
- UV-light and other type of radiation

Reliability-related testing such as:

- cycle-based measures e.g. battery lifetime (cycles)
- measurement of reduction in performance over time e.g.
- lumens delivered
- battery endurance (hours)
- noise / vibration

Pre-purchase information provision on:

- expected lifetime
- intended use conditions
- warranty
- battery replaceability

Information on:

- instructions for correct battery use
- battery status
- installation/maintenance instructions
- consumable availability

Digital support:

- battery management software
- pre-installed digital file management
- availability of software updates
- information to user on impact of updates
- update reversibility
- ability to install open-source operating system
- extended availability of supporting cloud services
- decoupling of device from cloud services

How should ICT products be designed to improve their circularity?

Repairability/Reusability

Ease of disassembly:

- Reduce disassembly depth to a minimum (the number of steps to access and replace a spare part)
- Easy-to-reuse fasteners and connectors, preferably captive (such as clips)
- Disassembly should be made possible with no tools or with commonly available tools
- No bundling of priority parts

Accessibility to the layperson:

- Repair possible in a use or, at the most, workshop environment
- Repair possible for a layperson or a generalist

Availability of spare parts:

- Available to everyone or at least to professional repairers
- Delivered in a short amount of time (5 to 10 days maximum)
- Available at a price which is reasonable (ideally no more than 30% of the price of the product when sold new)
- Standardized
- Available for a period of time that corresponds to the expected durability of the product category)

Availability of repair information:

- Diagnositc support and interface
- In-depth step by step repair information (similar to what manufacturers would give to their own repairers)
- Publicly available (not only to the purchasers to facilitate second-hand repair) at no cost

Readiness for extended or second use:

- memory extension option
- upgradeability (software)
- direct product takeback for remanufacture or reuse

Software functions:

- No part-pairing/part-serialisation
- Secure data transfer and deletion functionalities
- Ability to reset password and factory settings

How should ICT products be designed to improve their circularity?

Recyclability/Recycled content

Recyclability and recoverability:

- Encourage compatibility of polymers in parts containing plastic
- High recyclability rate (over 90%)

Hazardous and restricted substances:

- Limitation of use of hazardous flame retardants

Recycled materials:

- High percentage of recycled materials

Standards - Smartphones

ITU-T/ETSI DES/EE-MICT4 V0.0.X - Environmental Engineering (EE); Method for environmental performance scoring of smartphones

This standard is a collaborative effort between ITU-T and ETSI. It is currently being drafted.

At the moment, the scoring approach encompasses different aspects of durability / repairability / reusability / recyclability:

Durability	Repairability/Reusability	Recyclability/recycled content
Warranty	Availability of spare parts	Polymer compatibility
Dust and water protection	Data deletion functions	Restricted substances
Drop resistance	Disassembly depth	Recycled content
Battery life	Types of fasteners	
Scratch resistance	Types of tools needed	
OS support	Access to repair/reuse/upgrade info	
Etc.		

Regulation – Mobile phones and tablets

COMMISSION REGULATION (EU) 2023/1670 laying down ecodesign requirements for smartphones, mobile phones other than smartphones, cordless phones and slate tablets

The first time the EU developed material efficiency requirements for an ICT product. Similar rules for computers are currently under development.

Durability	Repairability/Reusability	Recyclability
Resistance to accidental drops	Availability of spare parts	Marking of plastic components
Scratch resistance	Access to repair and maintenance info	Access to dismantling info
Protection from dust and water	Maximum delivery time	
Battery endurance	Info on the price of spare parts	
Battery management (80% capacity charging option and no charge when fully charged)	Types of tools necessary	
OS updates	Types of fasteners allowed	
	Repair environment and skills	
	Software (part-pairing and data deletion)	

THANK YOU

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