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**BASEL | ROTTERDAM | STOCKHOLM
CONVENTIONS**

The role of the Basel, Rotterdam and Stockholm (BRS) Conventions for Environmentally Sound Management E-waste

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Mr. Rolph Payet, Executive Secretary of the
Basel, Rotterdam and Stockholm Conventions

E-Waste Generation

- The world is experiencing significant electronification including a digital transformation, with technologies profoundly changing the way we live, work, learn, socialize, and do business.
- This growth has seen a concomitant surge in the amount of EEE and e-waste.
- The global e-waste collection and recycling rate is not keeping pace with this growth.
- In 2022, the world generated 62 billion kgs of e-waste (each person, on average, 7.8 kg/year)
- About 22% of the e-waste generated is formally recycled.
- The rise of generation is outpacing recycling rates.

Source: Global e-waste monitor 2024





Opportunities

E-waste has high recycling value

- Plastics
- Ferrous metal
- Non-ferrous metals
- Precious metals
- Special metals

E-waste recycling is economically viable and attractive



Minimize the generation of hazardous wastes in terms of quantity and degree of hazard;

Control transboundary movements of hazardous wastes and other wastes (conditions and the Prior Informed Consent procedure);

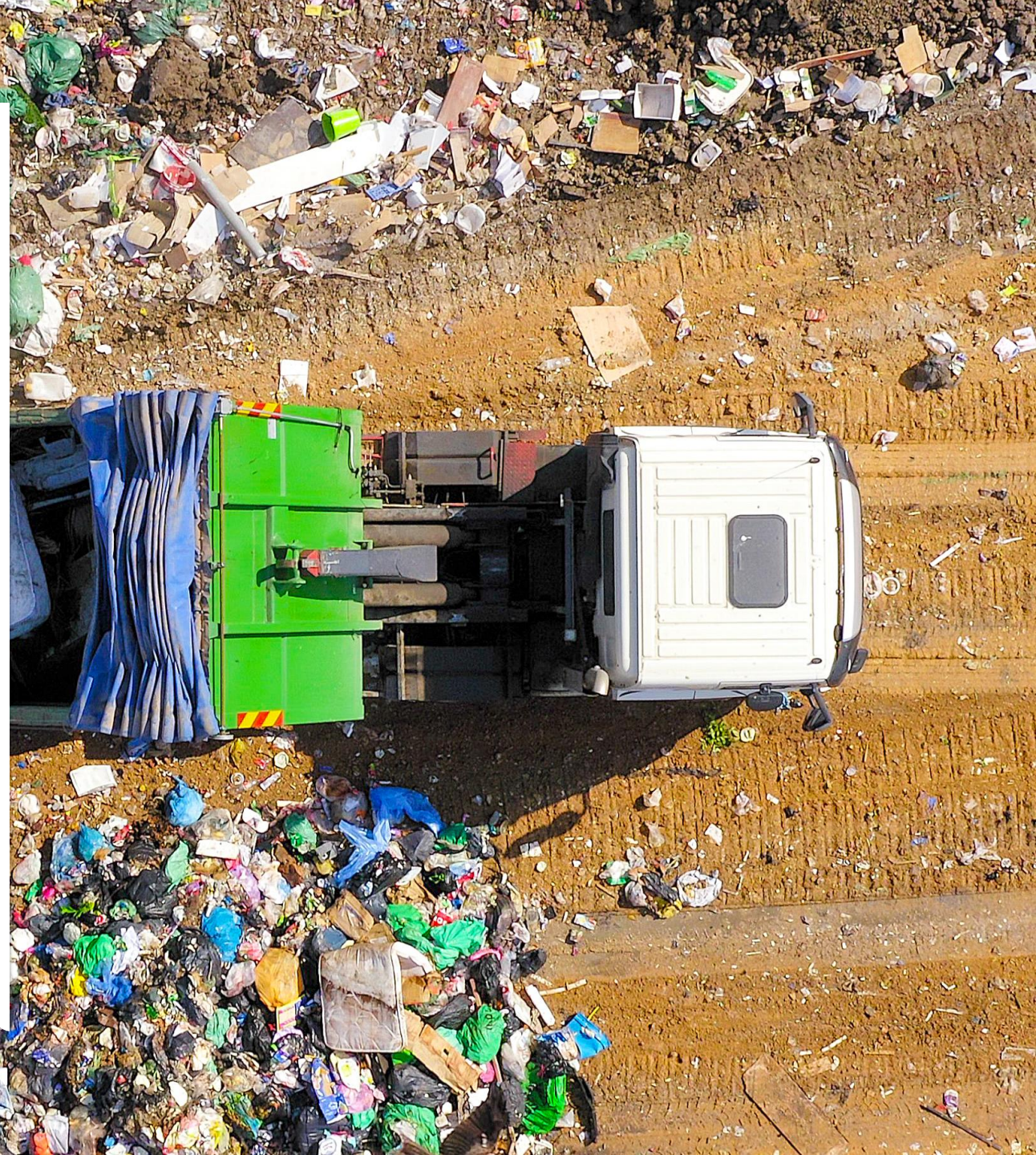
Promote the environmentally sound management of hazardous wastes and other wastes.

The Basel Convention

- Adopted: 22 March 1989
- Entry into force: 5 May 1992
- 191 Parties
 - **Objective:** To protect human health and the environment against the adverse effects of hazardous wastes
 - **Scope:** Hazardous wastes and other wastes

Wastes covered

- ❑ **Wastes** are substances or objects that are disposed of, intended to be disposed of, or required to be disposed of by national law – Article 2.1. Disposal operations set out in **Annex IV**.
- ❑ **Hazardous wastes:**
 - ❑ **Annex I** (waste streams, waste constituents) and **Annex III** (hazardous characteristics), as further elaborated in **Annexes VIII and IX**
 - ❑ **Defined nationally**
- ❑ **Other wastes:**
 - ❑ **Annex II** (household wastes, residues from incineration of household wastes, plastic waste, e-waste)

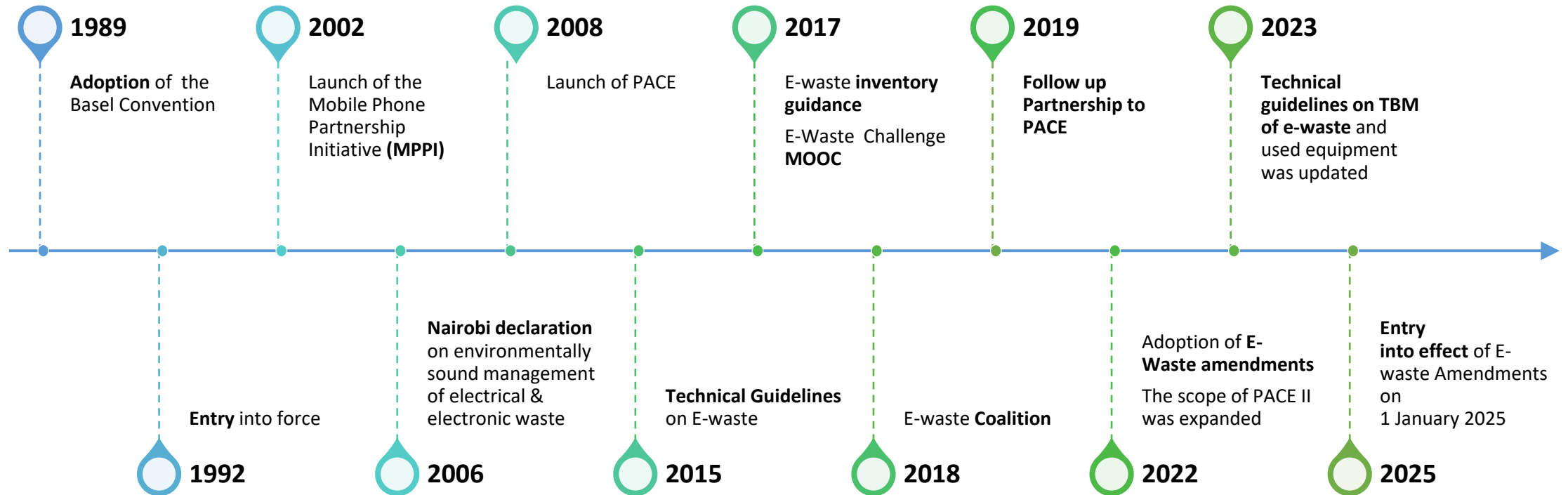


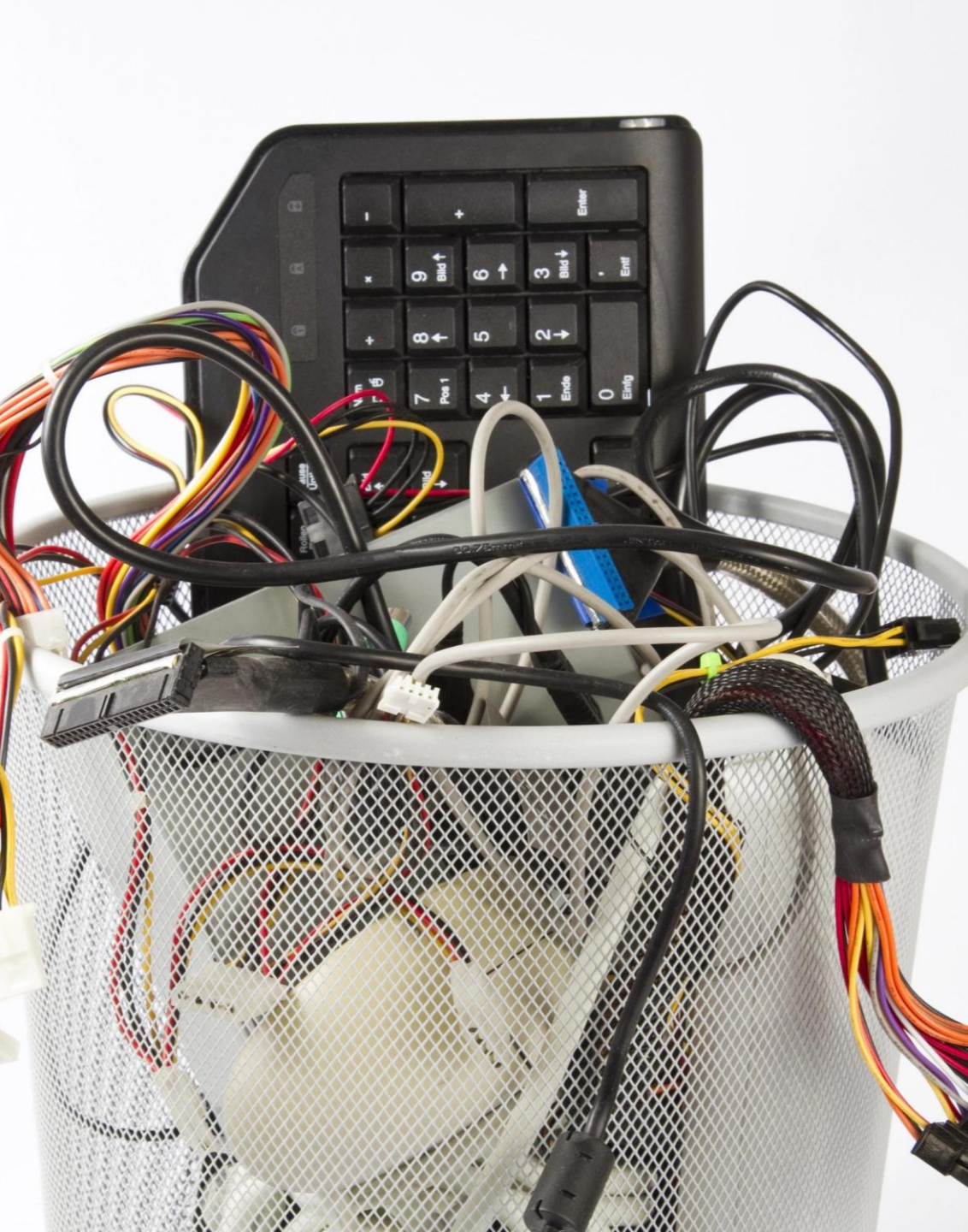


The Basel Convention and WEEE

- The Basel Convention is the only **global** instrument dealing with hazardous wastes;
- Trade of e-waste can happen, but it needs to follow the prior informed consent (**PIC procedure**), and it should respect the principles of environmentally sound management (**ESM**) of wastes;
- Secretariat activities through the technical assistance programme and the E-waste Partnership (PACE II), and collaboration with other international organizations (ITU, UNECE, UNU, Eurostat, OECD, UN Statistics Division, etc).

The Basel Convention and WEEE





E-waste amendments adopted by COP-15 in 2022

- Adopted amendments to **Annexes II, VIII and IX** regarding e-wastes.
- **Non-hazardous e-wastes added** to Annex II (“wastes requiring special consideration”).
 - All transboundary movements of **e-wastes**, whether hazardous or not, will be subject to the prior informed consent (**PIC**) procedure.
- The amendments became **effective on 1 January 2025**.
- **The Ban Amendment also applies prohibiting export from developed to developing countries of hazardous wastes**

E-Waste Amendments



Annex VIII (hazardous waste)

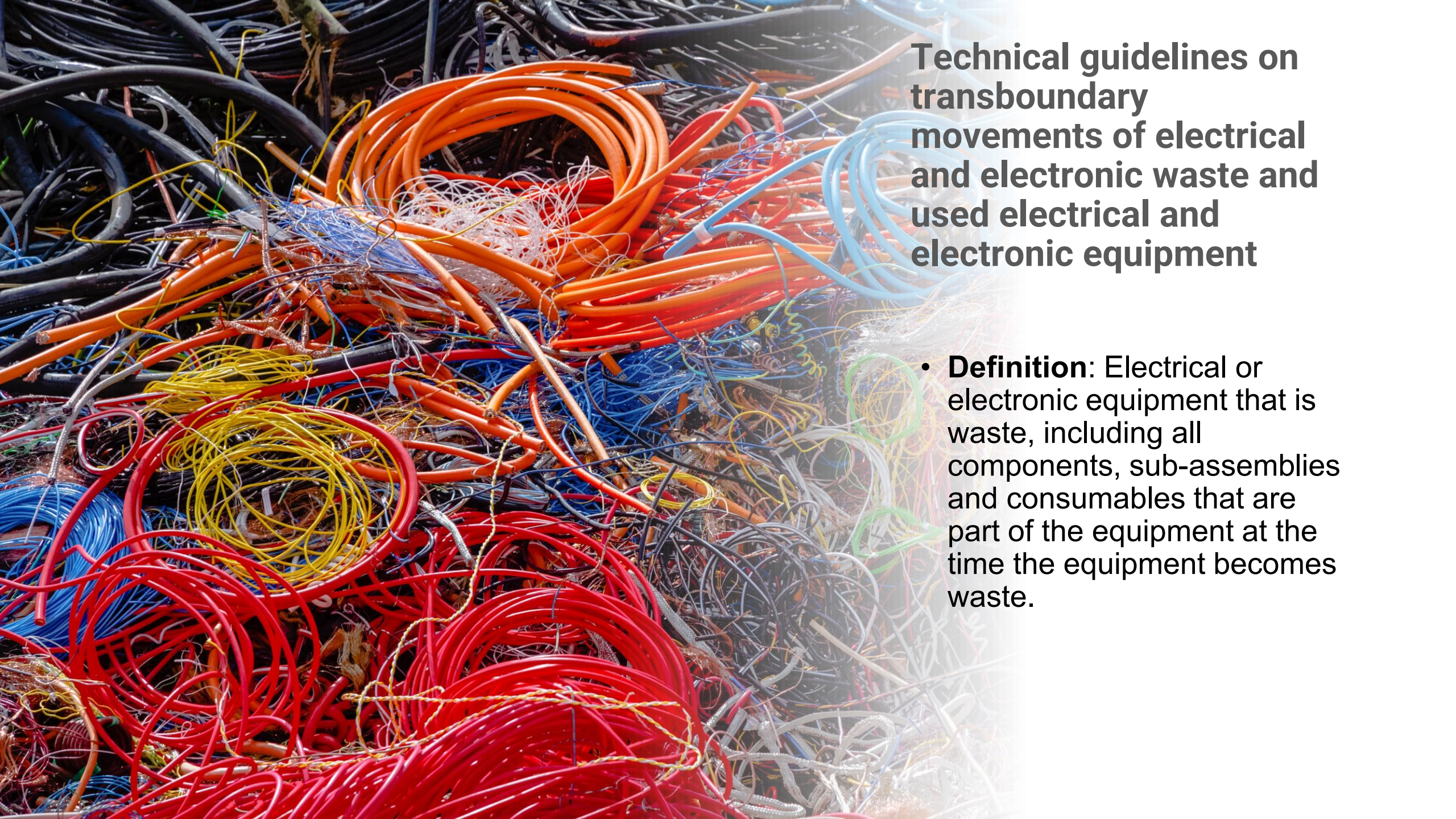
- New entry A1181
- PIC Procedure
- Hazardous e-wastes, its components and wastes from the processing of e-waste (e. g. fractions from shredding),

Annex II (waste for special consideration)

- New entry Y49
- PIC Procedure
- E-wastes, its components and wastes from the processing of e-waste (e. g. fractions from shredding), except for those e-waste covered by entry A1181

~~Annex IX (non-hazardous)~~

- No PIC Procedure
- Deletion of the existing e-waste entries B1110 (e-wastes) and B4030 (single-use cameras).



Technical guidelines on transboundary movements of electrical and electronic waste and used electrical and electronic equipment

- **Definition:** Electrical or electronic equipment that is waste, including all components, sub-assemblies and consumables that are part of the equipment at the time the equipment becomes waste.



The role of the Basel Convention in recycling key metals and minerals

Waste Batteries Generation

- Waste Lithium-ion batteries are estimated to be 70% of the waste batteries currently generated in the world
- Only in China used and waste LIBs from EVs will reach 200–500 million tons in 2030 with an annual decommissioning rate calculated at 15%
- The International Energy Agency, EVs produced in 2019 generated 500,000 tons of LIB waste,
- Total amount of waste LIBs generated by 2040 up to 11 billion tons.

ESM of Waste Batteries

- Reuse
- Recycling valuable metal elements e.g.
 - lithium (Li),
 - nickel (Ni),
 - manganese (Mn),
 - cobalt (Co)
 - Zn



The Basel Convention and e-waste recycling

- Updating of technical guidelines on ESM of Waste-lead acid batteries (BC-16/6)
- Development of new technical guidelines on ESM of other waste batteries, including lithium-ion batteries (BC-16/6)
- PACE and MPPI guidance documents on repair, refurbishment and recycling of computing equipment and mobile phones
- PACE II guidance documents on ESM of waste TV screens, refrigerators, cooling and heating equipment
- Technical Guidelines on ESM metals extraction (R4)
- Guidance document on E-waste codes under the Basel Convention (under development)





PACE II

- Focus on used and waste:
 - TV screens, audio and video eq;
 - Refrigerators, cooling and heating equipment;
 - Mobile Phones; and
 - Computing Equipment.
- Programme work on:
 - Pilot projects; e.g. **Promoting the nexus between EPRs and the Digital Product Passport in Batteries**
 - Dissemination activities;
 - Development of ESM guidance on used and waste: TVs, refrigerators, cooling and heating equipment;
- Partnership reaches out to over 500 entities involved with the members.



The Basel Convention: Mobile Phone Partnership Initiative (MPPI)

Guidelines on:

- Refurbishment of Used Mobile Phones;
- Collection of Used Mobile Phones;
- Material Recovery and Recycling of End-of-Life Mobile Phones;
- Awareness Raising-Design Considerations;
- Transboundary Movement of Collected Mobile Phones.

Guidance document on the environmentally sound management of used and end-of-life mobile phones.



• Guidelines on :

- Environmentally Sound Testing, Refurbishment, and Repair of Used Computing Equipment;
- Environmentally Sound Material Recovery and Recycling of End-of-Life Computing Equipment.
- Overall **guidance** document.
- **Report** with ESM criteria recommendations.
- **Report** on strategies, actions and incentives to promote environmentally sound management of end-of-life-computing equipment.
- **Manual** on Steps to Establish and Implement Environmentally Sound Management for Used and Waste Computing Equipment

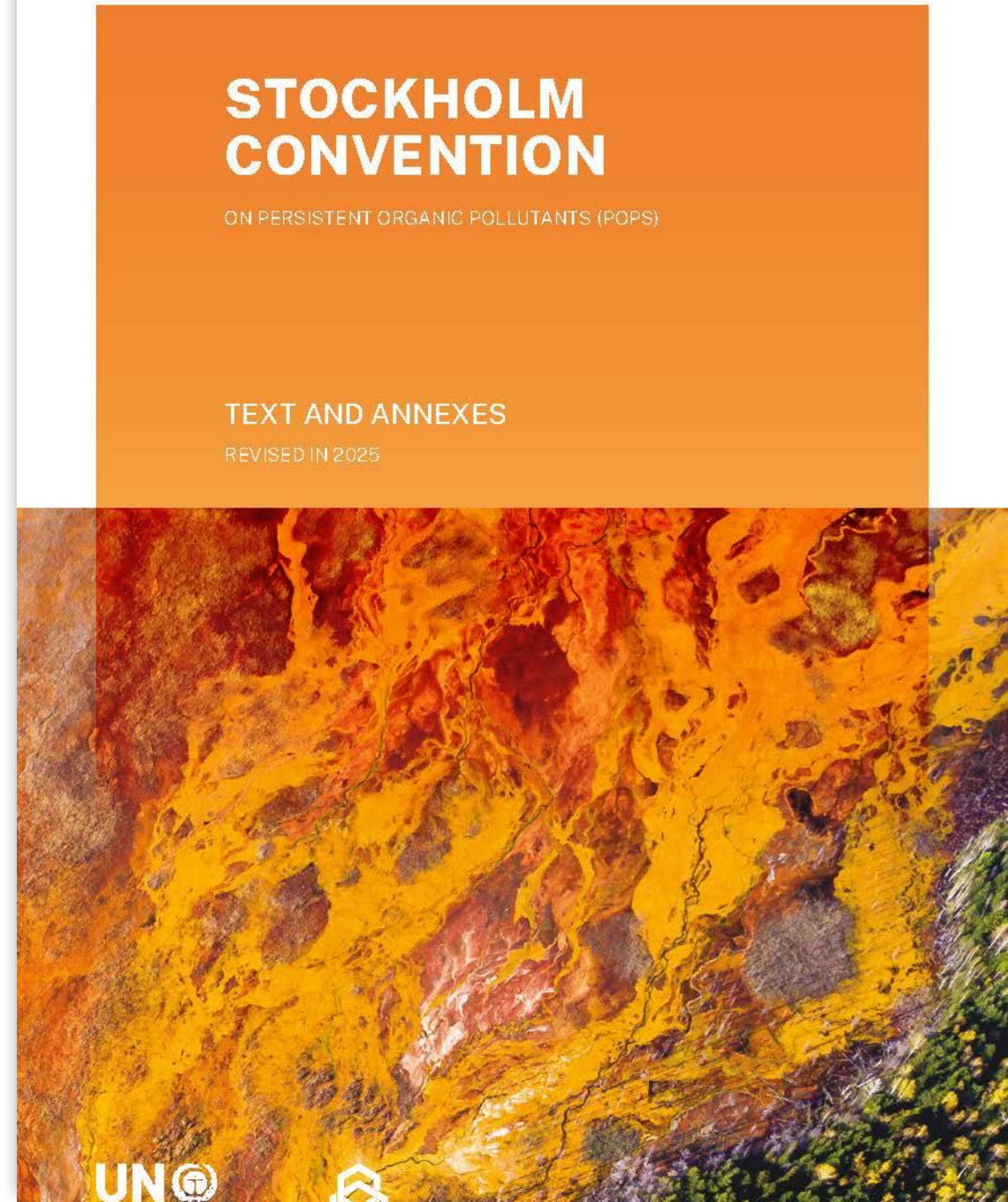
Challenges

- Major environmental and human health impacts result from dismantling, material recovery and final disposal.
- Cable burning is a major source of dioxin emissions.
- Children and women (transfer of issues to the next generations) are the most vulnerable groups in the e-waste related activities.
- Current recycling practices focus on recovery of steel, aluminum and copper and are quite inefficient for other metals.
- Several challenges related to the enforcement of the Basel Convention provisions (e.g., clear distinction between used EEE and e-waste) and the management of the waste following ESM principles.



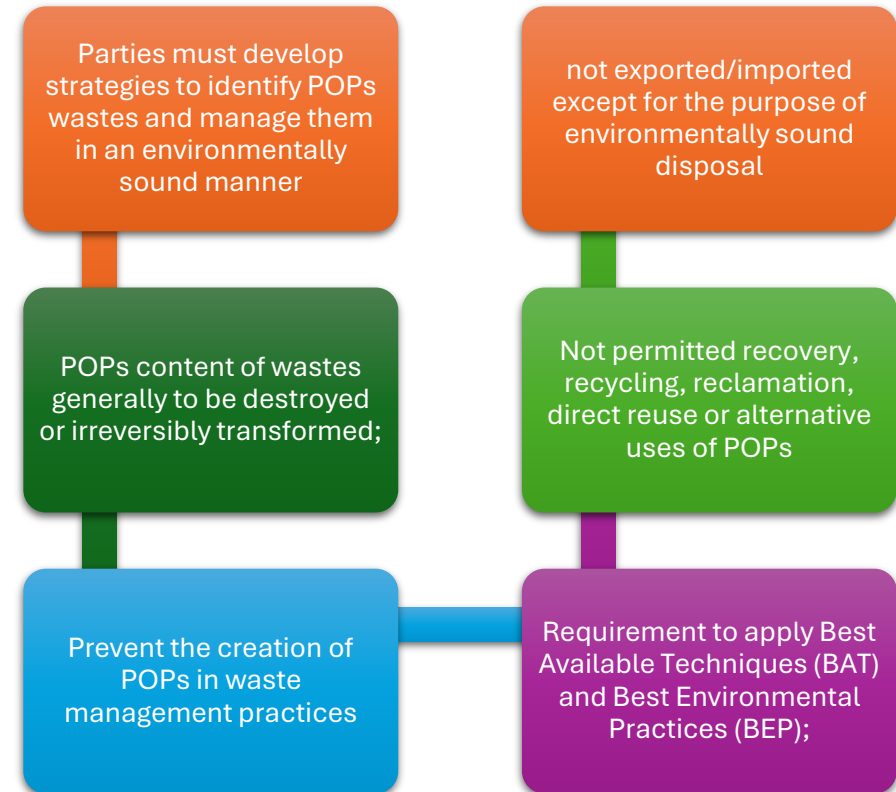
The Stockholm Convention on POPs

- Entered into force in 2025
186 Parties
- POPs in E-waste:
 - PCBs
 - POPs Brominated Flame retardants
 - POPs Perfluorinated substances
 - UV-328
 - Short and medium chain paraffins, etc.





Stockholm Convention provisions on POPs Wastes such as E-waste containing or contaminated with POPs





Food for Thought

- ❑ **E-waste trade can happen, but it needs to respect the applicable rules of law and needs to be followed by ESM principles.**
- ❑ **Recycling of batteries (which are part of EEE and WEEE) will be a priority in the future to stabilize prices and to avoid adverse impacts on human health and the environment.**
- ❑ **Millions of poor people in developing countries are living from valuable materials** in end-of-life e-products or e-waste.
- ❑ **Introduction of proper recycling system** must find a way to involve the informal sector without harming health and environment.
- ❑ The collection, segregation and primary dismantling of non-hazardous fractions of **e-waste can be organized** with relatively cheap, simple but safe processing methods.
- ❑ Collection, dismantling, refurbishment and recycling of used and end-of-life e-products **provides jobs to thousands of people, women and men;**



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