UN environment programme

Assessment Report on Issues of Concern

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HAZARDOUS SUBSTANCES in the LIFE CYCLE of ELECTRICAL and ELECTRONIC PRODUCTS (HSLEEP)

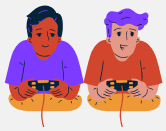
1. Introduction

Electrical and electronic products (EEP), also referred to as electronic and electrical equipment (EEE), include any device with a circuit, battery or plug. They can contain many chemical additives for certain properties such as flame retardancy.

2. Why is it relevant?

Some chemical additives may be hazardous, including toxic metals and persistent organic pollutants (POPs), and may be released during production, use, transport, and end-of-life treatment (disposal or recycling), leading to environmental and human exposures and possible adverse effects.

In the manufacturing of electrical and electronic products, workers may come into direct contact with hazardous substances, which can result in significant adverse effects including high cancer rates and negative effects on the reproductive, cardiovascular and immune systems.



Consumers experience exposures in the use phase, typically in indoor environments.

Hazardous substances can be released from electronic waste during disposal and recycling, affecting ecosystems by contaminating the air, water and soil, and entering food chains.

Women and children, as well as those living in the vicinity of recycling sites, remain among the most vulnerable groups.

Sound management of hazardous substances in EEP, particularly during end-of-life treatment, is challenging. End-of-life EEPs (“e-waste”) constitute the fastest growing waste stream in the world, and their recycling rates remain low in many countries.

It would be far more effective to act on the earlier life-cycle stages of EEP. Changing design features and other preventative actions would facilitate minimizing the use of certain hazardous substances.

In particular, informal and rudimentary recycling methods, as well as uncontrolled disposal, are responsible for large releases of hazardous substances in many developing and transition countries, impacting human health and the environment locally.

Such a life-cycle approach to addressing hazardous substances in EEP was recognized by the international community, when adopting HSLEEP as an issue of concern under the Strategic Approach to International Chemicals Management (SAICM) at the second meeting of the International Conference on Chemicals Management (ICCM2) in 2009.

For more detailed information on HSLEEP, please see Chapter 3.4 of the ***Assessment Report on Issues of Concern*** and Part A, Chapter 4 of the ***Annexes to the Assessment Report on Issues of Concern***. Available on the UNEP website.

3. Existing instruments and actions

Many instruments and actions have been developed to address HSLEEP at different life-cycle stages and at different levels. In particular, multiple resolutions, declarations and strategic plans have been adopted at the international level, showing high political commitment on the matter.

For example, the Plenipotentiary Conference, the governing body of the International Telecommunications Union (ITU), adopted targets to increase the global e-waste recycling rate to 30% and raise the percentage of countries with e-waste legislation to 50% by 2023.

At the national level, many countries have set up their own laws to restrict certain hazardous substances in EEP, or to define roles and responsibilities and targets in managing e-waste, or both. In addition, levies have been used as an instrument to address chemicals in EEP.

These instruments are complemented by voluntary instruments and actions. Some producers have voluntarily phased out or restricted certain hazardous substances in their products, and third-party verification and labelling schemes (e.g. ecolabels) have been set up to address certain hazardous substances in defined product categories.

Many intergovernmental organisations have played an important role in setting up recommendations, guidance and tools, as well as implementing country-level projects, to support countries in sound management of e-waste. Furthermore, different partnerships and programmes have been initiated to address either specific issues or the whole life cycle.

See Annexes for more

4. Challenges and opportunities

Many instruments and actions have focused on e-waste. The current level of efforts by countries to restrict certain chemicals in EEP and complementary voluntary restrictions by some manufacturers is likely still not adequate.

The use of some hazardous substances in EEP may be unavoidable because those substances confer unique functionalities, such as the use of tantalum.

With projected increases in digitalisation, global population growth and other factors, the use of EEP will likely grow and thus exacerbate current challenges in handling hazardous substances in EEP and e-waste.

In developing and transition countries, a substantial fraction of e-waste is handled by informal sectors, often with limited awareness of hazardous substances in EEP and minimal protection.

To step up global action a more proactive approach in all countries to addressing the early life-cycle stages of EEP needs to be considered, including levies.

Product design and associated regulations need to take such cases into account to minimise exposure throughout every step of the EEP life cycle.

Novel action may also be taken to increase the longevity of products.

Efforts are needed to improve understanding of the role and impact of the informal sectors in these countries and thus explore concrete steps to reduce the exposure of informal workers, including through promotion of best practices and extended producer responsibility.

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