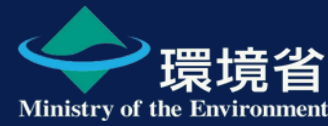


Smart Cities U.S.-JAPAN E-WASTE INITIATIVE



Resource Circularity for Sustainable Supply Chains and Critical Minerals Security

WHAT IS E-WASTE?

According to the United Nations (UN) Institute for Training and Research (UNITAR), electronic waste (“e-waste”) represents the world’s fastest-growing waste stream, amounting to 62 million tons in 2022 and is expected to reach 82 million tons by 2030, a 32 percent increase. E-waste, which includes mobile phones, computers, medical equipment, and household appliances, presents significant risks to human and environmental health through pollution and toxic spillage (e.g., mercury), creates urban waste, and contributes to an estimated \$62 billion of recoverable natural resources and critical minerals that are currently unaccounted for (UNITAR). E-waste is of particular concern in Southeast Asian countries, where it increased by approximately 20 percent in 2024, recording a 4.2 percent higher growth rate than the world average (UNITAR Global e-Waste Monitor 2024).

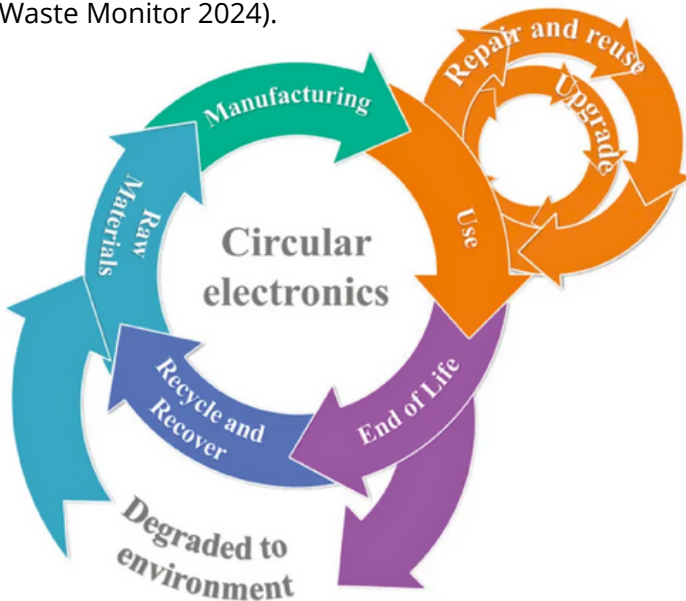
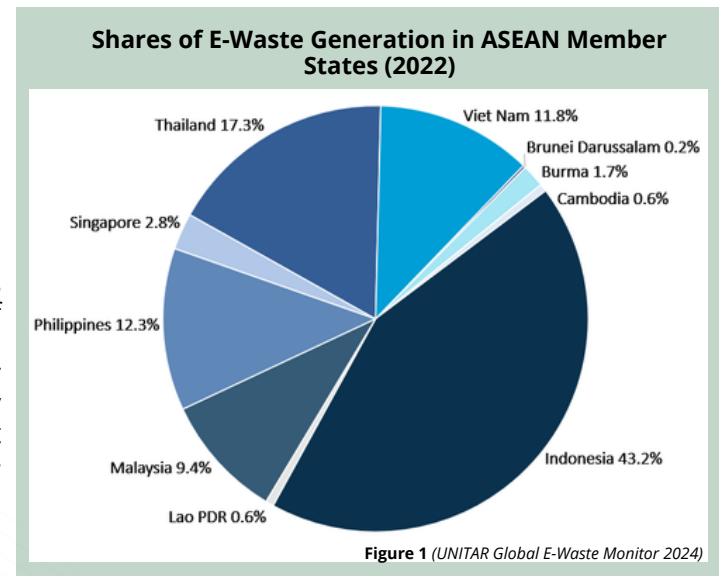


Figure 2: Circular Electronics (IEEE Sensors Council)

Through a circular economic model, waste is minimized by recovering, repairing, reusing, and recycling existing materials and resources as long as possible, extending the life cycle of products. As demonstrated by Figure 2, adopting a circular model for e-recycling can reduce e-waste, lower risks to environmental and human health, and recover upwards of US\$57 billion annually of lost raw materials (e.g., copper, iron, gold, etc.) (UNITAR).

PROGRAM OBJECTIVES:

To help address the challenges posed by e-waste, the U.S. government, through the U.S.-ASEAN Smart Cities Partnership (USASCP), has partnered with Japan’s Ministry of Environment and the Rochester Institute of Technology (RIT) to promote the circularity of small electronics and related materials in order to advance sustainable supply chains in ASEAN countries. This will directly contribute to improving human health, fostering environmentally-sound e-waste recycling, and increasing the recovery and reuse of critical minerals and valuable elements. The program aims to:

- Raise awareness of the social, economic, and environmental impacts of e-waste at the local, national, and regional scales to bolster policy and practice.
- Provide education, training, and seed capital for resource circularity to strengthen local capacities for e-waste and electronics collection, repurposing, and recycling.
- Build multi-sector and private sector collaborations across U.S., Japanese, and ASEAN companies to establish necessary local ecosystems and regional supply chains for sustainable and inclusive e-waste management, job creation, and proper enforcement.