# Electronic Waste

Electronic waste, or **e-waste**, is one of the fastest-growing waste streams worldwide, with around **53.6 million metric tons** generated in 2019, projected to reach **74 million** by 2030. Europe, despite robust regulations, contributes significantly, producing **12 million metric tons** of e-waste annually, with an average of **16.2 kg** per capita, making it the second-largest generator after Asia. From smartphones and laptops to household appliances and batteries, e-waste not only creates environmental challenges due to toxic materials, but it also contributes to the depletion of valuable resources like rare earth metals.

However, e-waste also presents an opportunity to **reimagine the lifecycle** of electronic devices. By addressing the root causes of e-waste, we can foster innovation in product design, recycling systems, and consumer behavior to build a more sustainable future.

## The challenge

The teams are required to design one or more **circular and fully recyclable products** that tackle the growing issue of electronic waste. A particular focus on the materials is required, as they need to be carefully chosen in order for the products to be continuously reused, repurposed, or recycled with zero waste.

How can design contribute to reducing the environmental impact of technologies and promote a more sustainable future for electronic devices? To work on this challenge, the teams could focus on different approaches, leveraging different types of materials or digital technologies.

- **Design for Circularity**:
  Focus on creating electronic products that can be reused, refurbished, or recycled back into the supply chain, minimizing the extraction of new raw materials.

- **Design for Longevity**:
  Develop electronics that are durable, upgradeable, and repairable, ensuring they remain functional for extended periods, reducing the need for frequent replacements.

- **Design for Disassembly**:
  Ensure that electronic products can be easily disassembled to allow for efficient recovery of components and materials, improving recyclability and reducing toxic waste.

- **Design for Modular Upgradability**:
  Create products with interchangeable components that can be upgraded or replaced individually, extending the device's life without requiring full replacement.

- **Design for Resource Efficiency**:
  Minimize the use of rare and hazardous materials in electronics, focusing on easily recyclable, abundant, and less environmentally damaging materials.