LEVERAGING POSTAL NETWORKS FOR CIRCULAR W/EEE MANAGEMENT

The escalating growth of e-waste presents one of the most pressing environmental challenges of our time, as shown by the exacerbating resource depletion and environmental degradation. With the extensive network comprising over 680,000 permanent post offices, hundreds of thousands of vehicles, digital assets, five million postal workers globally, and the broad reach to even the most remote areas of the world, the **global postal network is uniquely positioned** to enhance its role for the achievement of a circular economy.

This project explores the role of postal networks for W/EEE management, by **connecting all stakeholders of the reverse value chain** and developing innovative and sustainable business models.

WHY "REVERSE" VALUE CHAIN?

A "reverse" value chain is a combination of various technical stakeholders and their business models, which facilitates return, repair, and refurbishment of broken or derelict electronic and electrical equipment (EEE) from the point of use. These processes enable extension of EEE lifespan and prevents those EEE from entering the waste management stages without scrutiny. Furthermore, by engaging dismantling and recycling experts, it facilitates extraction of valuable metals and critical raw materials which can be re-introduced into the EEE manufacturing processes, or other purposes such as renewable energy generation.

PROJECT OBJECTIVES

- **Overall**, to identify key stakeholder relations and business models that help form the reverse value chain that facilitates circular management of W/EEE;
- From the **case studies**, to collate practical experiences for setting up the reverse value chain, while accounting for regional and country-specific considerations;
- In the **thought paper**, to understand the legislative and regulatory environments that enable or restrict feasibility, implementation, and scalability of the reverse value chain; identify the business case for integrating the postal sector; and explore the technical and technology enablers and obstacles; and
- To build a sound base for developing **country pilots,** which will follow the research phase of the project.

WE ARE BRINGING TOGETHER...

Economic / market operators	Manufacturers, refurbishment groups, recyclers, informal sector, PROs, e-commerce
Technology providers	Sensors (e.g., RFID tracking), DPP, digital interfaces, and more
Logistics	Postal sector (public, private), 3PL providers, supply chain specialists
Product management, use	Consumers, procurement organisations

WHY SHOULD YOU BE INVOLVED?

Opportunities to connect with other W/EEE stakeholders in your focus area/region

Opportunities to develop and engage in in-country pilots following the research phase

To fill in the logistics, data, and technical gap experienced in your W/EEE management

To join the collective W/EEE network that connects manufacturers, SMEs, technology experts and more
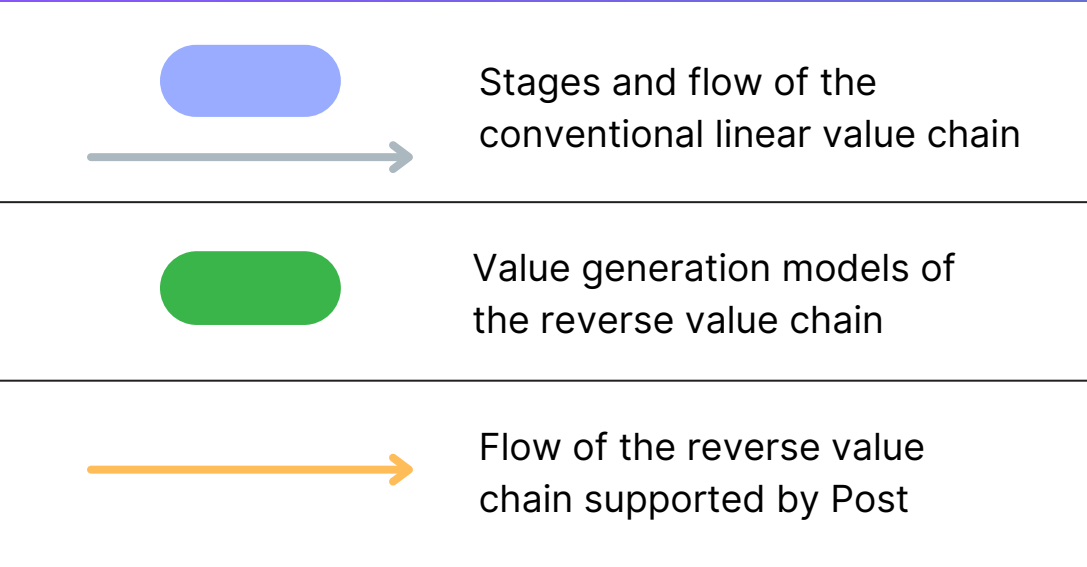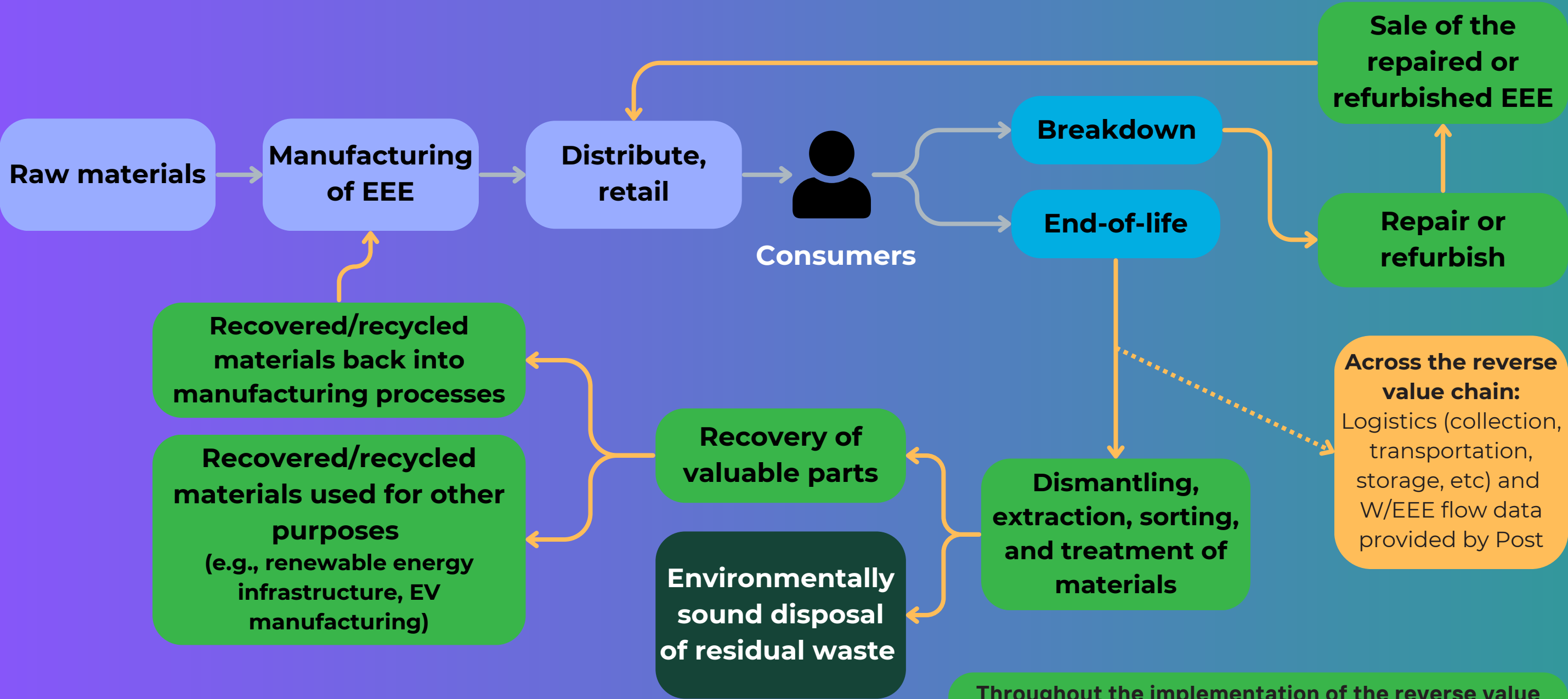
VALUE GENERATION MODELS THAT MAKE UP EEE REVERSE VALUE CHAIN

Raw materials → Manufacturing of EEE → Distribute, retail → Consumers

Consumers → Breakdown

Consumers → End-of-life

Breakdown → Sale of the repaired or refurbished EEE

Repair or refurbish → Sale of the repaired or refurbished EEE

End-of-life → Repair or refurbish

Recovered/recycled materials back into manufacturing processes → Manufacturing of EEE

Recovered/recycled materials used for other purposes (e.g., renewable energy infrastructure, EV manufacturing)

Recovery of valuable parts

Dismantling, extraction, sorting, and treatment of materials

Environmentally sound disposal of residual waste

Across the reverse value chain: Logistics (collection, transportation, storage, etc) and W/EEE flow data provided by Post

Throughout the implementation of the reverse value chain...
- To use data analytics to understand market trends, consumer behaviour, and optimize operations;
- To increase consumer awareness about the benefits of purchasing refurbished products and following proper e-waste disposal;
- To offer consumers incentives to return used EEE for refurbishment/repair/resale/recycle;
- To create online platforms where consumers/businesses can buy and sell used EEE; and
- To implement certification schemes to guarantee the quality and reliability of refurbished products.

Legend:
- Stages and flow of the conventional linear value chain
- Value generation models of the reverse value chain
- Flow of the reverse value chain supported by Post

TIMELINE OF THE PROJECT

- **September 2024:** Beginning of the Phase 1 (research) of the project
- **October 2024 - March 2025:** Literature review and stakeholder interviews / consultations
- **February - March 2025** Drafting of the case studies and thought paper
- **March - April 2025:** Completion of the first draft of the thought paper, peer review
- **May 2025 ~** Launch of the thought paper, continuation into the Phase II (country pilots) of the project

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