

Circular Pathways for High-Value Plastics from End-of-Life Vehicles (ELV) in China and Electronics Waste (E-waste) in India

The Context

The Recycling of high-value plastics from end-of-life vehicles and electronic waste remains an over-looked aspect in the burgeoning Asian growth markets with adverse impacts on both humans and the environment, the industry holds immense untapped potential.

End-of-life vehicles: Approximately 7-8% of discarded automotive parts constitute plastic, and with China scrapping a staggering 8 million vehicles in 2020 alone, the magnitude of this market is evident. The Indian end-of-life vehicle market, already among the world's largest, is projected to grow by 11.3% annually from 2020 to 2027.

Electronic waste: Plastic accounts for an estimated 20% of electronic waste, contributing to a significant environmental challenge. China generated over 20 million tonnes of e-waste in 2020, dwarfing India's 3.23 million tonnes in 2019. The electric industry in India is poised for substantial growth at an annual rate of 16.6%, leading to a continuous surge in electronic waste. Despite this increase, only 17.4% of e-waste in Asia was formally collected and recycled, according to the Global E-waste Monitor 2020, emphasizing the urgent need for improved e-waste management systems.

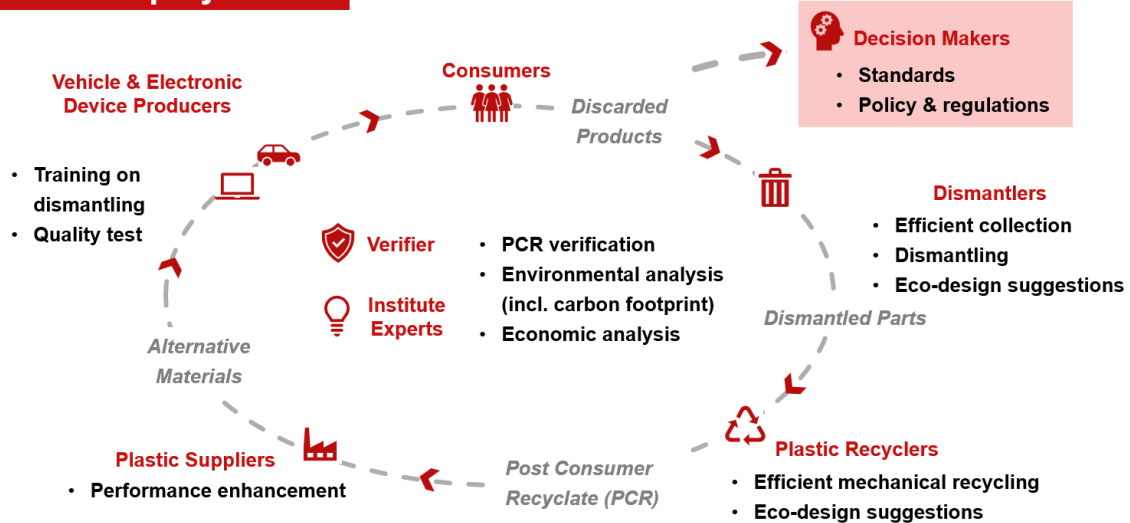
This inadequacy stems from a lack of collaboration between political and economic stakeholders in the value chain, compounded by an uncertain and unprofitable business environment resulting from unclear framework conditions. This ambiguity leads to inappropriate disposal practices, posing significant cross-border environmental, climate, and health risks.

This project aims to address these challenges by developing integrated solutions, including pilot and capacity building measures, joint service provision in the country portfolio involving Chinese, Indian, and German private sector participants, and synergistic approach encompassing both the automotive and electrical industries.

Project Name	Circular Pathways for High-Value Plastics from End-of-Life Vehicle/Electronics in China and India
Funding	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH Private corporates provide in-kind contributions
Partners	China: Shanghai Ausell Material Technology Co., Ltd. Covestro (Shanghai) Investment Co., Ltd. GEM (Wuhan) Urban Mining Industrial Group Co., Ltd. NIO Co., Ltd. TÜV Rheinland (Guangdong) Ltd. Volkswagen (CHINA) Investment Co., Ltd. India: Covestro India Private Limited Karo Sambhav Private Limited (India)
Budget	1.4 Million EUR
Duration	August 2024 -January 2026

Our Approach

Closed-loop Systems



The primary focus of the project is to **enhance the collection and recycling of plastics from End-of-Life vehicles (ELV) and Electronic Waste (E-waste)** by three interlinked fields of activity:

- 1) Conducting a socio-economic and ecological analysis of high-quality plastics recycling from designated waste streams in China and India.
- 2) Piloting with cutting-edge technologies and environmentally sustainable design concepts to promote **closed-loop recycling** of high-value plastics from end-of-life vehicles in China and electronic waste in India.
- 3) Executing initiatives for facilitating knowledge exchange, forging partnerships, and enhancing capacity building among regional industry representatives in the electrical and automotive sectors.

Contribution to 2030 Agenda



Published by:
Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Registered offices
Bonn and Eschborn, Germany

Address
Postcode and town, country
T +49 61 96 79-0
F +49 61 96 79-11 15
E info@giz.de
I www.giz.de/en

2025

Responsible:
Ms. Jingyue HOU (Project Manager)
E: jingyue.hou@giz.de
T +86 159 012 277 84
Dr. Reva Prakash (Deputy Project Manager)
E: reva.prakash@giz.de

Implementation Team:
Environment and Circular Economy, Sustainable Transition, GIZ China
Climate Change and Circular Economy, GIZ India

Photo sources:
Cover image: Shutterstock / 3rdtimeluckystudio
Illustration: GIZ