

# Treatment solutions and innovative financing mechanisms

for problematic e-waste fractions

<b>Period</b>	07.2020–11.2021
<b>Countries</b>	The Balkans, Latin America, East and West Africa
<b>Project partners</b>	Landbell Group; E-Waste Working Group of the PREVENT Waste Alliance, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

## Finding solutions for problematic e-waste fractions

Several so-called problematic e-waste fractions (e.g. e-waste plastics, lithium-ion batteries, fluorescent lamps, refrigerator foams) represent a very high environmental hazard but are not treated in low- and middle-income countries due to

- a lack of local facilities and regulations imposing sound treatment
- continuous treatment costs and the need for high investments
- a lack of local markets for the recyclates or the volumes available

## The project

This PREVENT project aimed at finding both treatment and financing solutions for fractions of e-waste for which recyclers in low- and middle-income countries have no local solutions, so-called problematic e-waste fractions. The project team developed innovative financing mechanisms and treatment solutions for PUR Foams, lithium-ion batteries, e-waste plastics and mixed waste shipments together with recyclers. Different finance models were tested in four pilot projects in the Balkans, Latin America, as well as East and West Africa. Throughout the project, recyclers received

support in the form of technical advice and matchmaking with state-of-art recyclers operating in industrialised countries. Further, potential local markets for certain fragments were identified in the countries.

## Project overview per region and fraction of e-waste

<b>Region</b>	<b>Balkans</b>
<b>Fraction</b>	<b>PUR foams</b>
<b>Project description</b>	Shipment of PUR foams to a certified recycling facility in Greece
<b>Potential finance partner</b>	Tradewater or equivalent
<b>Finance Model</b>	Carbon credits

<b>Region</b>	<b>South America (Brazil)</b>
<b>Fraction</b>	<b>Plastics from e-waste</b>
<b>Project description</b>	Creation of consolidation & sorting center(s) for plastics from smaller recyclers to offer offtakers expected volume and quality levels. Disposal of contaminated fractions funded with revenue from offtakers.
<b>Potential finance partner</b>	Circular Brain & BVRio
<b>Finance Model</b>	Market place for trading of valuable fractions (Circular Brain) + Fundraising for consolidation centre (Circular Action Hub)

<b>Region</b>	<b>East Africa</b>
<b>Fraction</b>	<b>Li-Ion batteries</b>
<b>Project description</b>	Shipment of complete batteries to Asia for recycling or pre-treatment locally and shipment of powder only. Solution could also benefit neighbouring countries.
<b>Potential finance partner</b>	Producer (tbc) and/or BVRio
<b>Finance Model</b>	Fundraising (Circular Action Hub)

<b>Region</b>	<b>West Africa</b>
<b>Fraction</b>	<b>Mixed waste</b>
<b>Project description</b>	Shipment of all e-waste fractions collected by the recycler to Europe
<b>Potential finance partner</b>	n/a
<b>Finance Model</b>	Cross-financing

## Achievements

1. Elaboration of a functional model for financing of PUR foam recycling
2. Development of sorting guidelines to identify portable batteries and Lithium-Ion Batteries. Using these guidelines, the recycler selected for the project sorted about 60 tons of LIB batteries, more than 90 % of which were based on LiFePO\* technology and did not contain any cobalt or nickel.
3. A LiFePo refurbishing solution was proposed.
4. The project found a new offtaker from the EEE industry capable of consuming regranulates from WEEE recyclers.
5. 20 recyclers have received support and guidance. Trainings on batteries and e-waste plastics were conducted in English, French and Portuguese.
6. Publication of an implementation report and an overview of finance models for PUR Foams, lithium-ion batteries, e-waste plastics and mixed waste shipments

## PREVENT Waste Alliance

The PREVENT Waste Alliance serves as an international 'think and do tank' for circular economy practitioners. As a platform for knowledge exchange and international cooperation, it brings together organisations from the private sector, academia, civil society and public institutions. PREVENT's mission is to advance the circular economy in low- and middle-income countries by minimising waste, eliminating pollutants, and maximising the reuse of resources in the economy worldwide.

The PREVENT Waste Alliance was launched in 2019 by the German Federal Ministry for Economic Cooperation and Development.



### Imprint

#### Published by

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH  
 PREVENT Waste Alliance  
 Friedrich-Ebert-Allee 32 + 36  
 53113 Bonn  
 Germany

T +49 61 96 79-0  
 F +49 61 96 79-11 15

E [info@giz.de](mailto:info@giz.de)  
[contact@prevent-waste.net](mailto:contact@prevent-waste.net) | [www.giz.de](http://www.giz.de)

June 2023

\* LiFePo: Lithium Iron Phosphate batteries

#### On behalf of

German Federal Ministry for Economic Cooperation and Development (BMZ)  
 Division 414 Urban Development, Mobility, Circular Economy  
 Bonn, Germany

This project is funded by the PREVENT Waste Alliance, an initiative of the German Federal Government.

More information: [www.prevent-waste.net/en/](http://www.prevent-waste.net/en/)