PLAST2bCLEANED

INTRODUCTION TO THE PROJECT

This Project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement N. 821087

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Esther van den Beuken

PLAST2bCLEANED's Project Coordinator

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ABOUT THE PROJECT

The overall aim of PLAST2bCLEANED is to develop **a human and environmentally safe recycling process for Waste Electrical and Electronic Equipment (WEEE) plastics** in a technically feasible and economically viable manner.

Key technologies developed within the project are:

- Improved sorting of HIPS and ABS
- Dissolution of Waste Electrical and Electronic Equipment (WEEE) plastics in superheated solvents;
- Separation of additives to concentrate BFR and ATO fractions for recycling;
- Energy efficient recovery of solvent and of polymer.

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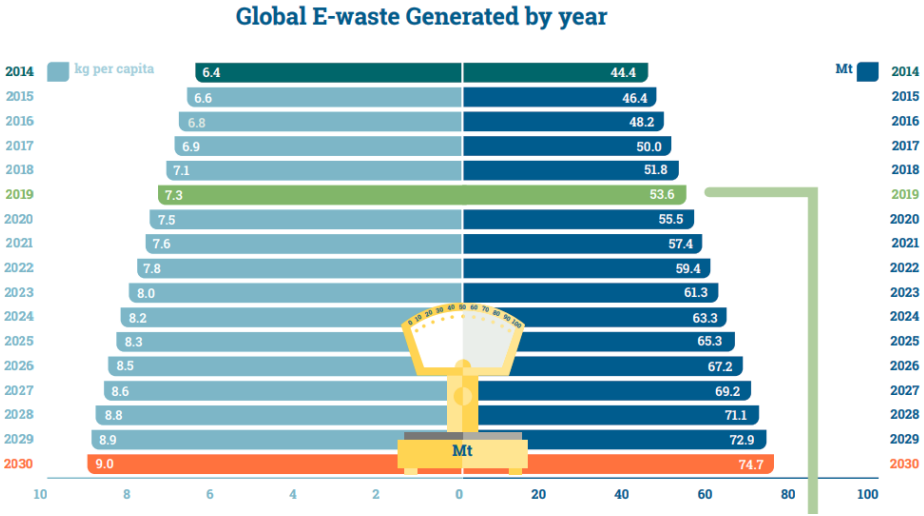
MOTIVATION – WHY LOOK INTO WEEE PLASTIC WASTE STREAMS?

The amount of Waste from Electrical and Electronic Equipment (WEEE or E-waste) is growing quickly



[1] Forti V., Baldé C.P., Kuehr R., Bel G. The Global E-waste Monitor 2020: Quantities, flows and the circular economy potential. United Nations University (UNU)/United Nations Institute for Training and Research (UNITAR) – co-hosted SCYCLE Programme, International Telecommunication Union (ITU) & International Solid Waste Association (ISWA), Bonn/Geneva/Rotterdam.

- ✓ The way in which we produce, consume, and dispose of EEE is not sustainable
- ✓ Specially, some plastic in E-waste cannot even be recycled due to the presence of legacy additives, e. g. certain bromine flame retardants
- ✓ These plastic waste streams with legacy additives need to be
  - collected,
  - separated and
  - processed to remove legacy additives

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OBJECTIVES

1 Development of a mechanical presorting technology

2 Closing 3 loops using dissolution under superheated conditions by separation of :
(1) the polymer
(2) the bromine
(3) the antimony trioxide

3 Process integration and scale-up

4 Performance testing of process and products

5 System optimizing for sustainability and economic viability

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CONSORTIUM

PLAST2bCLEANED

Industry/SME

Recycling Company — Coolrec (Part of Renewi)

Engineering company — JUCHHEIM Laborgeräte GmbH

Polymer

Plastics producer — ELIX POLYMERS (A member of Sinochem International)

End user — Electrolux

Bromine fraction

Bromine recovery — ICL Europe

Chemical industry

Antimony fraction

Antimony recovery — Campine

Chemical industry

Research Institutes

Coordinator — TNO

Fraunhofer ICT

Gaiker — MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

Dissemination and exploitation — Sustainable INNOVATIONS

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