SUCCESS STORY

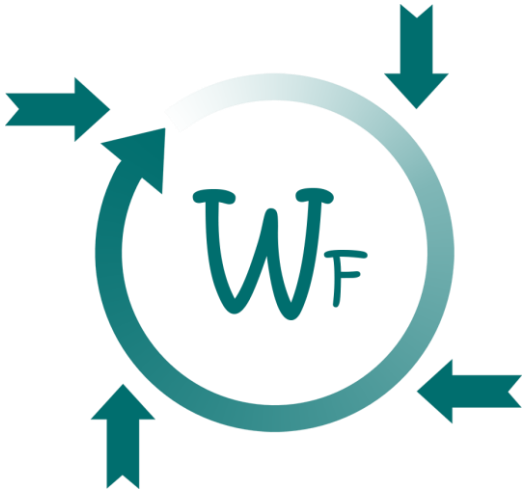
FFG
Promoting Innovation.

ReWaste F
Recycling and Recovery of Waste for Future

Programme: COMET – Competence Centers for Excellent Technologies

Programme line: COMET-Project

Type of project: ReWaste F, 04/21 – 03/25, multi-firm



"WASTE SCANNER" - PARTICLE AND SENSOR DATA-BASED WASTE AND PROCESS CHARACTERIZATION

THE DIVERSITY AND FLUCTUATING PROPERTIES OF WASTE REQUIRE AUTONOMOUSLY ADAPTING TREATMENT PLANTS. THE WASTE SCANNER PROVIDES THE NECESSARY DATA FOR MORE EFFECTIVE AND EFFICIENT WASTE TREATMENT.

Waste is diverse. Its properties are constantly fluctuating, from waste bin to waste bin, from collection vehicle to collection vehicle. On one hand, waste treatment plants do not process quality-assured, clearly specified raw materials, but waste as it is generated - on the other hand they process some of it into quality-assured concentrates, for example for use in recycling plants or as fuel in cement plants.

For this, to work effectively and efficiently, the plants must develop to be able to characterize waste at the particle level, react autonomously to it in real time, and detect produced qualities and any deviations instantly.

For real-time characterization, a prototype of a "waste scanner" was developed in the ReWaste F project. This analyzes waste and its behavior in the plant in real-time. Depending on the task, different sensors are used in parallel: RGB cameras, near-infrared sensors, RFID detectors, volume flow sensors. In addition, a manufacturer-independent digital platform is being created for the administration and internal as well as cross-plant and cross-organizational utilization of the data.

Federal Ministry
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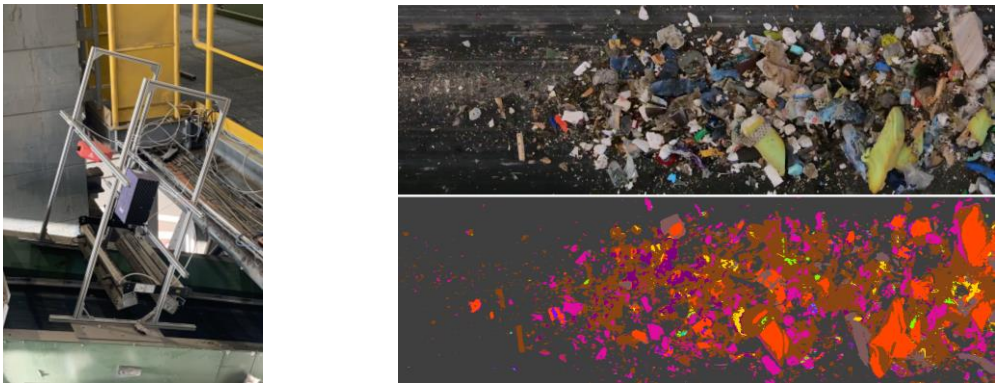
Impact and effects

The Waste Scanner allows real-time characterization of material qualities at any position in the plant. Based on this, plants will be able to respond to waste properties to extract more recyclables of higher quality at reduced operating costs. For large-scale use, machine-learning models for indirect measurements will also emerge to reduce the number of costly sensors required. In summary, the Waste Scanner contributes to a more effective and ecologically and economically resource-saving waste treatment.



Copyright ReWaste F. Left: installed multi-sensor combination for recording spectral, video, and volumetric flow data in a waste processing plant. Right: video image (top) and analyzed material classes (bottom) of mixed commercial waste.

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- FH Joanneum, AUT
- Green Tech Cluster Styria GmbH, AUT
- IFE Aufbereitungstechnik GmbH, AUT
- IUT Ingenieurgemeinschaft Innovative Umwelttechnik GmbH, AUT
- KNOW-CENTER GmbH, AUT
- Komptech GmbH, AUT
- Lafarge Zementwerke GmbH, AUT
- Mayer Recycling GmbH, AUT
- Müllex-Umwelt-Säuberungs-GmbH, AUT
- RECENDT GmbH, AUT
- RecycleMe GmbH, AUT
- REDWAVE - a division of BT-Wolfgang Binder GmbH, AUT
- Saubermacher Dienstleistungs AG, AUT
- SIEMENS AG Austria, AUT
- TÜV SÜD Landesgesellschaft Österreich GmbH, AUT

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