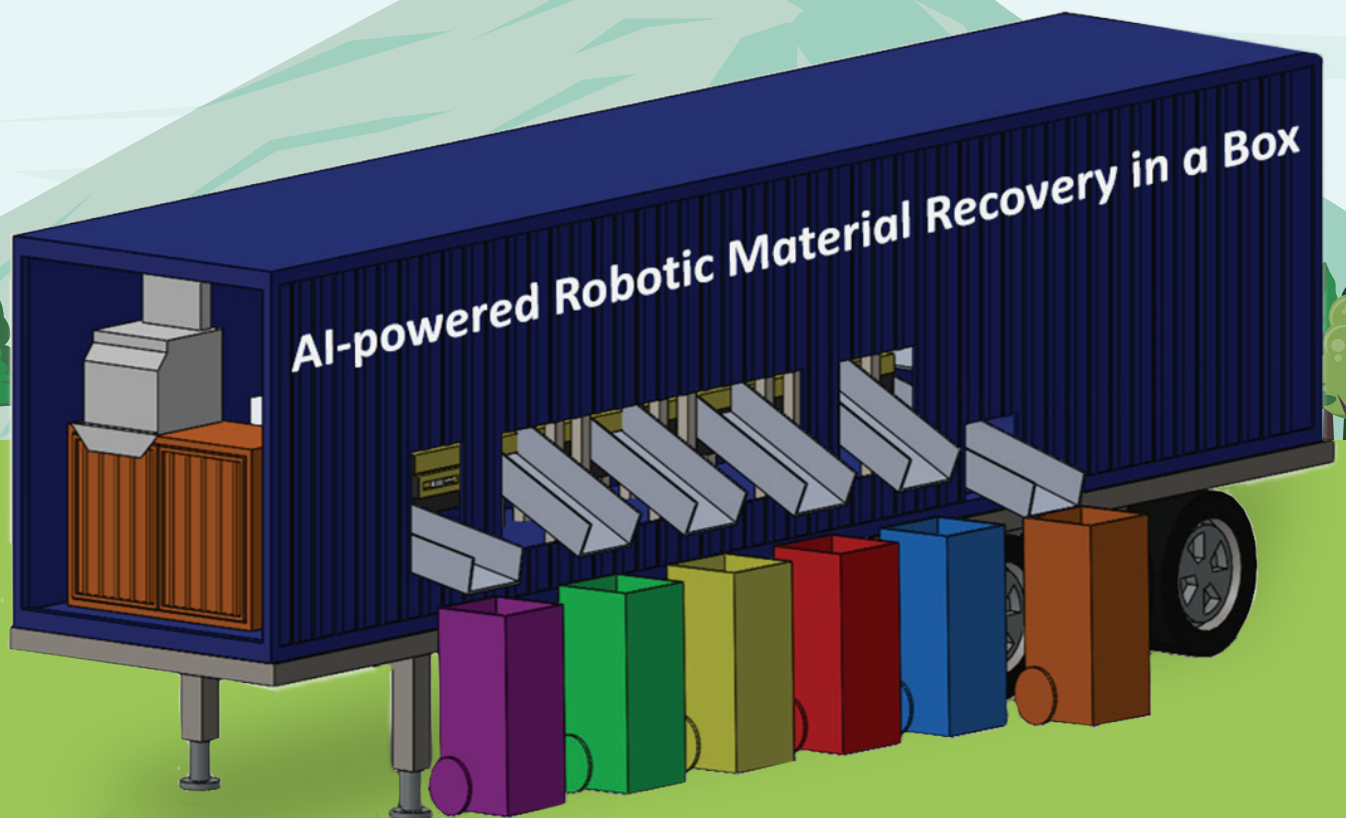


RECYCLING starts from the Ionian Islands Region!!



The recovery of recyclable materials is a key element of the circular economy and the EU Green Deal. The recovery of materials is usually carried out by hand sorting in large-scale Material Recovery Facilities (MRFs) located near urban areas.

The FoDSA of the Ionian Islands in collaboration with the Hellenic Recycling Society (EEAA), the Technology and Research Foundation and 7 other partners from Greece and abroad submitted a proposal within the framework of the competitive European Horizon program for the construction and operation of the first portable, fully robotic KDAY (portable , robotic MRF -prMRF) that will utilize Renewable Energy Sources oriented to the recovery of small-scale materials. The said project under the distinctive title Reclaim was approved, financed and its implementation has begun.

THE RECLAIM CONSORTIUM



The project leverages robotic technologies, artificial intelligence and data analysis to facilitate material recovery following a decentralized approach.

RECLAIM adopts a modular robot system using multiple grabbers for material recovery, based on low-cost Robotic Recycling Workers (RoReWos). . An Artificial Intelligence (AI) unit combines visual and infrared imaging of recyclable waste to identify and categorize recyclables. The result of the visual recognition is used by a RoReWo team that will achieve an efficient and accurate classification of the materials.

Through the program we are taking a citizen science approach that will increase social sensitivity within the framework of the European Green Deal. This will be achieved through the creation of a new recycling game that will allow and encourage citizens to participate in the research and development activities of the project by providing annotations on the waste images that will be used to train the object recognition Neural Networks.

Three different scenarios will confirm the effectiveness of the proposed system and its applicability in a wide range of locations that face challenges regarding the recovery of recyclable materials.

SCENARIO 01

Recovery of materials from mixed streams of recyclable materials.

SCENARIO 02

Cleaning streams that are already separated (pre-selected) by citizens.

SCENARIO 03

Transport and direct recovery of materials.

The use of prMRFs is expected to make a significant contribution to making Europe fertile, climate neutral, sustainable and globally competitive.