

ISLOPOL

Island Loop for Polystyrene Circularity

Building a circular EPS value chain in Madeira

ISLOPOL connects waste management, AI-based material identification, digital traceability and local manufacturing reuse to transform suitable EPS from a difficult waste stream into a local secondary raw material. The project links ARM, Logimade, Esferolight and ARDITI within the wider CIRCULOOS ecosystem.



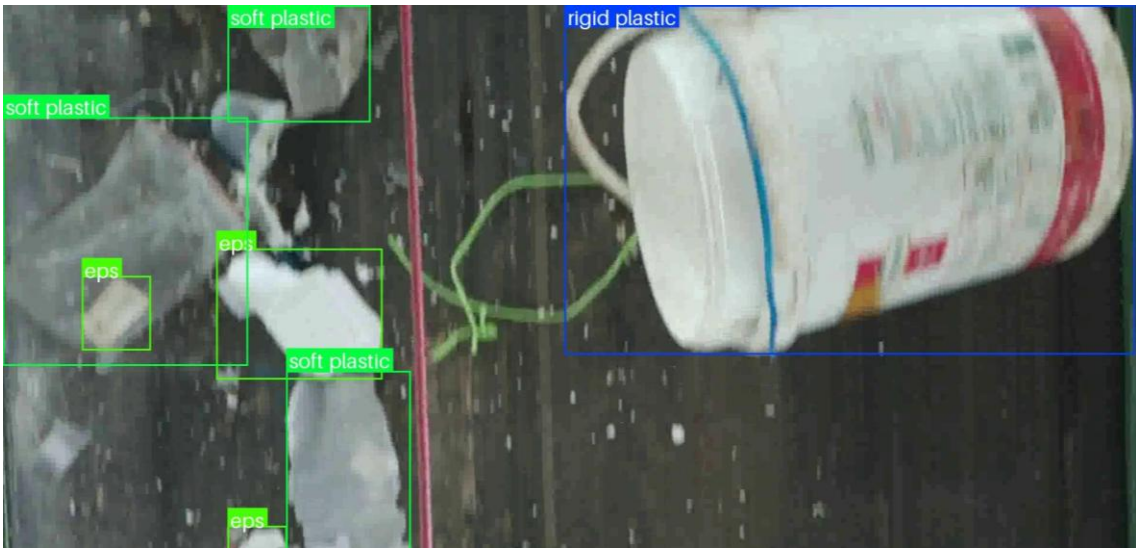
ARM sorting line / industrial context

How the circular loop works



Implementation by M10

By the tenth month, ISLOPOL has moved from project concept into an operational industrial deployment. The vision system has been installed on ARM’s sorting line, production AI runs locally on Raspberry Pi 5, and the data infrastructure is now supporting authenticated partner interfaces, dashboards and synchronization with the CIRCULOOS Data Platform.



Annotated image example used in the EPS detection pipeline



Recovered EPS, shredding, lightweight concrete

Digital backbone

The ISLOPOL Data Space links collection, classification, transport, inspection and production data through NGSI-LD/FIWARE components. By M10, partner interfaces, dashboards and synchronization with the CIRCULOOS Data Platform are operational.



Why it matters for island circularity

In island regions, low-density materials such as EPS are particularly difficult to manage: they occupy significant transport volume while carrying limited material mass. ISLOPOL responds with a staged circular approach focused on the cleaner EPS fractions that can realistically be retained and reused locally.

Keep EPS local — retain suitable material in Madeira instead of treating it only as waste.

Reduce environmental burden — support shorter treatment routes and avoid unnecessary export or disposal of recoverable EPS.

Increase recycled material use — enable recycled EPS uptake in suitable local manufacturing processes.

~8.81 t/year

current blue-stream EPS opportunity baseline

2.5 m / ~4 s

typical operator warning distance and advance time

2,115 / 5,656

images / annotated EPS instances