



## PlastiCity

### Resourcing plastics from the city

#### WP 4 – Output 7.2 A mobile unit – Advanced logistics

##### Mobile Unit – Characterization, testing and demonstration

Date of finalisation of deliverable	30/04/2020 – <i>delayed until 12/2020</i>
Partner responsible for finalising deliverable	PP11
Partners that contributed to the deliverable	PP11

### General description



Figure 1: Mobile unit photo – electronic vehicle

During the course of the project, a mobile plastic recycling lab, short mobile unit, was developed and is depicted on Figure 1. The mobile unit will be used to characterize, and processes collected plastic waste material during the project PlastiCity. The mobile unit consists of 2 parts the physical lab in two 40ft shipping containers (O7.1) that resulted out of Investment 1 (mobile unit – Characterisation, testing and demonstration) that will be reported on in a separate document and the second part (O7.2) resulting out of investment 2 (Mobile unit – Advanced logistics) that will be reported on in this document.



This Output 7.2 report will explain the planning processes as well as the final state of the mobile unit part with focus on logistics. The logistic unit includes following infrastructure:

- Electric vehicle for collection of plastic waste
- Data management system based on barcodes
- Compactor for densification of plastic waste
- Containers

## Electric vehicle for collection of plastic waste & Data management system based on barcodes

During the planning phase several options for equipment were reviewed, see Figure 2. The final decision was made for a Volkswagen e-vehicle, see Figure 1. This vehicle is equipped with a barcode reading and writing system (see Figure 3) that has already been used during first waste collection rounds in Belgium.



Figure 2: Investigation of different options for an electronic vehicle

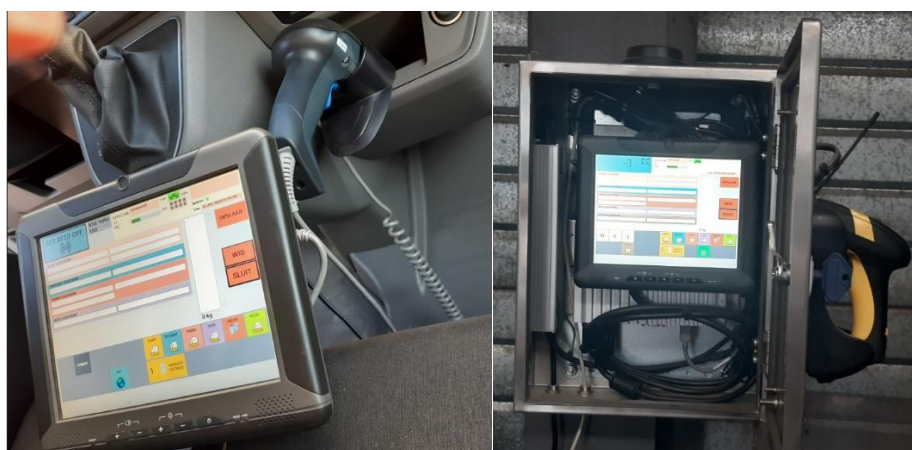


Figure 3: Data management system based on barcodes

For the first collection rounds a sorting guide was developed that distinguishes between 5 plastic waste fractions. With the help of the barcodes the link is made to a database that allows tracing the plastic waste in different coloured bags back to the waste generator. Impression can be found in Figure 4.



Figure 4: Barcode system used for collection round



Figure 5: Impressions from the collection rounds, deployment of new bags and collection of filled back with transparent film

## Compactor for densification of plastic waste

Moreover, a compactor for densification of EPS has been purchased. The equipment is fully operational and was used to compact the material collected during the first collection rounds in Belgium. It has the ability to compact EPS with a factor of 50. First impression of the use of the compactor can be seen in Figure 6.





Figure 6: EPS compactor in operation

## Containers

As last part of this Output 7.2 Mobile unit advance logistics waste containers is available that are used in the project areas for storage of plastic waste. As an example, on container can be seen on Figure 7.



Figure 7: Container as part of mobile unit for storage of waste plastics