Maximizing recycling in remote areas using the PAVEtheWAySTE system

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LIFE PAVEtheWAySTE project

Demonstrating resource efficiency through innovative, integrated waste recycling schemes for remote areas

**Overall Scope:**

This project aims to facilitate the implementation of the Waste Framework Directive in remote areas, by enabling local and regional authorities to improve their municipal waste recycling performance and thus pave the way to high resource efficiency.
Implementation areas

- Municipality of Naxos & Small Cyclades (Koufonisia, Donousa, Schinousa, Iraklia)
- Municipality of Ancient Olympia (Ancient Olympia, Platanos, Pelopio)
- Castilla-León

Replication study

Project Partners

1. Coordinating beneficiary: Municipality of Naxos and Small Cyclades (NAXOS)

Associated beneficiaries:
2. CARTIF Institute (CARTIF)
3. National Technical University of Athens (NTUA)
4. Municipality of Ancient Olympia (OLYMPIA)

Duration: 01/09/2015 - 30/06/2020

Budget

Project budget: 1,758,267 €
EC Funding: 1,054,960 € (60%)
1. Source separation in 5 main streams

MSW production  MSW source separation

- Paper/Paperboard
- Plastics
- Glass
- Metals
- Specific waste streams

Drop off

Green Kiosk
2. Further separation in substreams

Green Kiosk

1 employee

Participants

ID card for participants Rewarding System

Printed Paper
Paperboard
Mixed paper
PET non-coloured
PET coloured
HDPE
LDPE
PP/PS
Glass non-coloured
Glass coloured
Ferrous metals
Non-ferrous metals
Waste oils
WEEE
Batteries
Lamps
MSW Management scheme (3)

3. Temporal storage

4. Transportation to the market

Detailed separation of more than 12 streams

Max 1,90 m

Max 1,00 x 1,20 m
Photos of the installed recycling system in the target areas

Municipality of Ancient Olympia

Municipality of Naxos & Small Cyclades
Innovative characteristics & main advantages

Innovative characteristics…

• Essentially anthropocentric design
• In aesthetic harmony with its surroundings
• High level of portability
• High level of operational flexibility

Main advantages…

• Supplementary satellite system to further support integrated waste management
• Direct communication with target audiences through the daily presence of an operator
• Detailed sorting in more than 12 sub-streams
• High levels of purity thus increasing the materials value
The Green Kiosk consists of the following areas:

- Reception area of 5 pre-sorted waste streams (plastic, glass, metal, paper & special waste streams)
- Fine separation area of pre-sorted waste into subcategories (PET, HDPE, LDPE, Aluminium, paperboard, etc.) by the system
- Processing of fine separated materials (compression / crushing, baling)
- Storage area of baled materials
System space arrangement (1/2)

Rewarding system

Reception area
System space arrangement (2/2)
Compression system

Sorting area

Storage of compressed materials
Reward points are calculated by a specially designed **algorithm** based on different parameters such as the quantity and quality of recyclables.

- A personalized **ID Card** for collecting rewarding points
A Cloud platform for remote monitoring of the recycling systems:

- Quantitative data
- Qualitative date
- Visiting frequency
The system in numbers...

Collected recyclables (tn) in the 4 pilot areas of Small Cyclades

<table>
<thead>
<tr>
<th>Area</th>
<th>Recyclables (tn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donousa</td>
<td>694.57</td>
</tr>
<tr>
<td>Schinoussa</td>
<td>1758.42</td>
</tr>
<tr>
<td>Koufonisia</td>
<td>7124.15</td>
</tr>
<tr>
<td>Iraklia</td>
<td>1337.05</td>
</tr>
<tr>
<td>Total</td>
<td>10914.19</td>
</tr>
</tbody>
</table>

Percentage contribution of materials for the 4 pilot areas of Small Cyclades

- Paperboard: 6.92%
- Paper: 27.40%
- Plastic: 32.15%
- Glass: 7.25%
- Metal: 26.27%
4 Green Kiosks fully operating in Small Cyclades

- More than 191 households & businesses informed
- 11 tn of recyclable s collected
- 100% purity achieved
- 2.2% reduction of GHG emitted
Thank you for your attention

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