Intermodality as a tool for the EoL products recycling.

Proposed Project Size: Below 8 M€ of total costs

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Overview of the Topic (1)

- The term “Reverse Logistics” is commonly intended as the design and the implementation of a system of infrastructures and services for the recovering and the management of products at the conclusion of their period of usefulness.
- In E.U. the transport of wastes (including Waste of Electrical and Electronic Equipments - WEEE) is regulated by special laws and many European countries require, farther 300 Km., to utilise the railway transport.
- The low value of the materials achievable by the WEEE sorting imposes to squeeze the collecting and distribution costs in order to make the system economically and environmentally sustainable. The only way to attain this goal is to utilise on a large scale the intermodal/multimodal transport.
- Otherwise the logistic phases supporting the collection, shifting and sorting of the EoL products are several and substantially unlike. Furthermore the intermodal transport needs to have sophisticated tools, able to coordinate the whole flow.

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Overview of the Topic (2)

- The recovery field is still very young and is characterized by the spontaneous births of unspecialized collecting and treatment structures, implemented by private and public companies, aiming to resolve peculiar problems of one zone or production area.
- It is however foreseeable, but also desirable, that this phenomenon will assume gradually a greater importance and there will be many structures that, in the attempt to squeeze the costs through the process automation, will become specialized on the treatment of one particular category of WEEE, or even on a single type of product (washing machines, refrigerators, computers, mobile phones, etc.).
- In this hypothesis the catchment area of these specialized structures would be extended to all the European territory, becoming unavoidable the long distance transport for the equipments assigned to them.
- It is already well known that, over 400 km., the use of the intermodal /multimodal transport enables a considerable savings in comparison with the "all tyre" modality.

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Overview of the Topic (3)

- **An Italian example of saving through the intermodal transport (source Omnialogistica):**

- Distance Rome - Reggio Calabria - Km. 500:
- Transport "all tyre" 1 semitrailer m. 13,60: **Euro 900,00**
- In alternative: intermodal transport tyre-railroad:
- "Tyre" transport from the origin to the
- intermodal centre:distance max. 100 km.: Euro 100,00
- Transhipment charges Euro 30,00
- Railway transport from intermodal centre to the plant:
- wagon 4 axis (capability more than 2 semitrailers):
- Euro 650,00/2: Euro 325,00
- Saving for each semitrailer **Euro 445,00**

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Description of Activities

- An initial analysis phase of the European scenario, under the point of view of the laws regulating the waste disposal.
- To analyze and check the several systems of waste collecting, used in the European countries.
- Analysis of current, and estimate of forecasted flows for each waste category (prediction and projection) and collection of the respective infrastructural needs.
- To draw up a detailed mapping of the sites currently dedicated to the waste recycling and the identification of the main logistics companies operating in the field.

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Expected Results

The whole of these collected data will enable to:

- Formulate sustainable working hypothesis of an organizational model on fractal scale.
- Design an integrated European system of intermodal logistics aimed to organize the transfer for the WEEE, as well as for other waste categories, from the origin to the collecting/sorting platforms, and, the achieved materials, from such platforms to the processing factories.
- A settlement of the guidelines to manage the several phases of the logistics cycle and a global evaluation of the costs of the proposed system will complete the expected results.

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