

LIFE ECOPULPLAST

Project Number: LIFE14 ENV/IT/001050 – LIFE ECO-PULPLAST

D13 Business model, recommendations and transferability report



Project Number: LIFE14 ENV/IT/001050 – LIFE ECO-PULPLAST

BUSINESS MODEL, RECOMMENDATIONS AND TRANSFERABILITY REPORT

Document Control Record

LIFE ECO-PULPLAST Doc. Type/ No. / Title	Deliverable / D13 / Business model, recommendations and transferability report
Action	C4: Business model development, social recommendations and transferability evaluation
Date/ Version	31/08/2018 / v. 1.0
Document responsible	ZERO WASTE EUROPE
Authors	Rossano Ercolini (ZERO WASTE), Lorna Vatta (SELENE)
Contributions	All partners

The sole responsibility for the content of this document lies with the authors. It reflects only the author's view does not necessarily reflect the opinion of the European Union. The Agency/Commission is not responsible for any use that may be made of the information it contains.

- Current Situation Analysis
- Development and Design
- Conversion
- Commercialisation

Current Situation Analysis

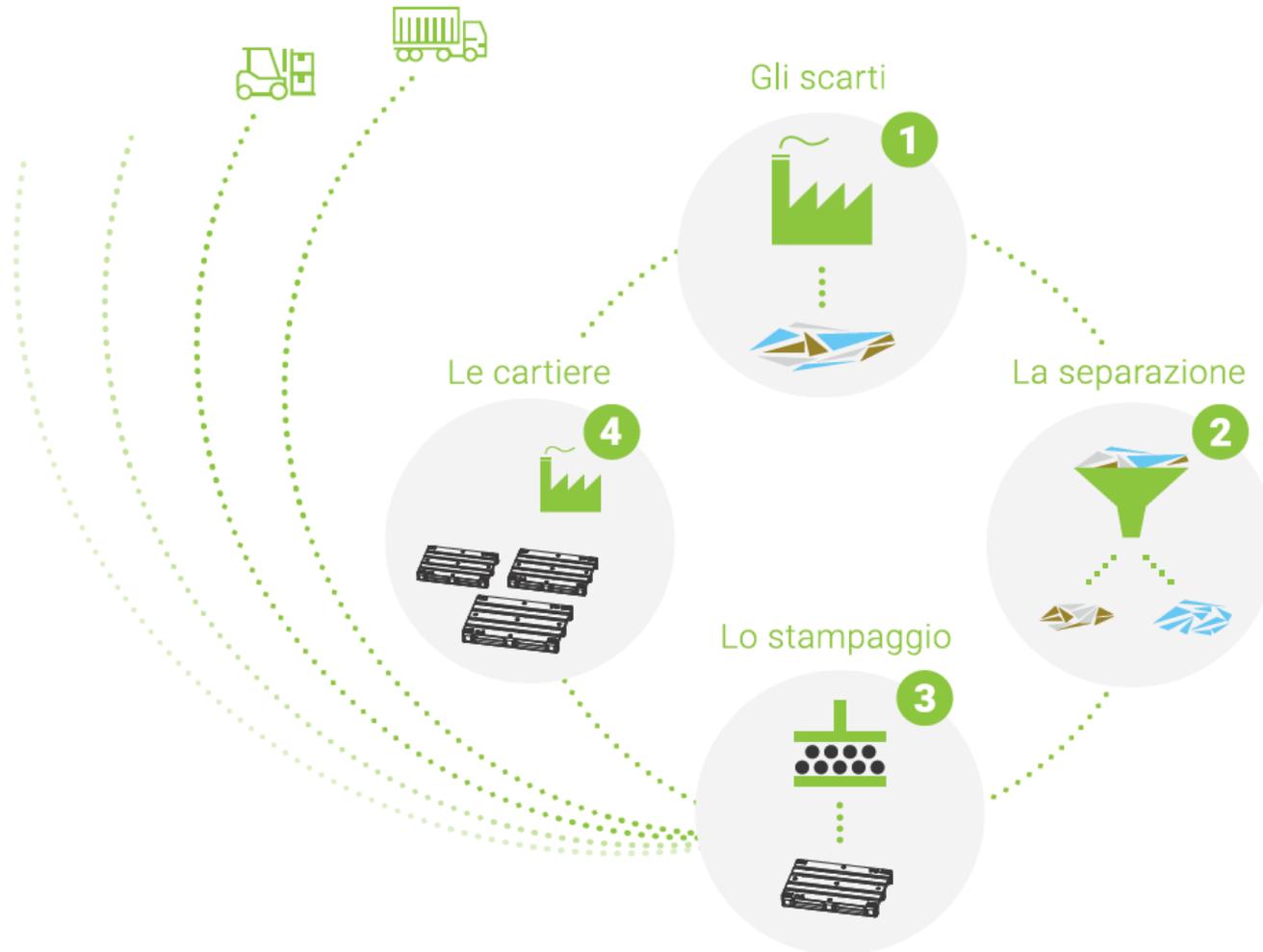
The project we know today as Life Ecopulplast has just become a real business.

- Validation of technology to recycle plastics from pulper waste into new products, i.e. pallets
- Prototype moulding line to process mixed plastics with residual impurities and produce plastic pallets, used during the research project.
- Production capacity has strong volume limitations, but is quite fit to produce small series, typically required to run Customer tests, and this is what it will be used for.
- Local paper mills are investing in facilities to separate mixed plastics from the other materials composing pulper waste
- Within the next 12-18 months, an industrial production line will be available to process at least 20 to 30 thousand tons of pulper waste.

FOCUS OF THE INDUSTRIAL DEVELOPMENT:

- develop products and services around the reuse of waste plastic coming from pulper waste, mixing it (as and when required for special performance) with other recycled plastics.
- one product only, initially, the so called “Eco pallet”, for light industrial usage (up to 800 kg load), i.e. tissue products of local paper converters.
- more products are under developments, and the first year of activity will be focused on exploring customer needs for products related to logistics /supply chain applications that can be produced with our core material.

ECOPULPLAST E LA NASCITA DI r-PALLET



Development and Design

Given the experiences and tests made during the first phase of the project, it is clear that the early adoption Customers for these products are to be found in the following categories:

- Chemical/Plastics Producers
- Large Companies known as active in the “Corporate Social Responsibility”.
- Logistics closed circuits
- Smaller companies careful about tax savings, soon available for those who use recycled materials for packaging

➤ **Chemical/Plastics Producers:**

These companies are in the news every day as number 1 enemies of the environment. So far, they have been very receptive about Ecopulplast project, given that it allows them to do something real and tangible to reduce the environmental impact of introducing plastics.

Within this category , Versalis Group has tested several version of our larger pallet, whose development is not over yet.

➤ **Large Companies know as active in the “Corporate Social Responsibility”.**

These companies aim to new, more challenging emission reduction targets and socially responsible behaviours every year. This trend will be there for a long time and will only become stronger.

Ecopulplast will give them a new, additional way to reduce their carbon footprint and the production of waste

Within this category we have collected a long list of names potentially interested, that we will start to approach at the beginning of 2019.

➤ **Logistics closed circuits**

Pallets are often rented, not bought. The ownership and the handling service resides with companies called “Pallet Poolers”, that today mainly use wood, but either for their own environmental responsibility awareness or because of the one of their Customers that may express preference for the recycled packaging, are few large potential customers and partners for Ecopulplast.

Within this category we have very close contact with PRS – Pallet Recycling System, a Dutch company very active in the chemical industry in Italy, and we will start to present the opportunity to Chep, one of the biggest players.

➤ **Smaller companies careful about tax savings, soon available for those who use recycle materials for packaging**

In Italy, word is that there will soon be fiscal benefits to incentivize the use of recycled materials for packaging. The benefit, at least initially, will be capped in absolute value, that is why we expect it to be more effective on smaller businesses.

This may help find potential customers in the region of origin of Ecopulplast, and help close the “circle” without having to drive too long a distance, given that in this region the size of the companies is mainly small and medium.

➤ **Pallets collection system**

Eco-pulplast pallets can be recycled at the end life-cycle, when damaged or broken, and be reused at input material to produce new pallets.

In this respect, there are two main market targets that guarantee an efficient collection system for pallets to be recycled:

- a) Logistics closed circuits, with pallets owned, managed and handled by a pallet pooler, as described in the previous slide
- b) Pallets owned directly by sellers and managed with a return system with their clients

These two modalities are minor by still relevant and can guarantee a sufficient market share of hundred of thousand pallets per year on the regional territory.

Contrary, the use of plastic pallets in open logistic circuits would required a capillary collection network linked to the current circuit of wooden pallet repair.

Conversion

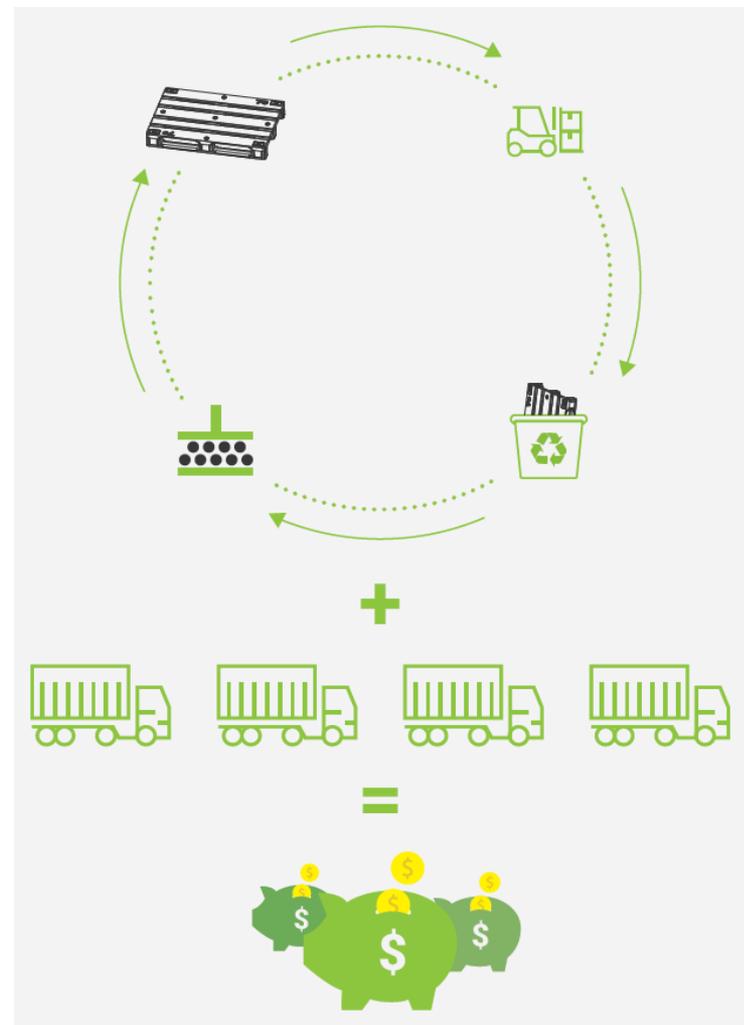
Despite the fact that the product optimization is far from being complete, Ecopulplast is already hitting the road to find market application to this new materials.

Ecopulplast is exploring in three different directions:

- Proposing pallets, to many different business
- Scouting the needs for ancillary products to the pallet that can also be produced in plastics (spacers, cradles, custom-shaped objects)
- Proposing the pellets on the plastics market, in order to explore the opportunity to use it for new applications

BENEFITS OF PLASTIC PALLETS

- Better properties and longer life-cycle
- Resistance to water, chemical, flames
- Trackable
- Washable
- Stable size and weight
- No fumigation and aseptic
- No nails and splinters
- Customisable
- Recyclable



Commercialisation

In order to pursue this new business opportunity, Selene SpA has assessed the options and has decided that the best solution was to create a strong brand identity to promote Ecopulplast potential business.

In fact Selene business focus today is mainly on the production of plastics films, starting from virgin materials.

Nonetheless there is a strong synergy between one of Selene top products, the Stretch hood, and the new plastic pallets to create an integrated packaging system that opens new significant market opportunities.

The new business will also benefits from established organization, facilities, sales channels and partners.

Ecopulplast pallets are not all the same

- ✓ Customisations available upon request
 - 3D logo
 - Colour
 - Surface treatments (anti-flame)
 - RFID for tracking

- Beside pallets, target products are other accessories for logistics and transport



➤ **Local circular economy**

- a) Local paper mills are investing in technologies to separate and recover cellulose fibres and mixed plastics from paper mills. DS Smith Paper Italia has already purchased an industrial line, while Smurfit Kappa Ania and ICP are selecting the technology of choice. In a short time other local mills will follow this paths, as it is happening with paper mills located in other Italian Regions.

These mills will then be able to provide with enough local input material for the first years of industrial development.
- b) Selene is currently selecting a site for the industrial development in the Lucca County, with two alternatives both on Capannori municipality, to produce plastic pallets locally on the same area where pulper waste is produced.
- c) Among the potential customers categories mentioned before, Ecopulplast is investing to create a local market. The most promising market concerns the use of plastic euro-pallet in closed logistics circuits of local tissue paper converters.

Contacts have been established with Unicoop Firenze, which is currently testing euro-pallets produced at the prototype line. Unicoop directly manages the logistics circuit of tissue product between local large tissue producers (Sofidel and ICT – Industrie Cartarie Tronchetti) and the retails points in Tuscany.

Social recommendations

Ecopulplast Business Model aims at enjoying the benefits of providing a solution that involves several companies and a whole community, whose health and well being depends both on the prosperity of the paper making and converting industrial district of Lucca and on the ability to properly manage the recycling and disposal of significant quantities of waste paper, with all related consequences, such as the pollution produced by the trucks carrying it back and forth in this region.

**CONSENSUS BUILDING
AMONG MAIN STAKEHOLDERS
IS THE KEY
FOR SUCCESS**

POLICY

The Circular Economy Package of the European Commission sets targets and priorities to reduce waste to a minimum as well as to promote re-using, repairing, refurbishing and recycling of existing materials and products.

Other local and national policy measures can foster the industrial development and implementation. Among these, two are of particular relevance:

- A Regional environmental strategy that recognises the significance of the environmental problem targeted and assess the need for a better waste management and reduction.
- A National decree on end-of-waste by the Ministry of Environment, defining the 'minimum environmental criteria' for the end-of-waste classification of materials targeted.

Transferability evaluation

Ecopulplast technology is undergoing a technology process patent application. With the strength of a patent, but even without it, the idea of keeping Ecopulplast as trademark for the technology reveals the intention of licensing the technology to players in other countries.

In fact, it is not economically viable to produce pallets for export, therefore the opportunity of finding international partners willing to adopt the technology to produce in other countries is one to be developed.

REPLICABILITY

The project technologies and approach could be easily replicated to other European production sites of local paper mills (such as DS Smith and Smurfit Kappa).

TRANSFERABILITY

Ecopulplast business model could apply to other plastic waste streams and/or for the production of different end products.

In this respect, preliminary tests were conducted on the prototype line with mixed plastics from COREPLA, coming from urban waste collection and selection.

Several other mixed plastics from industrial waste are available on the market, some of which were tested as additives during the project. Each of them have its own specificities in terms of properties and cost and could have an added value on the market for specific applications and products