



# PAPER BIO PACK

WHAT'S THE FUTURE  
OF PACKAGING IN  
CENTRAL EUROPE?

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**Interreg**   
CENTRAL EUROPE  
**BIOCOMPACT-CE**

 HUNGARY-BUDAPEST

 Final Conference: PA Case study descriptions



## FIRST HUNGARIAN PACKAGING TECHNOLOGY CLUSTER





**OMNIPACK**  
First Hungarian Packaging Technology Cluster

# CLUSTER INTRODUCTION

**OMNIPACK** was founded in 2003, its one of the first Hungarian clusters.

Our cluster is vertically structured, members are from the same industry, covering whole of the value chain but they are not each other's competitors. We consider our cluster as a strategical alliance of companies, working in the similar market segment.

Thanks to our members we are capable of satisfying any arising need in the field of packaging.

We are committed to the broader spread of biodegradable and environment friendly packaging materials.

## **Thematic focus:**

- Development, production, processing, utilization, storage and logistics of packaging materials
- Waste management, elimination and reuse
- Packaging technology development like industrial and applied research, experimental developments, innovation preparation and implementation



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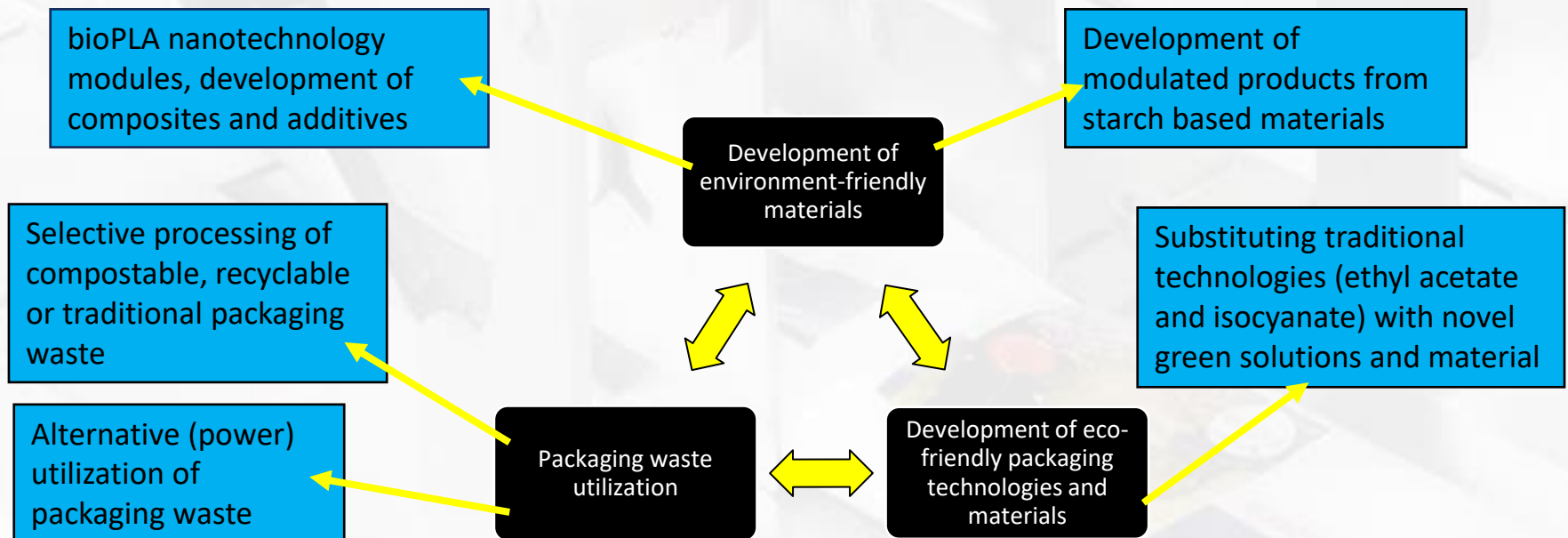
# FOCUS

The cluster is engaging itself in development of environmentally friendly packaging materials and state-of-the-art packaging technology solutions.

We are real advocates of environment friendly packaging materials based on biodegradable biopolymers, their technological development and widespread dissemination.

# STRATEGY

Our cluster is considered as a dynamic strategic association which is a living example of an efficient and innovative cooperation of SME's, big companies and researchers resulting further growth for our cluster members. Omnipack Cluster also serves as a knowledge center of market players engaged in environmentally friendly packaging material.





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# ACTIVITIES

- Centralized service (even for time windows if needed),
- Design, development and custom manufacturing of packaging materials and tools,
- Conventional flexible packaging materials and tools, custom coated papers and coated nonwoven textiles, fireproofed upon request,
- Conventional and custom made rigid wall packaging materials (cardboard boxes, corrugated paper boxes and other cardboard specialties),
- Industrial fillers, auxiliary and protective packaging materials (moulded foams, antistatic and anticorrosion materials, films, papers, styrene products, etc.),
- Technical development and manufacture of custom made packaging machines and equipment; deployment of auxiliary equipment or the required technology
- Warehousing technology (light and heavy duty shelving systems)
- Setting up logistics systems including manufacturing, distribution, organisation and supply of the materials required for their operation (labels, bar codes, RFID, printers, applicators, etc.),
- Operational (custom deployment) software, supplementation and specialisation of existing software,
- Special printing technologies (offset, deep and flexographic),
- Promotional and other packaging, high frequency and other blisters,
- POS tools, exhibition organisation and other decoration and design tasks.





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# CLUSTER MEMBERS

The cluster currently counts 36 members

- 34 SME
- 1 university
- 1 large company

Members are packaging technology producers and service providers

And the industries using these

**100 million  
EUR  
turnover**

**1000  
employees**

## **SERVICES**

Production of packaging materials

Production of packaging and purpose machines

Distribution

Printing

Education, R+D

Transport

Construction

Compressed air technology

Other services





**OMNIPACK**  
Első Magyar Csomagolótechnikai Klaszter

**Our Cluster can support You in all phases of the value chain!**



**>> [www.omnipack.hu](http://www.omnipack.hu)**



## Pilot Action case studies in general

- Pilot actions carried out in six countries, in **three phases** with 21 participating companies
- The outputs served to finetune and verify the business support service, the cross-sectoral approach in technology transfer processes, and market and economic feasibility assessment



- Case studies will be used in communication activities after the project and in conference presentations
- Results are included in the Handbook "Sustainable Paper Plastics Design,, translated into 7 languages and serve as an inspiration for other companies to make use of the business support service.
- Disseminated among companies and R&D institutions



# ACTIVITY A.T2.1 - **PILOT ACTION 1**

## TESTING OF THE BUSINESS SUPPORT SERVICE AMONG THREE COMPANIES BEING PP



Kick-off session held for the personnel in the companies - one session per company (3)

Taking into account that the pilot action has an experimental character, a selected group of company personnel has been engaged in a kick-off session to receive information on the planned action.

- Audit tool- organizational feasibility
- Technological feasibility
- Economic feasibility

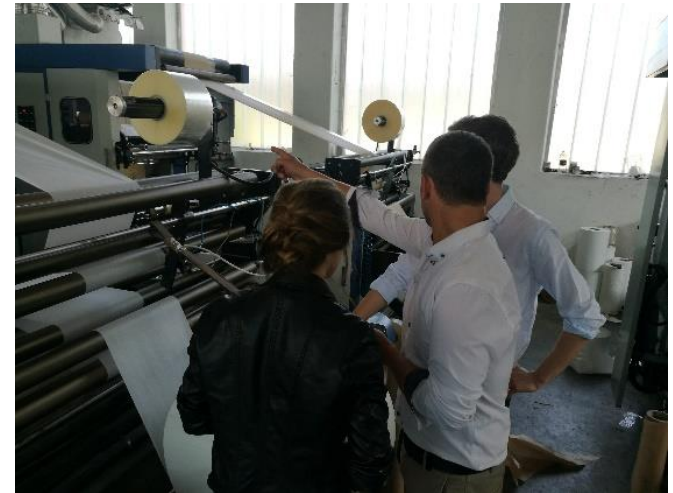
Pilot action with PP2 (Papirol)

Pilot action with PP3 (Ecocortec)

Pilot action with external expertise of PP6 (Pakmar)

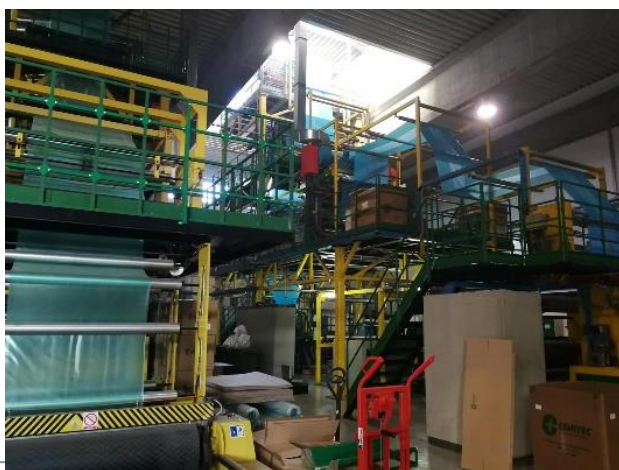


# PILOT ACTION WITH PP2 (PAPIROL) - SLOVENIA





# PILOT ACTION WITH PP3 (ECOCORTEC) - CROATIA





# PILOT ACTION WITH EXTERNAL EXPERTISE OF PP6 (PAKMAR)



# ACTIVITY A.T2.2 - **PILOT ACTION 2**

## TESTING OF THE BUSINESS SUPPORT SERVICE AMONG 18 COMPANIES IN 6 COUNTRIES



# Pilot Action case studies in consortium member countries

- Companies applied for Call for Proposal published by the consortium
- Pilot actions carried out with mainly small- and medium sized players of the packaging value chain in the consortium member countries
- Reports based on the implemented business support service at the companies given as feedback to the companies
- Several case studies prepared to be published and presented as best practices



## Pilot Action 2 case study participating companies

- Jafra print d.o.o\_Croatia
- CLB Packaging\_Hungary
- UgrinPack\_Hungary
- LIC PACKAGING\_Italy
- PLASTIGRAF TREVIGIANA\_Italy
- POL-ZDOB\_Poland
- CHEMOSVIT FÓLIE\_Slovakia
- Panara\_Slovakia
- VUPC\_Slovakia
- Bled Tourist Board\_Slovenija
- DodoPack\_Slovenija
- Infrastructure Bled\_Slovenija



# ACTIVITY A.T2.3 - **PILOT ACTION 3**

## TESTING OF INTEGRATED CROSS-SECTORIAL TECHNOLOGY TRANSFER APPROACH



- Companies selected from the second round of pilots to be included in the further testing of the new technology transfer approach (6 companies)
- Case study scenarios and descriptions prepared based on the outcomes of the pilots in order to be published and presented





## List of participating organization:

Jafra print Solin d.o.o.

DES Split

Grafika d.o.o., Osijek

BIOPLAN d.o.o.

## Description of pilot action:

During the pilot actions, project partners from Croatia (RERA SD and EcoCortec d.o.o.) have been building up the cooperation with the above listed companies. The pilot action in first company (Jafra print Solin d.o.o.) was carried out with the results described in previous reporting (remark: the lamination of compostable foil from EcoCortec to the paper base was not successful).

The third pilot activity was carried out in BIOPLAN, Split and the activity was described within DT2.3.2. Case study scenario (remark: EcoCortec made compostable transparent bags for fresh food content of different dimensions). The next step would be to produce packaging boxes for this pilot case suitable for moist fresh food content. Since the testing of laminating the Ecocortec compostable foil on paper base in Jafra print Solin pilot case failed, the other options are considered. These options take into consideration the rethinking of standard packaging design solutions that are usually used in agricultural products distribution.

The pilot action would illustrate the adoption of guidelines and principles developed within the BIOCOMPACT-CE project leading to an establishment of an adequate value chain where all actors (from product design to final packaging user) would be consulted in order to develop a packaging that adheres to end of life options for bio plastic.



### List of participating organization:

Lic Packaging

Innovhub

Cobro

### Description of pilot action:

#### New paper-based packaging for longer fresh meat shelf life.

The replacement of conventional plastic packaging with paper-based packaging solution is perceived by consumer as an environmental advantage due to higher recycling rate and the use of renewable resources. Nevertheless, several different factors must be taken into account when comparing innovative packaging solutions versus already established and relatively inexpensive solutions present in the market. Life cycle thinking is probably the best approach approaches for analyzing the multi factors parameters thus making the best environmental choice for a specific product.

The pilot action conducted with a packaging producer illustrates the adoption of LCA screening analysis in order to compare three different solutions with similar product shelf life allowing a deeper insight of the main environmental impacts of the product as well as the development of a good communication tools towards their clients. The pilot action is conducted in Italy taking advantage of BIOCOMPACK-CE project regional cooperation and knowledge thus allowing to replicate the concept in different countries.



## List of participating organization:

POL-ZDOB Sp. z o. o.

COBRO

PIOiRO

Omnipack

## Description of pilot action:

### New packaging for POL-ZDOB packaging printing company.

The company was chosen for the second round of the Pilot Actions. The outcome of the second round of the PA and the substantial potential of the further cooperation led to appointing the company for the final round. The company is aiming to expand their market to the European countries. Therefore, they are aiming to replace paper, aluminium, and polyethylene with bioplastics with the same barrier qualities as the traditional materials. The most important material for them would be a bioplastic material for tea envelopes (packaging size 66mmx 180mm) that could be printed and still be biodegradable. Joint cooperation between the company and Polish partners - COBRO and PIOiRO has led to establishing the main area of the desired solutions, however; for the final round there is a need for a contribution from the Omnipack partner as the expert in choosing the most suitable materials and additives for the desired packaging that would fulfil needs of the clients with substantial consideration for the economic and environmental issues, thus creating a fully sustainable packaging that could be incorporated for multiple applications. The pilot action is an example of incorporating tools and methods developed within the BIOCOMPACT-CE project leading to the creation of a sustainable packaging in the regard to the project's aims and the regional development.



## List of participating organization:

PANARA

Pulp and Paper Research Institute

Chemosvit Folie

STUBA

## Description of pilot action:

New biodegradable plastics from renewable resources for composite materials with paper - NONOILEN, developed in the company PANARA, will be useful for new innovations in packaging. The company was chosen for the second round of the Pilot Actions. This second round outcome for the PA and the substantial potential of the further cooperation led to appointing the company for the final round. PANARA gradually wants to expand the application areas NONOILEN for innovations in packaging to make proposals for products based on paper and biodegradable plastics films particularly for food packaging able of composting. PANARA is developing the business sector cooperation with the academic sector. The development continues to move forward, the whole team has the ambition to deliver not only the production of organic plastics, but to offer with them a whole system that can ensure that waste from these plastics is truly evaluated in the most correct way by biodegradation. Joint cooperation between PANARA and partners Pulp and Paper Research Institute in Bratislava (developing new innovation materials based on Paper/biodegradable plastics composite) and Chemosvit Folie in Svit (producer of films for packaging) has led to cooperation in common projects.



## List of participating organization:

Tourism Bled

Infrastruktura Bled d.o.o.

DodoPack, Andreja Pogačar

Termopol, d.o.o.

## Description of pilot action:

### New packaging for the Bled Local Selection brand.

Bled is a major tourist destination in Slovenia. It is working to transform itself into a eco-friendly green destination. A part of this effort is to use sustainable packaging for specialty local products sold under the Bled local selection brand. BIOCOMPACK-CE was engaged to develop sustainable combined paper-plastic packaging that is in line with their environmentally friendly principles.

Packaging development is at the core of establishing a value chain and a broader regional impact. The effort brings together Dodopack - a packaging designer, Thermopol - a producer of materials that wishes to start production of biocomposite laminated paper, Tourism Bled that provides unified packaging to local producers of consumer products joined in a collective, and Infrastruktura Bled - the local waste management company. The case will be further promoted through local communities in the Julian Alps that are partners in the UNESCO MAB development plan of Julian Alps.

The pilot action illustrates the adoption of guidelines and principles developed within the BIOCOMPACK-CE project leading to an establishment of a new value chain and is poised for regional replication that will enhance the impact. It is creating new opportunities for the region, its local production and communities, taking advantage of regional knowledge and capacities to improve life and the environment.



# Pilot action in practice

## UgrinPack Kft. Hungary





## Pilot actions at UGRINPACK

FOUNDATION: 1991

EMPLOYEES: small size company

KEY PRODUCTS/ SERVICES:

production of flexible

packaging materials

packaging of promotional products

production of POS products

packaging of blister products

KEY MATERIALS:

flexible packaging

materials

rigid packaging materials

blister

POS



**UGRINPACK**

MINŐSÉGI CSOMAGOLÁSTECHNIKA

AZ ÖN IGÉNYEIRE SZABVA



Considering the financial position and strategy of the participating small packaging company and taking into account the Hungarian market demands the best solution in the **first round of pilot actions** was to replace PE (polyethylene) to Ecovio.

During extrusion coating, switching from PE to a compostable version can be very costly, therefore, based on our other suggestion, we have also recommended a dispersion lacquer that can be applied with a suitable lacquer coating technology. Its conversion cost is much lower and has almost the same barrier water and barrier properties. In order to test our preconceptions the company has participated in the **second round of pilots** as well.



# PILOT ACTION WITH UGRINPACK



**Solution: Paper coating with Ecovio or dispersion barrier layer.**



## List of participating organization:

Ugrinpack Kft.

OMNIPACK

## Description of pilot action:

The small sized Hungarian company was chosen to take part in the second round of the Pilot Actions in order to continue the testing regarding the replacement of polyethylen (PE) in the production of paper cups.

The participating small packaging company is producing paper products and different materials (e.g. paperboard, linerboard, laminated or extruded material, plastic film). The company specialises in production of traditional and environmentally friendly packaging materials and tools. They also develop packaging materials and tools, manufacture custom industrial packaging materials, furthermore they undertake contract (e.g. promotional, traditional or high frequency blister) packaging.

Based on our preliminary suggestion, we have recommended a dispersion lacquer that can be done with a suitable lacquer coating technology. Its conversion cost was estimated to be much lower and has almost the same water barrier and grease barrier properties as PE.

As to refine the findings of the first pilot the available dispersion coating providers should be tested and afterwards the different features of the materials should be scored and examined, such as water resistance, grease resistance, weldability, compostability, and recyclability with paper. The testing at the company will be manually done in the first phase, while the industrial technology testing will follow afterwards, which will understate the cost effectiveness of the innovative solution.



# PILOT ACTION WITH UGRINPACK



The basic paper



Coating of the paper with recyclable and compostable dispersion coating layer



Drop forging of the paper cup samples



Paper cup samples ready for placement in the machine



In the second pilot action several case study scenarios were tested regarding material type and industrial technology in order to find the most cost effective and environment friendly innovative solution to produce paper cups at Ugrinpack.



Find out more about  
the case study of UGRINPACK:

[www.tbpc.com/casestudies](http://www.tbpc.com/casestudies)







**THANK YOU!**

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