



Awareness

Improving the quality of paper for recycling

Newsletter of the EcoPaperLoop Project

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Awareness is the key

In Central Europe regions paper for recycling is a major resource. However, the paper recycling rates are still highly inhomogeneous.

Since paper for recycling is not only recycled in the country where it is produced, some essential features such as eco-design and eco-collection concepts must be developed at transnational level to increase the sustainability of the paper loop. The new project aims at improving the quality of paper for recycling.

The EcoPaperLoop project will run until end of 2014. It is co-funded by the European Union/European Regional Development Fund (ERDF) and the local project partners. Graziano Elegir



On the way to a sustainable paper loop in Central Europe:

Recyclability of packaging, a life cycle analysis and how to collect

What makes a paper product sustainable? If this sustainability is maintained all along the product's life cycle, and that includes recyclability. For a graphic paper, it also includes

Another way to look deeper into the sustainability of a product is to compare scenarios by performing a life cycle analysis. Project partner CO-BRO in Poland develops a LCA



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deinkability: being able to remove and separate the printing ink from the fibres. For graphic paper, valid test methods exist for many years already.

For packaging, EcoPaperLoop partner PMV in Darmstadt has developed a new recyclability evaluation method and trained this method with the partners. *More about method and workshop in Darmstadt on page 2.*

for packaging. *More about this on page 4.*

Awareness is a key issue – and communication is an important element of the project. A press conference in Milan, a stand at the EcoPrint fair in Berlin and most recently an event in Ljubljana titled "Improving paper's ecological life cycle – together!" *Ljubljana and other activities also on page 4.* ●



The project partners at the kick-off meeting in Milan in September 2012

Press conference at the kick-off meeting

During the kick-off meeting of EcoPaperLoop last September, Graziano Elegir (project leader, left) and Axel Fischer (EcoPaperLoop Public Relations) explained the project with Paolo Pipere, Milan Chamber of Commerce. More at "In the Media" on www.ecopaperloop.eu. ●



Hans Putz, PMV

How to test the recyclability of packaging: Workshop at PMV

What are the potential problems when recycling a specific piece of packaging? It can be difficult to disintegrate, it can contain non-paper components such as plastic films and it can include adhesives that are difficult to remove during the recycling process.

At Darmstadt Technical University, chair for paper technology and mechanical process engineering (PMV), a new test has been developed which helps to rate all these challenges. The method was presented by Hans Putz, leader of EcoPaperLoop Working Group 3, and his staff at a workshop in January.

The test method is a new assessment tool to evaluate the recycling performance and to standardise the practices performed in the different countries today.

The procedure will be used for an extensive assessment campaign to create a wide database on packaging recyclability in Germany, Italy, Poland, Slovenia and Hungary. A score-

card proposal based on project results will constitute the main output of this activity.

How the method works

Goal of the procedure is the simulation of the behaviour of packaging material during the stock preparation of a paper mill. During the investigation the packaging material is probed considering the content of non-paper components, content of difficult to disintegrate material, the flake content and the macrosticky potential.

In a low consistency pulper, 480 grams of the sample are disintegrated with about 12 litres of water to achieve a stock concentration of 4 percent. The suspension with the whole volume is then filled into the



EcoPaperLoop in Warsaw October 29, 2013

Which collection system delivers the best quality of paper for recycling? How do you design a paper product to be recyclable? These and more questions will be discussed at a seminar for everybody in the paper chain: recyclers, printers, publishers or agencies as well as packaging converters.

screening device and agitated for three seconds, then drained through a screen with 10 millimeter holes. The reject is washed, dried and weighed.

Then the flake content is determined e. g. using a Brecht-Holl screening device, a metal plate with 0,7 millimeter holes.

As adhesives can deposit on



the paper web in the process of producing both paper or board, the macrosticky content is an important parameter to rate the recyclability. Macrostickies (primary stickies) are larger pieces of adhesives that do not pass a 100 micrometer slotted plate.

The macrosticky content is determined according to INGEDE Method 4: The reject is transferred to a paper filter, stained with black ink, then the sticky rejects visualised with white, special fused alumina powder. The sticky area is evaluated by image analysis and counted as area per kilograms of product.



Dennis Voß and Georg Hirsch from PMV performed and discussed every step with the participants from the partner institutes "hands-on" in the lab. A video demonstrating the procedure will soon be available in different languages at www.ecopaperloop.eu. ●

EcoPaperLoop Project Partners

- Innovhub-Stazioni Sperimentali per l'industria, Paper Research Division, Italy (Lead Partner)
- Paper Technology Consulting GmbH, Germany
- Technical University of Darmstadt – Chair of Paper Technology, Germany
- Technical University of Dresden, Faculty of Mechanical Engineering, Institute of Wood and Paper Technologies, Chair of Paper Technology, Germany
- Pulp and Paper Institute Ljubljana, Slovenia
- University of Ljubljana, Slovenia
- University of West Hungary (Faculty of Wood Sciences) Paper Research Institute, Hungary
- Polish Packaging Research and Development Centre, Poland
- COMIECO, National Consortium for the Recovery and Recycling of Cellulose-based Packaging, Italy
- Lombardy Region, Italy



Supporting Organisations

- Ministry of Agriculture and the Environment, Slovenia
- Municipality of Dunaújváros, Hungary
- Milano Chamber of Commerce, Italy
- Confederation of the European Paper Industry
- Assocarta, Italy
- Intergraf
- Università di Milano Bicocca, Italy
- VDP, Germany
- Austria Papier Recycling, Austria
- INGEDE International Association of the Deinking Industry

EcoPaperLoop in Europe

In Brussels, the EcoPaperLoop project was introduced on the occasion of the **European Paper Week** organised by CEPI in November 2012 (right).



At the Berlin **EcoPrint Show**, a small booth (above) informed about the activities planned.



The annual **INGEDE Symposium** in February in Munich, included Graziano Elegir presenting the project with Harald Großmann and Dennis Voß.

At the **University of Ljubljana**, in February Diana Gregor Svetec introduced the project and informed about the paper life cycle. ●

Life cycle analysis of packaging: What is the best eco-design?

A life cycle analysis (LCA), also called ecobalance, is an established way to compare the environmental impact of different goods and services, especially of packaging systems.

For the EcoPaperLoop project, the Polish Packaging Research and Development Centre (**COBRO**) in Warsaw in cooperation with **Innovhub-SSI** in Milano will develop various tools that will be used to determine how the eco-design may contribute to the sustainability and end of life of paper based products.

The assessment of sustainability consists of environmental, social and economic aspects. While environmental analysis is performed

mainly by LCA, it has to be defined whether or how to assess the social and economic aspects of the study.

In the first six months of the project, the task is the definition of the model study, as well as the system boundaries of the analysis and the main target stakeholders.

In cooperation with companies producing graphic products as well as paper packaging products, the LCA about the environmental impacts of possible product improvements and innovative eco-design will be developed, looking especially at the recycling process. ●



EcoPaperLoop seminar in Ljubljana