

UK mills campaign for more quality: PaperChain and "Real Recycling" vs. WRAP and "Recycle Now"

Poor quality is not sustainable recycling; it is unnecessary and avoidable waste", Martin Green says. He is the chairman of PaperChain, part of UK's Confederation of Paper Industries (CPI). Paper recyclers cancelled their support for WRAP, a government initiative to promote recycling, and its "Recycle Now Week" in June.

UK paper reprocessors are seeing some very poor quality recovered paper coming onto the market, and are unwilling to take the risk of using this material because of the negative impacts on the paper making



process", Green says. "The bottom line is that a paper mill cannot recycle tin cans, food, and plastics into new paper products. PaperChain has serious doubts as

to the long term sustainability of recycling in the UK "if the lack of focus on quality continues" and launched a "Campaign for Real Recycling". (see also next page)

Be careful with our resources Co-mingled means contamination and less efficiency

Single stream collection works in the US and is the way to do it – this was one implication of an article published by "The Economist" on June 9th. On behalf of the European Recovered Paper Council (ERPC),



Anders Hildeman sent a letter to the editor to express the concerns of the paper industry about co-mingling of recyclable materials:

In the paper industry we have seen a growth of such schemes in Europe. Even if the concept seems appealing

"The European Paper Industry has, on average, a better environmental performance than the paper industry in other parts of the world"

it unfortunately leads to high levels of cross-contamination (from other materials in the recovered paper). In turn this leads to less efficient use of resources.

The European paper industry has achieved a 63.4% recycling rate. If we are to reach higher levels and find the right qualities of recovered paper, ensuring separate collection of different materials will be necessary.

On another note, your article almost seems to argue that it is better to

Anders Hildeman works for SCA, he is Chairman of the ERPC (European Recovered Paper Council)

send recyclates to developing countries for processing. The European paper industry has, on average, a better environmental performance than the paper industry in other parts of the world. Surely the place to recycle should be guided by the environmental impact, including the impact of transport.

Europe and the US should be careful about their raw material resources. Without recycling, the paper industry and its numerous employees in Europe would only be about half their current size. I would think that the same applies to many other industries.

Best regards,

Anders Hildeman
ERPC Chairman



INGEDE

MRF in the U.S.: Source of contaminated Paper, not of sustainable raw material

A decrease in the quality of the recovered paper delivered to the paper mill had been expected, when many communities in the north-western states of the U.S. switched to single-stream collection. "But we didn't expect it to be that bad", says Jerry Carlof, supervisor of the deinking plant of a paper mill in Oregon. "Today we have about 17 percent contaminants in the paper. And we are happy, when it's close to ten percent."

Magnified by more than 500 tons of feed-stocks per day, this translates into more than 80 tons being lost each day.

In Germany, the standards agreed upon with recovered paper merchants are much lower – the limit for contaminants is 2.5 percent. And still the mills try to keep out of the system what they cannot recycle for new paper, here it is mainly brown board and plastic.



In the U.S., an increasing number of communities are adopting single-stream collection systems whereby core materials (paper, plastic, glass, steel, and aluminum) are combined and collected together with sorting occurring at a material recovery facility (MRF). Recycling program coordinators cite several reasons for the move away from source-separated and toward single-stream collection systems: Lower collection costs is their main argument, also more recyclables to be diverted from the waste stream.

Benefits become less apparent when examined as a whole. U.S. Newsprint manufacturers, in particular, noted increased incidents of contamination such as plastic film and fine particulates of broken glass or cullet in old newspa-



per bales. A 2005 study found that the supplies of old newspapers from single-stream programs averaged contamination levels of 15 percent, compared to less than 0.5 percent from source-separated programs.

Paper mills say that 39 million pounds of plastics were sent to their mills in one year because of poor sorting. The consequence is increasing cost for landfill and for replacing damaged equipment in the mill. To cope with the glass, Carlof needs high density cleaners. The abrasive pieces constantly destroy the expensive interior – it has to be replaced frequently. "If we get six months we're happy", he says.

Glass, metals and plastics introduced into the papermaking system by poor MRF sorting are wearing out pipes and pumps much more quickly than in the past.

As a consequence, mills have to close. The paper they get costs too much money to process. A paper mill in the LA basin had to shut down because it could not compete with prices paid for paper export any more. Now even more paper recovered in California goes to China. ●

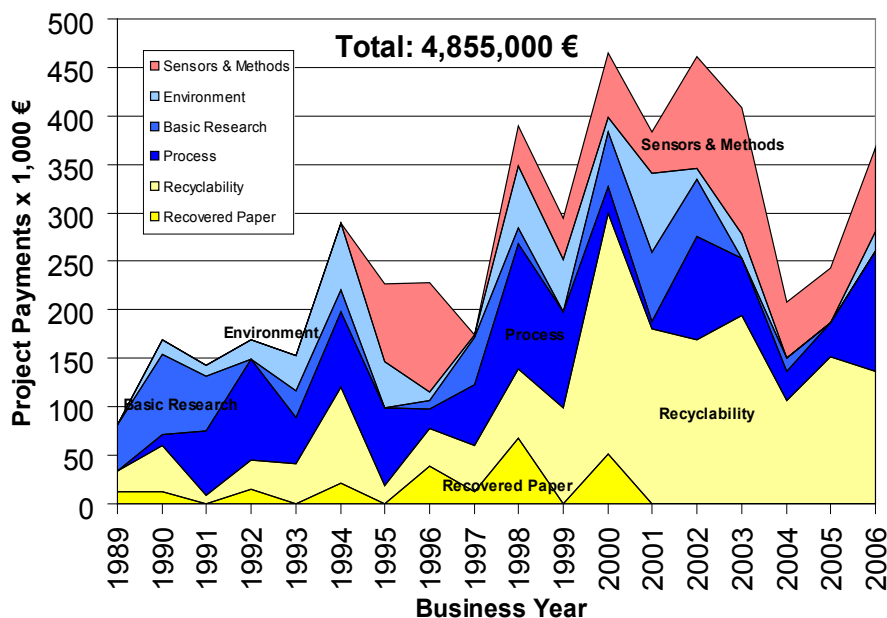
New INGEDE country representative in Italy

Dr. Graziano Elegir of SSCCP will represent INGEDE in Italy and intensify contacts to the paper chain there.



SSCCP, the Italian Pulp and Paper Research Institute, is a public commercial organization. Its activity is focused to give technical and analytical support to the Paper Industry.

Milano will be the venue of this year's INGEDE Seminar. With flexo prints from Italy causing many problems in the rest of Europe, INGEDE will intensify communication on deinkability issues in Italy. ●



INGEDE's Research Budget: 1.7 Million Euro for Recyclability

Recyclability was on the agenda from the minute INGEDE was founded in 1989 and it continues to be the most important research area. From a total of almost five million Euro, more than 35 percent were spent for recyclability issues. The

early projects dealt with fundamental problems like ink detachment or the flotation process.

Communication and political issues have become more important. And INGEDE's test methods have become accepted standards. ●

Reflected Beam Betrays Paper and Inks

The "material fingerprint" of a substance is based on the classification by sensor systems in the near infrared and the visible light. A light source illuminates the sample. Part of the light will be absorbed by the sample, the remaining light reflected.

The reflected beam displays signatures typically for the material – a sort of a fingerprint that reliably identifies the material. Especially the near-infrared spectra provide important information that visible light does not. By that, the images gain an additional dimension: Length, width and material information. This enables to measure simultaneously and contact-free – and delivers a spatially resolved analysis of some hundred spectra with one single image.

It is not the hardware alone that makes the system. It takes a combination with adequate algorithms to compile an intelligent system from it", Leitner explains. "For the industrial application an on-line classification is necessary which in the first place allows real-time detection. Real-time in this case means that there are usually only about ten milliseconds or less for recording, processing and classification of one line of the image. Only with the classification of this speed industrial sorting systems can be developed and implemented."

Multispectral image processing has been used for plastic sorting plants for a long time. The food industry also utilises the technology, e.g. to determine the quality and degree of ripeness of fruit or vegetable or to detect contermination of poultry. In mineralogy this system can help to tell genuine from false turquoises, detect minerals or evaluate drilling cores. It can also assist in medical technology (dermatology, cosmetics, plastic surgery).



Paper recycling preserves the environment – and it also contributes to protect the climate as it saves energy and resources. That

is why more and more paper shall be recycled, and that is why paper mills produce more and more high paper grades from recycled fibres or at least with a significant portion of deinked pulp. But today this also means that the raw material has to be inspected more thoroughly.

With more paper being collected, in many cases there is a change for the worse in paper quality. Non-paper components such as wood, plastics, metal or textiles have to be removed prior to the recycling process. In order to produce new, bright newsprint from recovered paper, this has

to be free from brown board and should consist mainly of newspapers and magazines.

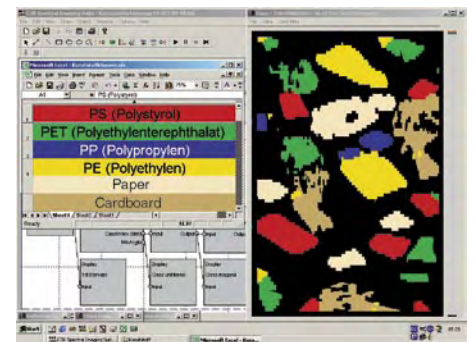
Serious problems hide even in the bright newspapers. In order to produce the white paper for newspapers and magazines, copying paper or hygiene papers, the paper has to be deinked. Flexographic printed newspapers that are published in the UK and in Italy have to be removed from the recovered paper before: Unlike common offset printed newspapers, flexo prints currently are not deinkable and have to be rejected.

Optical sensors can detect what is invisible to the human eye. The Austrian research center CTR in Villach is an expert in the field of optical metrology. Their "Spectral Imaging Technology" and numerous industrial projects in this area have established CTR's international reputation. This is why INGEDE, a European association of paper mills, has started a joint project with CTR in order to optimise automated sort-

Automated Sorting of Recovered Paper: Infrared Eyes Detect Interfering Flexo Prints and Board

ing of recovered paper for deinking using this technology. The aim is to detect and reject not only non-paper impurities like plastics or wood, but also unwanted papers like cardboard or pamphlets that are dyed throughout.

Even flexo news that are impossible to distinguish by the naked eye will be detected by the sensor system that CTR develops. "This is the biggest challenge for us. Flexo news which come across the borders from the UK or Italy in the course of the globalization of the recovered paper trade, yet can only be identified by their title", says Raimund Leitner, project leader with CTR. "Our system will manage that on the assembly line, within ten milliseconds or less."



Still recovered paper is mostly sorted by hand on the assembly line. Especially the board fraction has to be separated from the recovered paper which usually is being collected together with packaging material. The "classic" among the infrared sensors can distinguish paper from board automatically. Four plants in Germany and two in Austria in the meantime utilise this technology developed by CTR. Once the disturbing board has been recognised, a precise, powerful airstream blows it into a separate chute.

The new system has a higher resolution and a wider spectral range. So it can even detect and reject flexo inks. A prototype of this plant has been mechanically completed and runs in the Villach Research Center, the first results of the new image analysis are very promising.

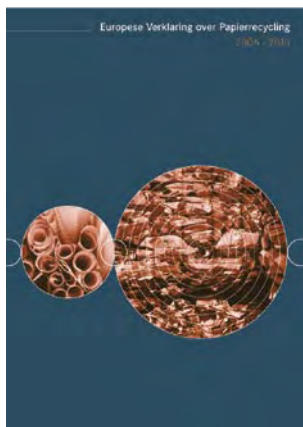
Illustrations: CTR (2) ●

First Meeting of ERPC Technical Committee New European Declaration Now in Five Languages

After successful cooperation within the paper chain in Germany, the model of a "Technical Committee" has been adopted by the ERPC on a European level. At the first meeting, representatives of CITPA, EUPIA, FINAT, INGEDE, Intergraph and Radtech Europe discussed deinkability scores for printed prod-

ucts and suggested a recyclability assessment also for packaging grades. In the Netherlands, Willy van Assche took care of translating the New European Declaration on Paper Recycling into Dutch.

The New European Declaration on Paper Recovery is now available in five languages on the internet. ●



INGEDE The **International Association of the Deinking Industry** was founded in 1989, first with the target to support the voluntary agreement in Germany upon graphic paper recovery rates by its expert knowledge.

In the following years INGEDE consequently developed to an European expert association on deinking technology and recyclability of graphic printed products, today supporting also the voluntary declaration of European paper chain associations with ambitious recycling rates in Europe. Currently 39 European deinking paper mills and research departments are members of INGEDE, representing today more than 10.5 million tons of recovered graphic paper.

Paper Chain in Milano

Come to the annual **INGEDE Seminar Recyclability** which is planned for October 4, 2007 in **Milano**, from 10:00 to about 16:00 hrs! If you are an active member of the paper chain as a publisher, printer, recycler or member of their associations or if you work for a paper mill and are interested in the work of INGEDE, you are welcome to be our guest!

This year's topics include:

- Paper Recycling in Europe and in Italy particularly
- Recovered Paper Quality
- Deinking Process (Challenges and Developments)
- Recyclability of recovered paper (Problems with flexo/digital prints)

More information on INGEDE's web site www.ingede.com or by e-mail.

Meet INGEDE at the ZELLCHEMING EXPO, June 26-28, 2007 at booth 315!

The next **INGEDE Symposium** will take place on Thursday, Jan 24, 2008.

International Association of the Deinking Industry

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ERPC Introduces New Annual European Award: A Prize for Initiatives that Support Paper Recycling

Recycling is an increasing part of our daily lives and by playing a part in recycling, on many different levels, society can help secure Europe's sustainability for the future.

Paper recycling initiatives are encouraged to apply for the first annual **European Paper Recycling Award**. NGOs, educational institutes, local authorities and industry have implemented many innovative projects to enhance paper recycling all over Europe but these initiatives are generally not well known.

Promote, Facilitate, Improve

Eligible projects, initiatives or campaigns will fulfil one or more of the following criteria:

- Promote or encourage paper recycling
- Facilitate or improve paper recycling operations
- Raise awareness of recycling and how to recycle paper
- Improve the quality of recovered paper.

The initiatives may be ongoing or completed, but they must already have started; however, not before January 2005. All entries must be **submitted by 31 August 2007**. An



independent panel of experts from across Europe will judge the entries in each category. The panel includes representatives from the European Parliament, the European Commission as well as associations of regional authorities and NGOs.

Recognition and Paper Artwork

European wide recognition of the winning candidate's efforts will be accompanied by an original piece of paper artwork, which will be officially handed over to the winners in an award ceremony during the European Paper Week on 28 November 2007 in Brussels. ●