

COST

Technical Committee

“ Forests and Forestry Products”

COST Action E48

LIMITS OF PAPER RECYCLING

MONITORING PROGRESS REPORT

Period: 29.3.2005 – 31.12.2005

**This Report is prepared by the Management Committee of the Action
and presented to the relevant Technical Committee.**

**The report is a "cumulative" report, i.e. it is updated annually
and covers the period beginning from the start date of the Action.**

1. OVERVIEW: ACTION IDENTIFICATION DATA

See the table "Action identification data" attached at the end of the report.

2. OBJECTIVES

The main objective of this Action is to collect facts, data and experiences to develop scenarios which are able to – in a meaningful way – predict the future ecologically and economically optimised utilisation of recovered paper within the European paper industry. In order to do this it is important to identify ecological and economical limits beyond which paper recycling would no longer be a reasonable option. Once these limits are identified the paper industry will be in the position to undertake targeted approaches aiming at extending these limits – or to make in-time decisions to prepare for a gradual re-substitution of recycled fibres by virgin fibres. The availability of such well and comprehensively investigated scenarios are an important prerequisite for the European paper industry to undertake means which enable it to maintain an as high as possible level of sustainability and at the same time remain competitive in world markets. Thus the way will be paved for targeted approaches in various fields, the aim of which is to safeguard the raw material base for the European paper industry for which recovered paper plays an important role and, at the same time help the industry on its way towards full sustainability,

The benefits of the outcome of this action will be:

- a sound base
 - for targeted research activities on recovered paper treatment technologies
 - providing arguments necessary for the discussion with governmental organisations and the government in order to avoid further obstacles reducing the attractiveness of recycling used paper products
- guidelines for the design of recycling-friendly paper products
- guidelines for more effective, tailor-made collection strategies for used paper products
- a background for investment decisions taking into account likely changes in raw material markets.

In order to achieve these benefits, it will be necessary to collect data and gain a better understanding of the following fields:

- mid-term development of the European paper industry's raw material markets
- expected improvements in existing process technologies as well as expected new technologies arising in:
 - machinery (particularly recycled pulp treatment techniques with improved selectivity as well as techniques by which fibre properties can be regenerated)
 - process technology (control techniques, quality management, sensors etc.)
 - process chemistry (not necessarily restricted to de-inking processes)
- mid-term development of quality standards for all major paper and board grades, including upcoming new qualities
- pros and cons of established or planned collecting systems,
- quality of recovered paper resources not yet exploited,

- the future composition of recovered paper with respect to potentially detrimental substances,
- feasible development in national and European legislation relevant to paper recycling.

3. TECHNICAL DESCRIPTION AND IMPLEMENTATION

To achieve the goals and benefits mentioned above it will be necessary to co-ordinate the exchange of results obtained from nationally supported research activities within Europe in the following areas and to converge them into an as complete as possible picture of the future of paper recycling:

Scientific area 1: Limits governed by the Characteristics of Recovered Paper & Cardboard (Resources, recovery and quality of used paper & board products)

This implies the characterisation and evaluation of

- the potential quality of existing resources for recovered paper and board as well as those which might additionally be exploited in the mid or long-term,
- the impact of foreseeable trends in paper converting and paper finishing on the quality (recyclability) of the product
- the various strategies for the recovery of used paper and board products
- the impact of these recovery strategies on the quality of the paper recovered

Scientific area 2: Limits governed by pulp preparation technologies (Treatment technologies of recovered paper: State of the art and perspectives)

This implies the

- assessment of the state of the art and future potentials of recovered paper pulping techniques as well as those for cleaning and improving recycled pulps. This not only includes machinery but also the chemicals used for these process steps as well as process operation strategies (design of process chains including sensor technology and control systems),
- identification of changes in the composition of recovered paper in terms of non-paper components, their accumulation and the microbial activities in extremely narrowed or even closed water circuits and the potential impacts of all these effects on both processes and product quality.
- the recyclability of different raw materials.

Scientific area 3: Limits governed by market developments, legislation and sustainability aspects (Market trends with respect to the future demand of paper grades and their quality requirements)

This implies the identification of the mid-term development of supply and demand of recovered

paper, particularly through

- monitoring world-wide, mid- and long-term investment projects for new production capacities for recycled fibre based paper and board,
- identifying current and future trends in legislation with direct or indirect impacts on paper and board recycling,
- predicting the consumers' attitude towards recycling based products and the future importance of environmentally sound processes and products,
- evaluating future product quality requirements to be met by major grades or at least those relevant for recycling and their implications,

- assessing the potential contribution to sustained paper recycling by the converting industries, i.e. by the recycling-oriented design of paper and cardboard products.

Mode of operation

The Action will be carried out in compliance with the general rules of COST and will include:

- workshops, conferences and seminars
- exchange of experts, scientists and graduate students for training
- exchange of reports, publications and experimental procedures
- state-of-the-art conferences and workshops
- joint projects in specific areas by two or more of the participants.

Subdivision in Working Groups,

The organisational structure consists of a Management Committee which organises and controls the Action. Three Working Groups (WGs) corresponding to the three scientific areas have been formed. All WGs will organise seminars. Conferences will be jointly organised. Dedicated reports will be published by the WGs. A Short-Term Scientific Mission (STSM) Manager will organise and be responsible for the STSMs. The overall coordination of the activities and the time schedule as well as the contact with other COST Actions or potential partners will be organised by a Steering Committee consisting of the chairpersons of the Management Committee as well as the coordinators of the Working Groups.

4. PARTICIPATION AND COORDINATION

4.1 Management Committee

Chairman	Vice Chairman
Mr Jan-Erik Levlin, KCL Lentokapteeninkuja 4F (private) SF-00200 Helsinki Finland +358-40-5116049 jan-erik.levlin@iki.fi	Prof. Dr. Harald Grossmann Professorship for paper technology Technische Universität Dresden D-01069 Dresden +49 351 463 38033 grossmann@mhp.mw.tu-dresden.de

Members

Country	Name	Affiliation
Bulgaria	Mr Kasimir Sachov	Pulp and Paper Institute
	Dr Stanka Nedeva	
	Dr Svetla Tsanova	
Czech Republik	Dr Pehr Stehlik	TU Brno
Finland	Dr Isko Kajanto	KCL
	Mr Juha Saari	VTT
France	Dr Alain Cochaux	CTP
	Dr Francois Julien-Saint-Amand	
Germany	Prof. Dr. Harald Grossmann	Dresden University of Technology
	Dr Alf-Mathias Strunz	PTS
Hungary	Dr Sandor Hernadi	Paper Research Institute
	Dr Piroska Karolyi-Szabo	

Ireland	Maria G. Tuhoy	University of Galway
Italy	Dr Giorgio Capretti	Stazione Sperimentale Carta
Latvia	Mrs Lubova Belkova	Latvian Inst. of Wood Chemistry
Netherlands	Mr Arie Hooimeijer Ms Anitta Westenbroek	Kenniscentrum Papier en Karton Wageningen University
Poland	Dr Dariusz Asendrych Prof Pawel Wandelt	TU Chestochowa TU Lodz
Romania	Mrs Petronela Nechita Prof Elena Bobu	CEPROHART TU Gheorge Asachi
Spain	Prof Angeles Blanco	University Complutense de Madrid
Sweden	Dr Peter Axegård Mrs Anna Jacobs	STFI-Packforsk
United Kingdom	Mr Roland McKinney	FRC Ltd

4.2 Participating Institutions

Country	Institution
Bulgaria	Pulp and Paper Institute University of Chemical Technology and Metallurgy
Czech Republik	TU Brno
Finland	KCL VTT Jaakko Pöyry Oy Åbo Academy University
France	EFPG CTP
Germany	PTS Papiertechnische Stiftung TU Darmstadt TU Dresden INGEDE
Hungary	Paper Research Institute Dunapack Ltd
Ireland	University of Galway
Italy	Stazione Sperimentale Carta e Cartoni SSCCR
Latvia	Latvian Institute of Wood Chemistry
Netherlands	Kenniscentrum Papier en Karton Kappa Packaging Wageningen University
Poland	TU Czestochowa TU Lodz
Romania	CEPROHART TU Gheorge Asachi
Spain	Complutense Universidad de Madrid Universidad de Girona
Sweden	STFI-Packforsk
United Kingdom	Fibre Research Consultants Ltd PITA WRAP

4.3 Meetings of the Management Committee

- 30.3.2005 Brussels, Kick off meeting
- 30.6-1.7.2005 Haarlemmerliede, Netherlands
- 28-29.11.2005 Brussels, Belgium

4.4 Meetings of the Working Groups

- All three WGs have met as follows
- 30.6.-1.7.2005 Haarlemmerliede, Netherlands
- 28-29.11.2005 Brussels, Belgium

4.5 Short-term scientific missions

No STSMs during 2005

5. RESULTS

During 2005 the Action has been in its start up phase. At the first joint MC/WG meeting on 30.6-1.7.2005 the participants presented themselves and gave descriptions of their research

activities of relevance to the Action. This compilation provides a good overview of the research activities in Europe, the results of which will be shared in the Action. Furthermore the WGs planned their work for 2005.

At the second set of WG meetings on 28-29.11.2005, the first overviews of ongoing research were presented. In addition to the technical discussions, an important result of this meeting was the agreement of definitions to be used during the Action. Furthermore, a good overview of the legislation concerning recovery of waste paper and its recycling was received.

6. DISSEMINATION OF RESULTS

6.1 Publications and Reports

No publications during 2005

6.2 Conferences and Workshops

Not yet relevant

6.3 Web site

A web site of the Action (www.cost-e48.net) - open to everybody - has been installed in summer 2005. It has been in operation since mid-October 2005. Once fully operational it will contain

- general information (news) as well as dates and venues of planned meetings
- the full text of the MoU
- a chart describing the organisational structure of the Action
- a list of all members
- information concerning the management committee (list of members, agendas and minutes)
- information concerning the working groups (list of members, agendas and minutes)
- publications
- Information concerning STSMs
- FAQs
- Links

6.4 Scientific and Technical Co-operation

See below items 6.5 and 6.6

6.5 Transfer of results

Bearing in mind the special nature of this Action, an important result is that good working relations with the industrial organizations INGEDE and CEPI have now been established. At the Brussels meeting 28-29.11.2005 these organizations gave very good presentations and they confirmed their willingness to participate in and contribute to the future Action activities. This is of utmost importance as they can provide information otherwise not easily available. This is also true for a well known forest industry consulting company Jaakko Pöyry Oy

6.6 Contacts in the ERA

Close contacts are being established with two Integrated Projects in EU FP6, ie ECOTARGET and EFORWOOD as well as with COST Actions E26 and E46. The Action will also follow the development of and contribute to the implementation of the Strategic Research Agenda for the Forest Based Technology Platform as far as paper recycling is concerned.

7. ECONOMIC DIMENSION

A conservative estimate of the total manpower used in the Action during 2005 is 1.5 manyears.

The total amount of funds received from the COST budget during 2005 has been 56146 €

8. SELF EVALUATION (only in the last annual progress report)
Not yet relevant

Action Identification Data

COST Action E48

Title: *Limits of paper recycling*

TC Recommendation: *(day/month/year)*

CSO Approval: *01/12/2004*

Start date: *(day/month/year) (1)*

Duration: *48 months*

Extension: *months*

End date: *29/03/2009*

First MC meeting: *30/03/2005*

Last MC meeting: *(day/month/year)*

Final Report: *(day/month/year) (2)*

Evaluation Report: *(day/month/year) (2)*

TC Evaluation: *(day/month/year)*

Number of signatories: *15*

Signatories and date of signature: *(day/month/year)*

Austria	Greece	Poland 24/05/2005
Belgium	Hungary 25/05/2005	Portugal
Bulgaria 17/02/2005	Iceland	Romania 20/09/20005
Croatia	Ireland 10/03/2005	Slovakia
Cyprus	Israel	Slovenia
	Italy 24/05/2005	
	Yugoslavia	
	Former Yugoslav Rep.of	
	Macedonia	
Czech Rep. 18/02/2005	Latvia 16/02/2005	Spain 18/02/2005
Denmark	Lithuania	Sweden 16/06/2005
Estonia	Luxembourg	Switzerland
Finland 18/02/2005	Malta	Turkey
France 16/02/2005	Netherlands 28/02/2005	United Kingdom 16/02/2005
Germany 16/02/2005	Norway	

Institutes of non-COST countries: *no*

Area: Forests and Forestry Products

Action Web site: <http://www.cost-e48.net>

Chair:

<i>Title, name Mr Jan-Erik Levlin</i>	<i>Tel.: +358-40-5116049</i>
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<i>Postal Address (private) Lentokapteeninkuja 4F</i>	<i>E-Mail:jan-erik.levlin@iki.fi</i>
<i>P.O: code, City00200 Helsinki</i>	
<i>Country Finland</i>	

TC Rapporteur: Piroska Karoly (to be confirmed)

External Evaluator: tbn

External Evaluator: tbn