



Management of Recovered Wood

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Reaching a Higher Technical, Economic and Environmental Standard in Europe

3rd Conference of COST Action E31

2 – 4 May 2007

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Conference Committee:

- Sabrina Schütz-Oberländer, Entwicklungsagentur Kärnten GmbH, Austria
- Gerfried Jungmeier, JOANNEUM RESEARCH, Austria
- Richard Obernosterer, Ressourcen Management Agentur, Austria
- Joachim Reitbauer, Holzcluster Steiermark, Austria

- Genka Bluskova, Forest University, Bulgaria
- Xavier Deglise, Joint Research Unit on Wood Material (LERMAB), Nancy, France
- Arno Frühwald, Federal Research Centre for Forestry and Forest Products (BFH), Hamburg, Germany
- Christos Gallis, National Agricultural Research Foundation (N.A.G.R.E.F.), Greece
- Michael Gann, Dynea, Austria
- Bengt Hillring, Swedish University of Agricultural Sciences, Sweden
- Miha Humar, Ljubljana University, Slovenia
- Marc Van Leemput, Centre Technique de l'Industrie du Bois (CTIB), Belgium
- Alexandra Ribeiro, Universidade Nova de Lisboa, Portugal
- Bojan Srdjevic, University of Novi Sad, Serbia

BACKGROUND

The European Union has set a target to double the share of renewable energy in the European primary energy supply from a level of 6% in 1997 to 12% by 2010. The technical, economic and structural conditions for the use of biomass for energy generation will enable biomass to contribute significantly to this aim. In the Kyoto process the European Union has committed to reduce European greenhouse gas emissions (CO₂, CH₄, N₂O etc.) by 8% from the 1990 level by the year 2010. Energy generated from biomass is able to substitute for fossil fuels used for electricity, heat supply and transportation fuel. One of the most important sources of biomass – in addition to forestry and energy crops - derives from recovered wood at the end of its life (e.g. demolition wood, timber from building sites and the commercial sector).

The two most important management options for recovered wood are:

- Using recovered wood as a material (reuse or recycling as secondary raw material)
- Combustion of recovered wood for energy use (energy generation)

The main objectives of this conference are to present the achievements of the COST Action E31 “Management of Recovered Wood” (2002 – 2007)

- International perspectives on recovered wood
- Management of recovered wood
- Amounts of recovered wood
- Quality aspects of recovered wood
- Energy generation of recovered wood
- Market aspects of recovered wood
- Innovations
- Panel discussion “Perspectives for sustainable use of recovered wood”

PROGRAMME

The duration of the conference is three days and its programme comprises:

- Oral presentations
- Poster exhibition
- Scientific visit to recovered wood processing facilities

The language of the conference is English.

WHAT IS COST

Founded in 1971, COST is an intergovernmental framework for European **Co**-operation in the field of **Scientific and Technical Research**, allowing the co-ordination of *nationally funded* research on a European level. The goal of COST is to ensure that Europe holds a strong position in the field of scientific and technical research for peaceful purposes, by increasing European co-operation and interaction in this field. COST has a geographical scope beyond the EU and most of the Central and Eastern European countries are members. COST has developed into one of the largest

frameworks for research co-operation in Europe and is a valuable mechanism co-ordinating national research activities in Europe. Today it has almost 200 Actions and involves nearly 30,000 scientists from 32 European member countries. Further information is available on <http://cost.cordis.lu>.

WHAT IS COST ACTION E31

The aim of this COST Action E31 “Management of Recovered Wood” is the improvement of the management of recovered wood towards a higher common technical, economic and environmental standard. The 3rd Conference of this action will demonstrate the state of the art management of recovered wood in the COST member states and its future perspectives.

Working Group 1 - European Management of Recovered Wood: Analyses of current systems of wood recovery in Europe for reuse, recycling and energy recovery, e.g. Technical and legal aspects as well as environmental impacts of the management schemes for recovered wood used in the different European countries; Recovered wood potential; Criteria for the choice of recovered wood treatment option; Logistics and infrastructure of waste management options.

Working Group 2 - Treatment Options for Recovered Wood: Analysis of current and future treatment options for recovered wood based on technical, economic and environmental criteria, e.g. Preservatives, treatments and coatings on recovered wood; Technologies for energy generation; Social, economic and environmental benefits/impacts of reuse, recycling, combustion, composting and landfill of recovered wood.

Further information about Cost Action E31 see http://www.ctib-techn.be/coste31/frames/F_e31.htm

Scope of Recovered Wood in COST Action E31

Recovered wood covered by the scope of COST E31 includes all kinds of wooden material that is available at the end of its use as a wooden product (“post-consumer” or “post-use” wood). Beside forest residues and energy crops, recovered wood is one of the most important renewable sources of biomass and as a renewable raw material and energy carrier. Recovered wood mainly comprises packaging materials, demolition wood, timber from building sites and fractions of used wood from residential, industrial and commercial activities.

Therefore all wood grades from forestry residues including tops, thinnings and branches from forest operations are excluded as they are not in the scope of COST E31. Black liqueur from pulp production is also not within the scope of COST E31.

Recovered wood is described by the following origins: saw mill, wood manufacturing industry, particle board industry, pulp and paper industry, construction and demolition activities, residential and commercial sectors, packaging.

The most important parameters describing recovered wood are size, quality properties, condition, heating value, moisture content, content of chlorine, ash, contamination and heavy metals.

PROGRAM

Wednesday 2 May 2007

9⁰⁰ – 9³⁰ Welcome and Introduction **Welcome by national organisers**

Representative of COST
Representative of the Carinthian Government

Overview and Achievements of COST Action E31 “Management of Recovered Wood”

Gerfried Jungmeier (A), Christos Gallis (GR), Bengt Hillring (S), Mihar Humar (SLO), Arno Fruehwald (GER)

9³⁰ – 11⁰⁰ International Perspectives on Recovered Wood

Recovered Wood Management and the Swiss Greenhouse Gas Balance - Model-based Assessment of Different Forest and Wood Use Scenarios

Frank Werner (CH)

Management of Recovered Wood in Japan

Bunichiro Tomita (JP)

Issues Related to the Use and Disposal of Treated Wood in Florida

John D. Schert (USA), Helena Solo-Gabriele (USA), Timothy Townsend (USA)

11⁰⁰ – 11³⁰ Break and poster session

11³⁰ – 13⁰⁰ Management of Recovered Wood

Chaired by Xavier Deglise (F)

Terminology for Recovered wood in the forest product chain – a scientific perspective

Torbjörn Okstad (N)

Management Systems for Recovered Wood in Europe

Bojan Srdjevic (CS), Bengt Hillring (S), Christos Galis (GR), Olle Olsson (S)

13⁰⁰ – 14⁰⁰ Lunch

14⁰⁰ – 15³⁰ Amounts of Recovered Wood

Chaired by Bojan Srdjevic (CS)

Amounts of Recovered Wood in COST E31 Countries and Europe

Adolf Merl (A), Miha Humar (SLO), Torbjörn Okstad (N), Valez Picardo (IRE),
Alexandra Ribeiro (P), Florian Steierer (GER)

Benchmarking Tool for Waste in Construction & Demolition

Katie Livesey (UK), Amanda Conroy (UK)

Logistic Aspects for Collection and Use

Raimund Ziegler (A)

15³⁰ – 16⁰⁰ Break and poster session

16⁰⁰ – 17³⁰ Quality Aspects of Recovered Wood

Chaired by Richard Obernosterer (A)

Remediation of CCA treated wood waste

Miha Humar (SLO), Alexandra Ribeiro (P), Sam A. Amartey (UK), Lieve Helsen (B),
Lisbeth Ottosen (DK)

Detection Methods in Practical Application

Monika Vogt (GER), Michael Gann (A), Mark Irlé (F)

Toxicological Aspects of Recovered Wood

Michael Gann (A)

**19³⁰ Dinner (on the Steamboat DS Thalia on the Wörthersee,
<http://www.stw.at/inhalt/Thalia.htm>)**

Thursday 3 May 2007

9⁰⁰ – 10³⁰ Energy generation of Recovered Wood

Chaired by Miha Humar (SLO)

**General overview on combustion and energy generation technologies for
Recovered Wood**

Jarle Svanaes (N), Jungmeier Gerfried (A), Bengt Hillring (S)

Co-incineration of CCA-treated wood and Municipal Solid Waste

Dag Borgnes (N), Bente Rikheim (N)

The Influence of the Degree of Contamination of Wood Waste with Urea-Formaldehyde Resins on the Emissions of gaseous combustion products during burning in Low-Power Boiler

Wojciech Cichy, (PL), Włodzimierz Prądzyński (PL)

Thermo-chemical Conversion of Recovered Wood

Xavier Deglise (F), André Donnot (F), Anthony Dufour (F)

10³⁰ – 11⁰⁰ Break and poster session

11⁰⁰ – 12³⁰ Market Aspects of Recovered Wood

Chaired by Christos Gallis (GR)

Markets for Recovered Wood in Europe – An Overview

Bengt Hillring (S), Genoveva Canals (ES), Olle Olsson (S)

Markets for recovered wood in Europe: Case Studies for The Netherlands and Germany based on The BioXchange project

Mark van Benthem (NL), Nico Leek (NL), Udo Mantau (GER), Holger Weimar (GER)

Management of Wood Residues and Recovered Wood in Latvia

Karlis Dauge (LV), Arnis Treimanis (LV), Aija Budreiko (LV)

Reuse, Recycling and Energy Generation of Recovered Wood from Building Constructions – Showcase Vienna

Adolf Merl (A)

12³⁰ – 13³⁰ Lunch

13³⁰ – 15⁰⁰ Innovations

Chaired by Alexandra Ribeiro (P)

The Status of Recovered Wood in Croatia after the Legislation

Radovan Despot (CRO), Marin Hasan (CRO)

Synthetic transportation fuels from wood: Technology, prospects and applications

Stefan Fürnsinn (A)

A Substance Flow and Stock Analysis Approach towards Definition of Sustainable Design Criteria for Wooden Products

Richard Obernosterer (A), Gerfried Jungmeier (A), Raimund Ziegler (A), Gerald Kropfitsch (A), Bernd Brandt (A), Adolf Merl (A), Ingrid Kaltenegger (A), Genoveva Kocher (A), Joachim Reitbauer (A)

15⁰⁰ – 15³⁰ Break and poster session

15³⁰ – 17³⁰ Future Perspectives and Summary

Round Table Discussion “Perspectives for sustainable use of recovered wood”

Closure of the Conference

Gerfried Jungmeier, Chairperson of Cost Action E31 (A)

Poster Session

The Influence of Composts obtained from Composite Wood Waste and Post-Use Wood on Plant Growth

Hanna Wróblewska (PL), Magdalena Czajka (PL)

Research on combustion of solid biofuels from recovered wood in low-power boilers

Wojciech Cichy (PL)

Recycling and reuse of wooden packaging in Wielkopolska Region by way of Grabowski company example

Wojciech Cichy (PL), Bogdan Grabowski (PL)

Hydrolysis of the Adhesives and Reconditioning of compressed Wood-Cells During Recycling of Particleboard and Fiberboard by Hydrothermal Process

Tibor Alpár (HU), Yasunori Hatano (JP), Tatsuya Shibusawa (JP)

Friday 4 May 2007

9⁰⁰ – 17⁰⁰: Scientific visits (Particle Board Industry, CHP with Wood Chips and Wood Competence Centre)

February 15th, 2007