

ENERGY WOOD PRODUCTION CHAINS IN EUROPE

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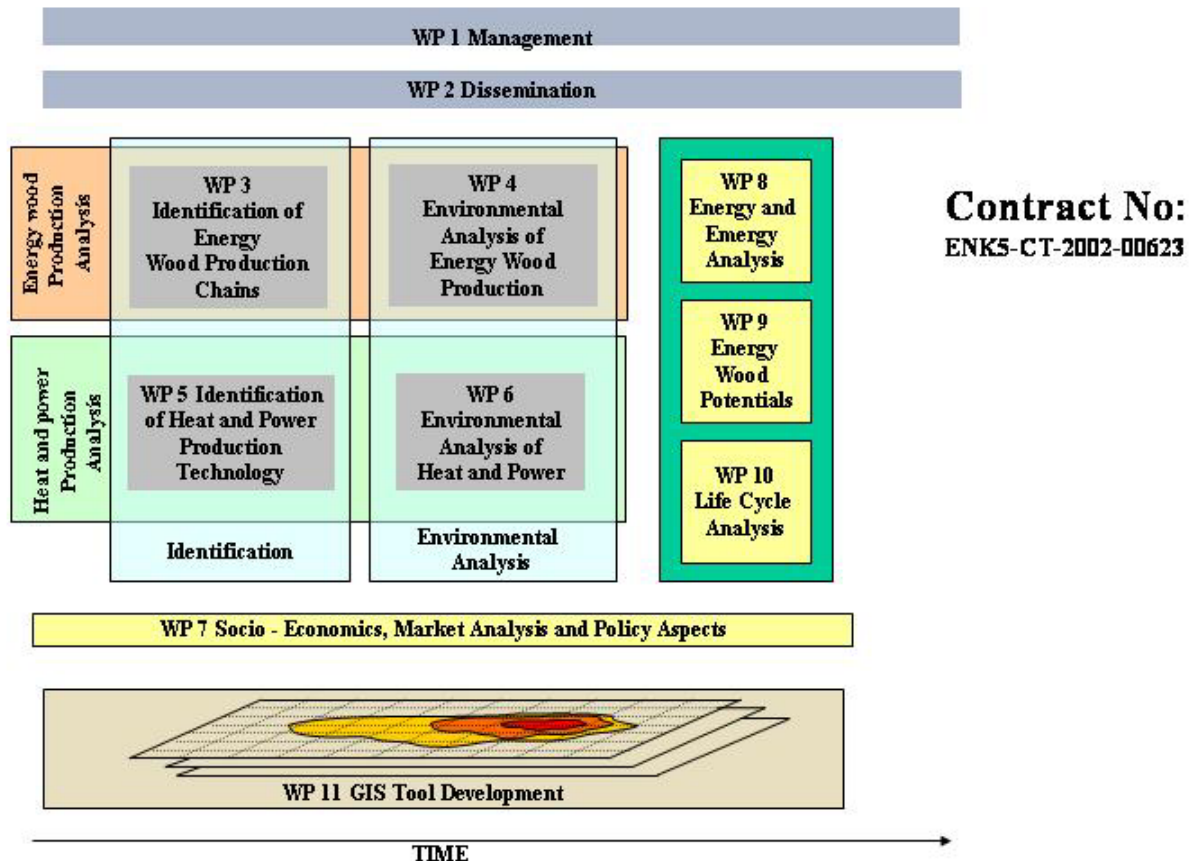


**BIO-ENERGY
ENLARGED PERSPECTIVES**

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ECHaine PROJECT IDEA

Energy Wood Production Chains in Europe - ECHaine



WHAT IS AN ECHAIN ?

**"AN ECHAIN IS A
CHAIN OF
OPERATIONS
FROM THE
ENERGY WOOD
SOURCE TO END
USE"**



Figure by Katariina Karjalainen

THE MAIN GOAL

The main goal of the ECHaine - project is to provide data and deal with the key issues in the identification and evaluation of efficient and socio-economic, environmentally friendly chains for collection and utilisation of energy wood sources for heat and power purposes (e.g. applications such as heat only, co-firing and CHP) in Europe.

OBJECTIVES

- **Optimisation of energy wood production and utilisation chains**
- **Reduction of production costs for heat and power**
- **Improve production and utilisation systems regarding their environmental friendliness**
- **Improve public acceptability of the renewable energy sources**
- **Creation of market opportunities**
- **Promote sustainable development**

INNOVATION

- **Results from the ECHaine-project and synergetic interactions, can in many cases be translated into the other EU countries. This fact can lead to increased export of goods and services from the EU. One of the important goals of the Fifth Framework Programme is to create market opportunities for the Union members.**
- **The ECHaine holistic approach to the energy wood problem, taking into account the components that play an important role in the energy wood production and utilisation chains using an innovative methodology to face the problem.**
- **The ECHaine project will also give a new knowledge of factors which influence the public perceptions on the use and management of forests and on their role in the society, such as acceptability of the renewables, e.g, energy wood.**
- **Also to be considered are cost effective forestry management and multifunctional use of forest resources ensuring proper levels of biodiversity.**

ECHANE CONTRIBUTES TO SEVERAL EU- POLICIES

- **GHG Emission Reduction**
- **Security and Diversification of Energy Supply**
- **Rational Use of Energy and Renewable Energy Sources**
- **Social Objectives, such as Improving the Environment, Quality of Life and Employment**

ECHaine PARTNERS

1. **Swedish University of Agricultural Sciences, Department of Bioenergy, Sweden**
2. **Centre for Research and Technology Hellas / Institute for Solid Fuels Technology and Applications, Greece**
3. **University of Oulu, The Thule Institute, Finland**
4. **Center for Renewable Energy in Greece, Greece**
5. **The Agricultural College of Beja, Portugal**
6. **The Fraunhofer Institute, Department of Environmental Engineering, Germany**
7. **The Centre for Energy Policy and Economics, Switzerland**
8. **Sema Group sae, SchlumbergerSema plc, Spain**
9. **The Technical University of Sofia, Bulgaria**
10. **Oskar von Miller - Conception Research and Design Institute for Thermal Power Equipment, Romania**

EXPECTED RESULTS

The project will result in:

- A review of energy wood production chains and energy wood based heat and power production in Europe.
- Market and policy analysis of energy wood and energy wood based heat and power production concerning drivers and barriers.
- LCA analysis of energy wood production and energy wood based heat and power production.
- Energy and emergy analysis of energy wood production and utilisation chains.
- A description of selected flagship projects across Europe.
- Spatial distribution of energy wood resources.
- Links with international organisations.
- Co-operation between EU and Eastern European countries.
- Dissemination of the results by scientific publications, open seminars, workshops, educational and training activities as well as by development of a web-site including an integrated interactive geographical information system (GIS) application.

PREVIOUS ACHIEVEMENTS

The project has been running one year now

The first year has been used for data gathering and basic project activities:

- Get the web-page running
- Publish presentation material of the project
- Gather spatial and other data
- Launch field test activities
- Identification of influencing variables, production technology, drivers and barriers

The project is now entering in an analysis phase:

- Choose flagship installations / production systems
- Launch questionnaires for different purposes
- Launch the first GIS application prototype
- Start the analysis work on several levels within the WPs
- Arrange a work shop (Bulgaria, 2004)

FUTURE CHALLENGES

Project:

- Different countries – Different systems
- Drivers and barriers
- Evaluation methods

Country:

- Technology transfer between countries
- Local conditions
- Logistics
- Market

EU:

- Acceptability of the renewables
- Legislation
- Co-operation to avoid parallel research
 - Networks of excellence
 - Integrated projects

ECHAINS

SMALL-SCALE PRODUCTION SYSTEM



Figure by Katariina Karjalainen



Figure by Katariina Karjalainen

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LARGE-SCALE PRODUCTION SYSTEM

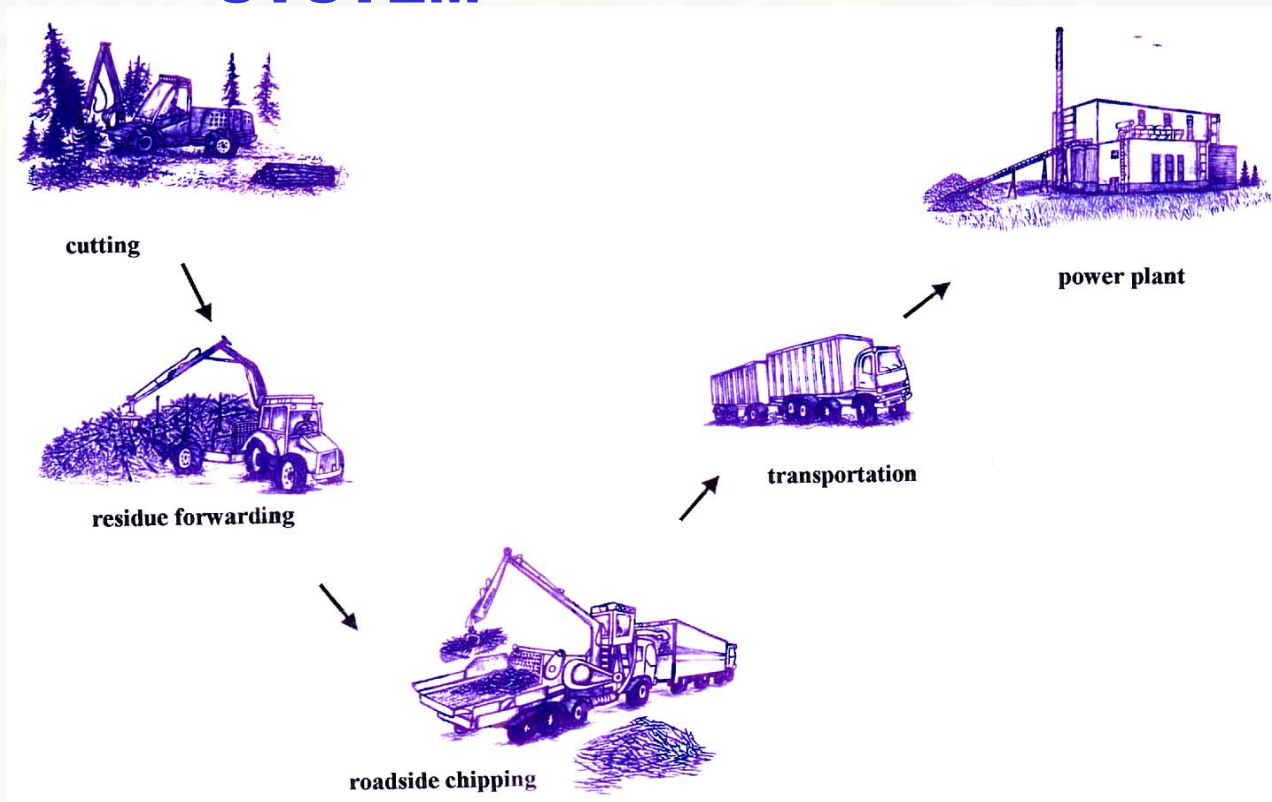


Figure by Katariina Karjalainen

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SMALL-SCALE PRODUCTION SYSTEM



Photo by Matti Parikka

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LARGE-SCALE PRODUCTION SYSTEM



Photo by Veijo Leiviskä



Thank You for Your Attention