Promoting the production and utilisation of energy crops at European level

ENCROP

- Contract number EIE/07/073/S12.567608
- Begins in October 2007 and lasts 34 months (July 2010)
ENCROP aims to increase the production and utilisation of lignocellulosic energy crops at European level

Participating countries are Spain, Italy, Germany, Austria, Sweden, Finland (coordinator) and Belgium as the host of the European Biomass Association (AEBIOM)
To increase the use of biomass utilisation is one of the main objectives of European Union energy policy. There are several limitations in energy crop production and utilisation as energy source, such as:

- lack of technologies, facilities and practical knowledge in different levels of energy production chain (from cropland to end-users)
- insufficient collaboration between producers, suppliers and end-users
- unawareness of best available practices and techniques
- taxation, subsidies and other legislative matters compared to alternative energy sources
- lack of suitable business and contract models
- common acceptance of energy crop utilisation is not adequate

Project aims to reduce the limitations in energy crop business.
ENCROP objective

- Project objective is to **promote the production and utilisation of lignocellulosic energy crops** at European level
- ENCROP aims to boost energy crop business by
  - Increasing the general knowledge, awareness and acceptance about energy crops
  - Disseminating the know-how and results gained in the recent r&d activities
  - Promoting the confidence and collaboration between the actors of energy production chain
  - Developing crop-to-energy business and contract models
  - Dissemination of information about energy crops
ENCROP activates…

- Bringing together the actors from different parts of crop-to-energy production chain → better confidence between the suppliers and byers
- Improving the public acceptance of energy crop utilisation
- Disseminating the know-how and results gained in the recent r&d activities
- Construction the contract models for crop-to-energy business chain
- Advisory services for existing and potential actors in agrobiomass business
- International seminar
- National and regional seminars as well as regional demonstrations
- National info events
- International study tours
- Short training courses
- Handbook for investors and major users of agrobiomass (national and international version)
- Website including useful information about energy crop utilisation and business
- Information dissemination, such as leaflets, DVD, articles, presentations etc.
ENCROP corps and conversion processes

ENCROP is targeted in different crops in the partner countries. The main lignocellulosic energy crops and principal conversion processes are introduced in the following matrix:

<table>
<thead>
<tr>
<th>Country</th>
<th>Main crops of interest</th>
<th>Principal conversion process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>Reed canary grass</td>
<td>Direct combustion</td>
</tr>
<tr>
<td>Sweden</td>
<td>Reed canary grass</td>
<td>Direct combustion</td>
</tr>
<tr>
<td>Germany</td>
<td>Maize, rye grass</td>
<td>Production of biogas</td>
</tr>
<tr>
<td>Austria</td>
<td>Maize, corn, grass, sunflower</td>
<td>Production of biogas</td>
</tr>
<tr>
<td>Italy</td>
<td>Poplar, black locust, fibre sorghum</td>
<td>Direct combustion</td>
</tr>
<tr>
<td>Spain</td>
<td>Poplar, straw</td>
<td>Direct Combustion</td>
</tr>
</tbody>
</table>
ENCROP activities
Facilitating market development

- **Creation of groups of producers and user of agrobiomass**
  - Meetings 2-3 times during the project
    - Identification of agrobiomass fuels and plant capacity available
    - Supporting the development of confidence between energy crop suppliers and buyers
    - Promoting the contract making

- **Assessment of potential business models**
  - Existing business models for agrofuels are collected and described
  - 1-3 contract models are developed and adapted to the local business conditions

- **Advisory services of energy crop business**
  - General business/contract models for group members (formed in earlier task)
  - Individually tailored services to people and companies intending to enter the energy crop business
**ENCROP activities**

**Demonstrations, seminars and study tours**

- **International seminar**
  - Organised in Poland, duration two days + study tour
  - Theme: Promoting the production and utilisation of energy crops at European level by increasing the knowledge of ecological, technical, economical, logistic and administrative matters related to energy crop production and utilisation
  - Participants: different actors involved in crop-to-energy production chain
  - The recommendations focused on legal, technical and environmental aspects for further development of energy crop production and utilisation in Europe are formed in this seminar
ENCROP activities
Demonstrations, seminars and study tours

- **National seminars**
  - Organised in partner countries (Finland, Italy, Germany, Spain, Austria, Sweden)
  - Theme: the technical and economical viability, fuel handling in practice, agrobiomass combustion properties, successful examples and technical challenges in the energy utilisation
  - Target: to present the best practices and operational models as well as good experiences in different countries and to facilitate the transfer of technology and know-how from one country to another
  - Participants: energy producers (technical and commercial manager) and plant operators (managers responsible for procurement and logistics of fuels)

- **Regional demonstrations and seminars**
  - Organised in partner countries
  - Themes: harvesting, cultivation, baling, chopping, energy production technology
  - Participants: farmers and rural SME’s (e.g. machinery contractors)
ENCROP activities

Demonstrations, seminars and study tours

- **National info events**
  - Including Info day and study tour (total duration one day)
  - Organised in partner countries
  - Theme: agrobiomass production and utilisation
  - Participants: potential users of agrobiomass (CHP, DHP, heating plants)

- **Two international study tours (duration 2-3 days)**
  - Organised in Austria/Germany and Finland
  - Theme: agrobiomass production and utilisation
  - Participants: energy producers, such as persons responsible for fuel procurement

- **Short training courses (duration half-a-day)**
  - Two courses organised in each partner country
  - Theme: the best practices and good experiences
  - Participants: managers responsible for procurement and logistics of fuels
ENCROP activities
Information dissemination

Handbook for investors and major users of biomass – six national versions and one international version. It includes the technical and practical knowledge of energy crop utilisation and gives practical guidance for investors and plant operators

- **National handbook** (Swedish, Italian, German, Spanish, and Finnish)
  - Describes in detail the energy crop production chain, covering cultivation, harvesting, storage, pre-treatment, logistics, conversion to energy
  - Biomass potential
  - Practical examples
  - Best practices and good experiences

- **International handbook**
  - Covers the crop utilisation that are relevant in European level
  - Energy crop potential in Europe
  - Cases from partner countries
  - Current utilisation and future development
ENCROP expected results

- Increased knowledge on the ecological, technical, economic, logistic and administrative matters
- New solutions to the bottlenecks in energy production chain are identified
- Establishment of more efficient energy crop production chains
- Public acceptance of energy crop utilization has been improved

More efficient energy from crops
Partners & Contact

Project partners
- Jyväskylä Innovation Ltd/ BENET Bioenergy Network, co-ordinator (Finland)
- ETA, Energia, Transporti, Agricoltura srl (Italy)
- GERBIO, German Society for sustainable Biogas and Bioenergy Utilization (Germany)
- ESCAN, S.A. (Spain)
- University of Agricultural Sciences; Unit of Biomass Technology and Chemistry (Sweden)
- Universität für Bodenkultur Wien (Austria)
- European Biomass Association, AEBIOM (The European Biomass Association)
- Agrifood Research Finland (Finland)

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