

Overcoming Barriers for Bio Energy

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BIO-ENERGY
ENLARGED PERSPECTIVES

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Change in the use of Bio Energy in Europe

- The use of biomass for energy purposes is of long standing in Europe
- Later on: use of the secondary products from the conversion of timber
- Increased interest in RES in the middle of the seventies (oil-crisis)
- At present: replacement of the fossil fuels
→ environmental and eco-social effects

The barriers for Bio Energy

Scale of RES in national energy balance is different in the European countries because there are various barriers:

- Shortcomings in the knowledge of basic materials
- Special technical problems
- More strict environmental regulation
- Diversified growing methods based on the variety of the geographical, climatic and other conditions

The barriers for Bio Energy

- Protection of interests in the industrial sector producing and distributing fossil energy
- Setting the bio energy against the short-term national energy policy
- The non-recognition of the important role of bio energy concerning
 - the employment in rural areas,
 - the sensible way of farming,
 - the balancing of agricultural production

Poor knowledge on the bio-materials

Organic materials may be considered as:

- Primer biomass: from wood pulp
- Secondary biomass: produced by the consumers feed on primer biomass
- Tertiary biomass: from the conversion of the primer and secondary biomass

From energetic point of view the primer biomass (lignocelluloses) are the most important, although the increase of the used amount of the tertiary biomass concerning the biogas-production is considerable.

Poor knowledge on the bio-materials

The wood has been used since the ancient times, still there are just few data available on its chemical compounds which is basic information for energetic utilization.

- need for data on chemical compounds - important for energetic utilization, designing
- need for data on elements of great environmental importance (K, Cl, S, P)
- need for standardisation
- different element-concentrations in woody and herbaceous plants, even in the single species → different energetic attributes

Special technical problems

Methods of using biomass for energy purposes: firing, thermo-demolition, fermentation. By the utilization of new kind of lignocelluloses (energy-wood, straw, reap stalk, energy-reed, energy-grass, etc.) several problems has appeared:

- use of new kind of lignocelluloses – problems in homogenization, mechanized storage, automatized feeding
- complicated technical background → greater investment required
 - special chopping and feeding apparatus
 - controlling the air-supply
 - firing bale or chips?

→ further technical developments are expected in the future

Strict environmental regulation

- preparatory experiments (testing of materials) are expected
- for further technical development
 - for planning or selection of the proper firing apparatus

Diversity and adoption of the scientific achievements

It is impossible to adopt project results without supplementary experiments, because

- the chemical characteristics of the bio-fuels are all depend on the chemical compounds of the production site
- the variety of the geographical, climatic and other conditions result in different chemical characteristics

→ examinations on the place, – site, agro-technology, plant protection methods (and raw materials) are expected

Protection of interests in fossil energy

The followings may have influence on the spread of bio-energy:

- the way of reception the RES
- the lobbies for fossil energy / for the other RES
- traditional energy sectors can hinder the use of biomass by using market tools (price reduction)
- overstate of fictitious or real environmental problems of bio fuels
- opinions referring only to disadvantages of biomass
- dissemination of poor opinion on biomass
- counterblasts of the representatives of other RES

Bio energy and the short-term national energy policy

Sort of country	Role of the bio-energy
Developing countries	Significant
Developed countries	Financial support for the use of biomass for energy purposes
Intermediate (technologically-economically less developed) countries	Less money on environmental issues, stand in need of inland revenue from the use of fossil energy

Setting the bio energy - which is not economical from all aspects - against the short-term national energy policy and tax-centric energy supply system restrain the spread of bio-fuels.

Interim economical problems

The biomass-based power generation may get into disadvantage in the market on more scores:


- Bio energy plants generating cheaper energy cannot be realized because of the lack of a great capital needed for the investments.
- The retail prices of fossil fuels may be diverted from their real price by the government.
- Taxes made for transferring the environmental costs of power generation into the fuel prices are just rarely involved in the prices.

Non-recognition of the benefits of bio energy

Governments have to realise that the energetic utilization of biomass serves also purposes concerning

- the environmental protection,
- the development of rural areas,
- manpower management (decrease of unemployment – new workplaces)
- and the rational way of land-use.

Consequently, the use of biomass for energy purposes generates additional benefits which can compensate the indirect economical effects.



Thank you for your attention