

WORKSHOP PRESENTATION



“BENCHMARKING AND GUIDELINES FOR STREAMLINED AUTHORISATION
PROCESSES FOR BIOENERGY INSTALLATIONS”



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13th June 2008

Bioethanol



TOPICS

1. Partners

2. SHORT BACKGROUND

3. “*Bio Ethanol situation*” in Hungary

4. Financing

5. Approval Processes

- Building approval process
- Environmental approval process

6. Infrastructure

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Our partners in Hungary



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Bioethanol



What is Bio-ethanol ?

„Bio-ethanol“:

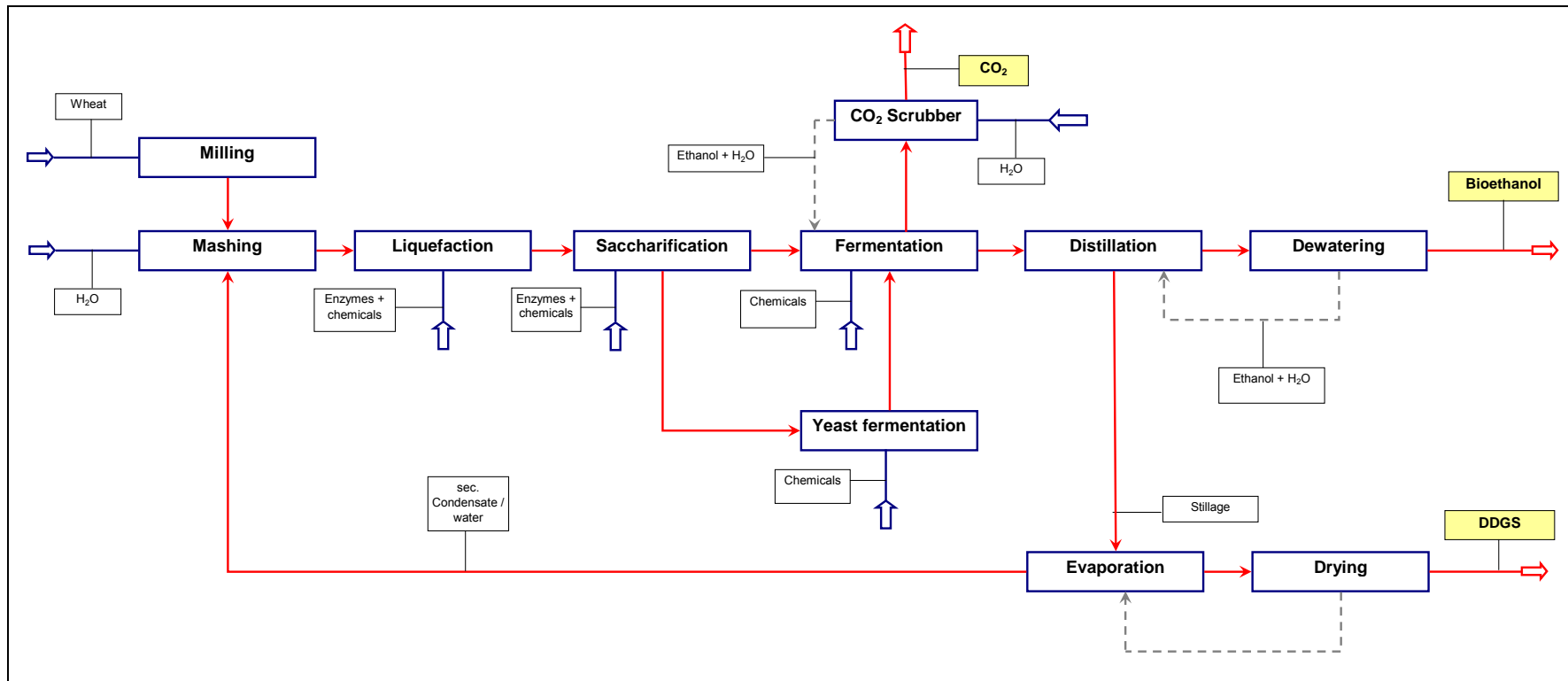
Ethanol, made of biomass and/ or the biologically degradable part of waste; supposed for the use as bio fuel



Bioethanol



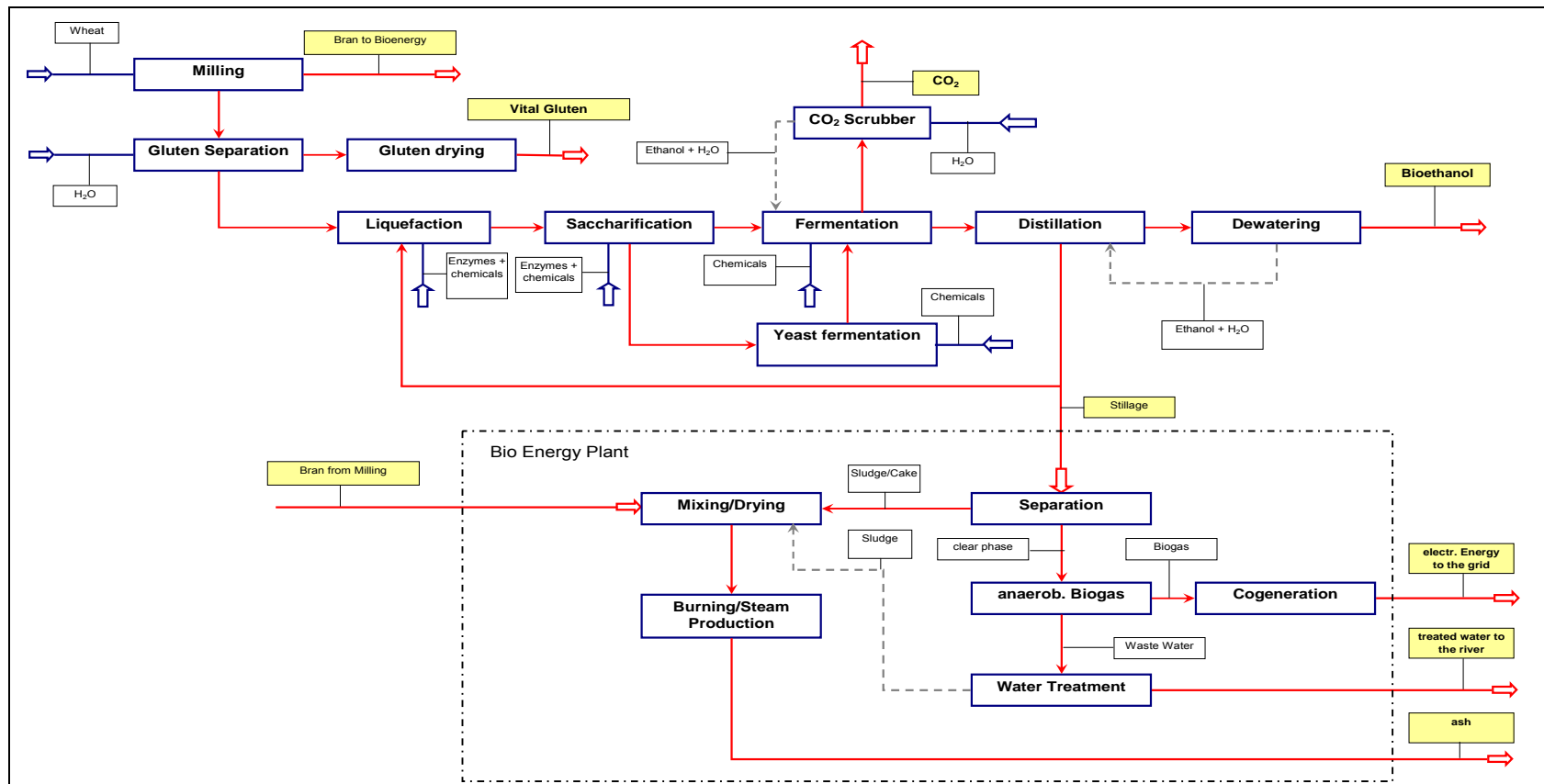
Classical Bio Ethanol Production



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Refining



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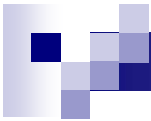


Destiny of by-products

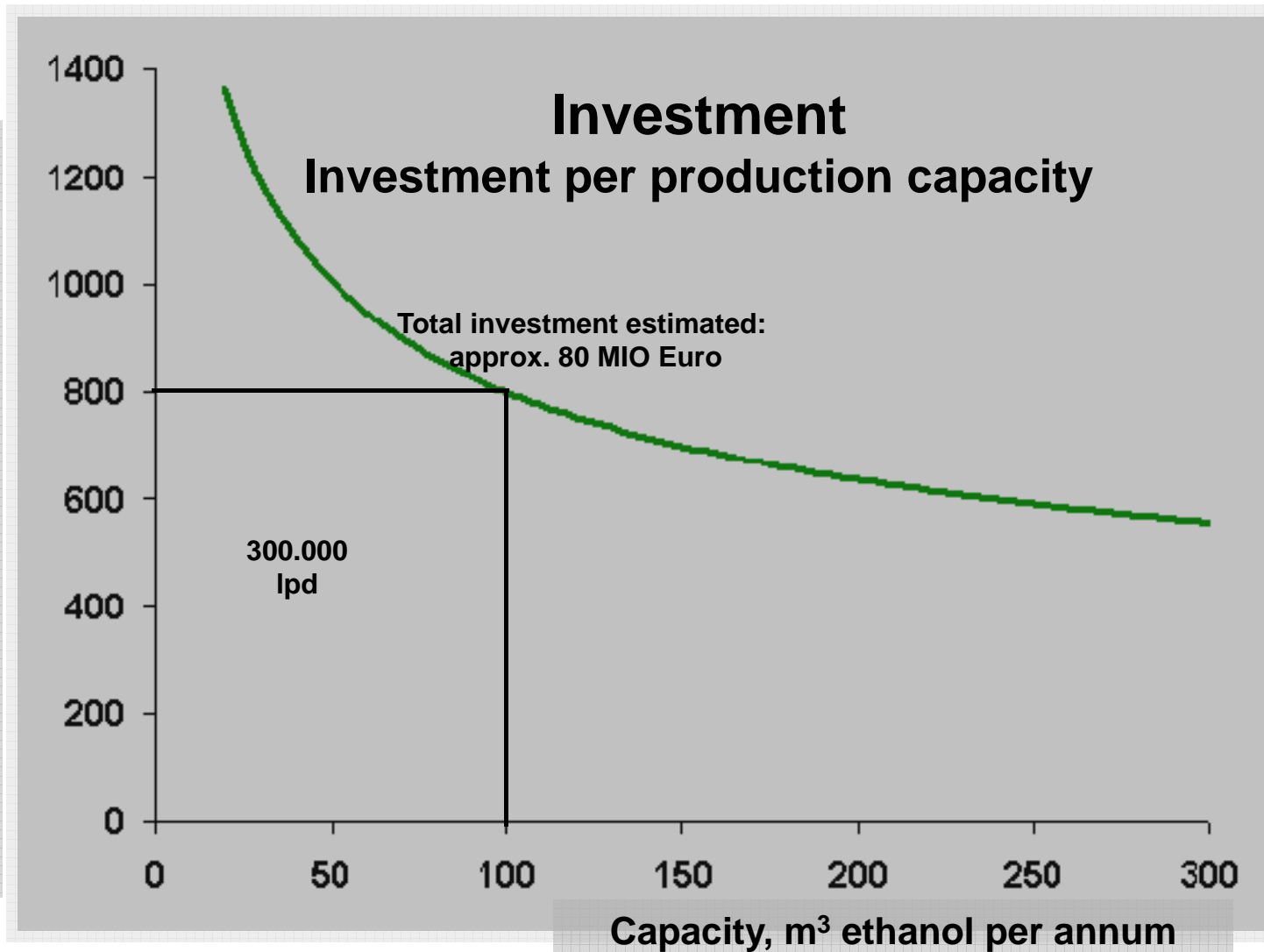
1. Traditional DDGS production
2. Converting all biomass into energy
 - a. Biogas → Electricity, Steam, Fertilizer
 - b. Burning → Electricity, Steam
 - c. Combination of a.) and b.)
3. Production of food products
4. Bio-ethanol, 2nd generation cellulose based

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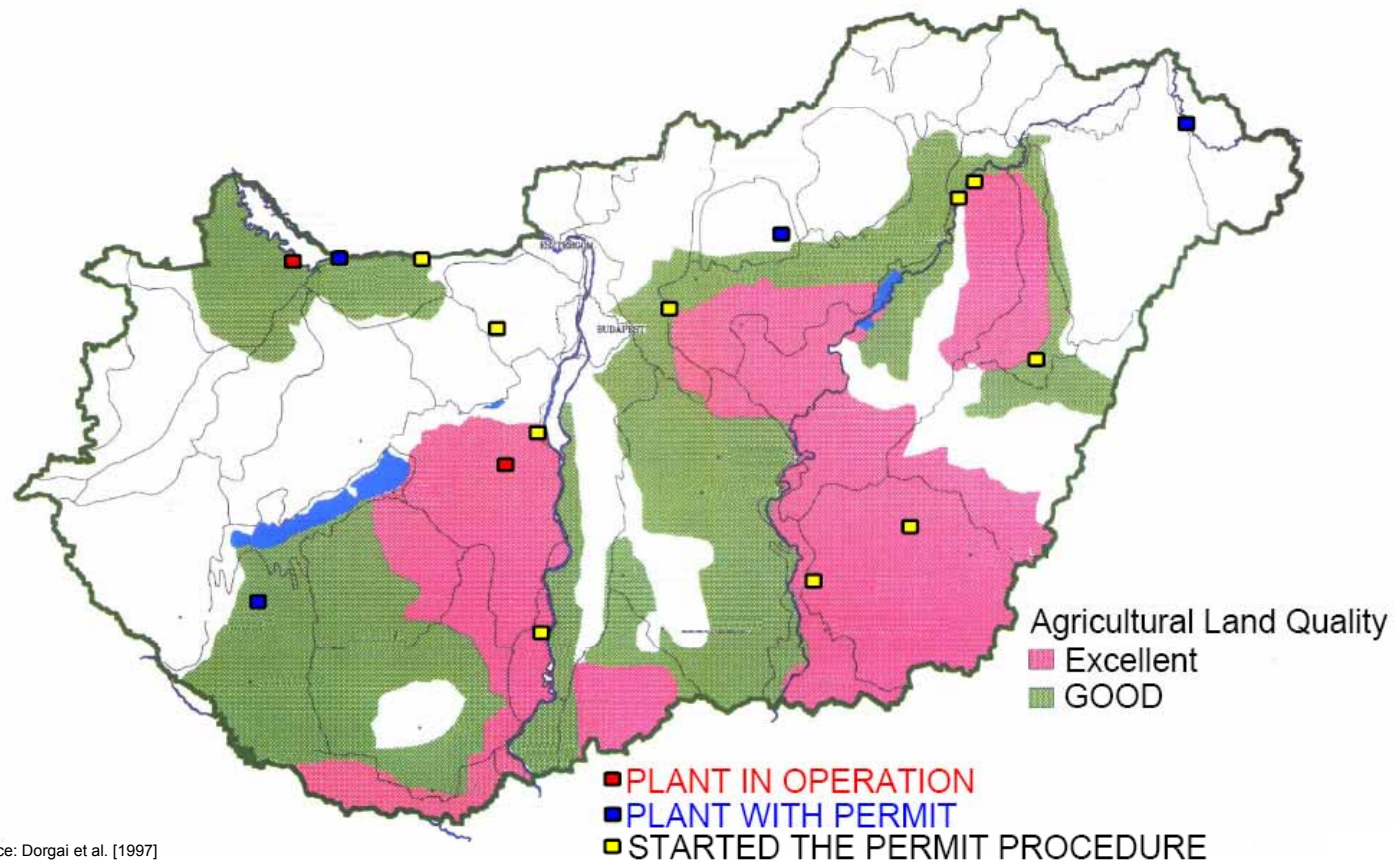
Cost per 1000 m³ per annum, 1000 €



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The Optimal Corn Production Areas in Hungary



Source: Dorgai et al. [1997]

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Bio Ethanol Plants in Hungary

Announced Plants

Almásfüzitő, Dunnaalmás,
Gyöngyösharaszti, *Csenger,*
Hajdúsámson, Tápiószele,
Kőszeg, Polgárdi,
Martfű, Dunaföldvár,
Sarkad, *Békéscsaba,*
Kiskőrös, *Orosháza,*
Kalocsa, Mezőhegyes,
Csurgó, Bácsalmás,
Nagybaracska, *Mohács,*
Helvécia, Szeghalom

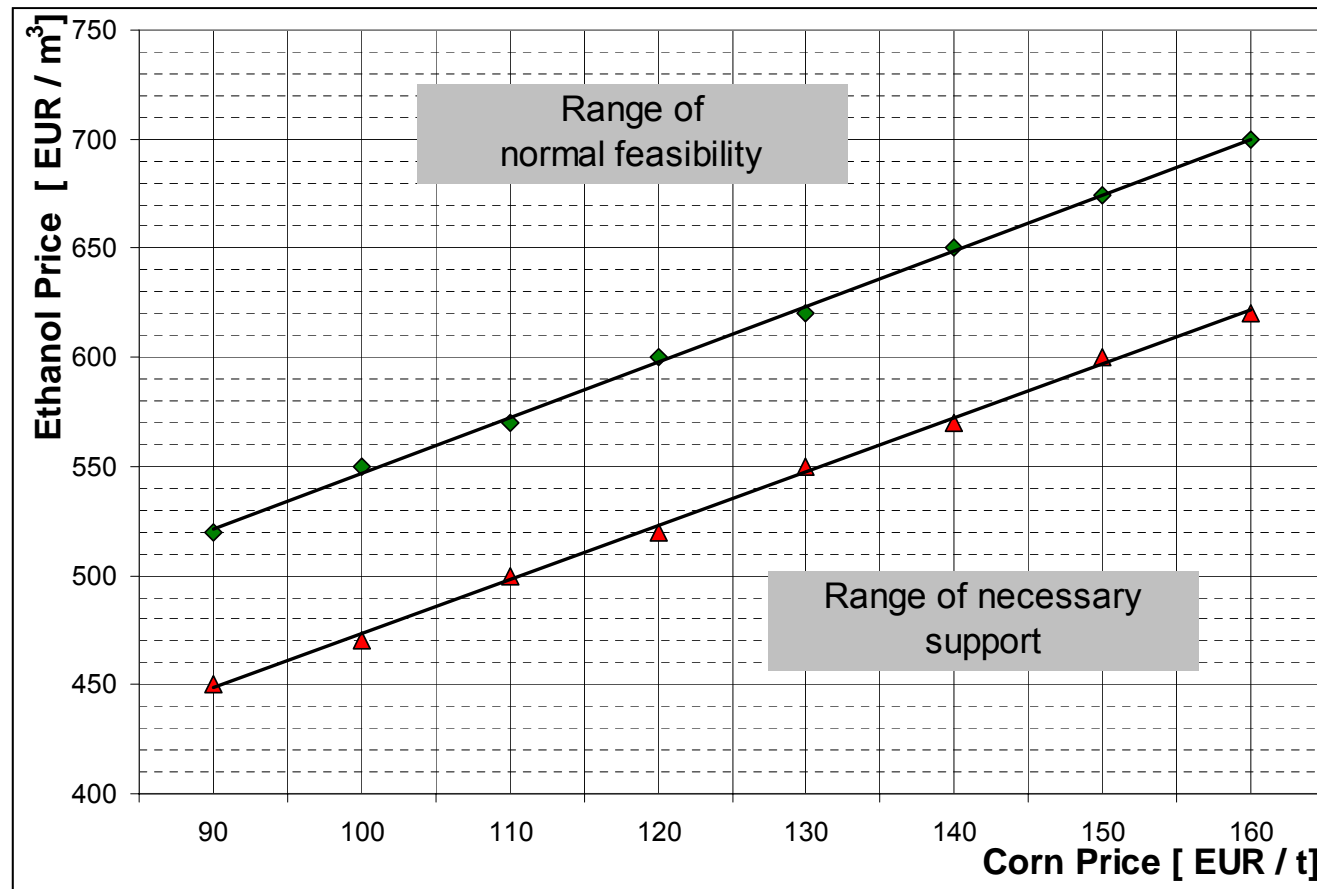
Started the approval procedure

Gönyü, Marcali,
Szentés, *Győr,*
Szabadegyháza, *Visonta,*
Vásárosnamény, *Almásfüzitő,*
Bicske, Vácszentlászló,
Tiszaújváros, Tiszapalota,
Kaba, Adony,
Csabacsüd, *Fadd-Dombori*

4 Plant has an approval
2 plant in operation



The Feasibility Range of Bio Ethanol Project



Source: MBSZ

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Financing

Difficulty:

The **financing** of bio-ethanol projects are depending on willingness of commercial banks to assume risks.

Additional safety requirements:

Because the renewable energy projects are brand new and risky investments therefore the banks would like to receive an **exaggerated guarantee up to 100%** from the investor or from the general contractor.

Possible Solution:

EIF (European Investment Fund) or Governmental Institutions should grant **a kind of background guarantee** for the renewable energy projects.



Financing

Use of Carbon Voucher

For the financing the owner should be in the position to use the CO₂ voucher as part of own capital.

Engineering Plans

MKEH (Hungarian Trade Licensing Office) requests for approval process very detailed plant engineering.

Owners can not purchase such engineering because banks do not accept it as own capital.

The banks should accept the engineering necessary for approvals as own capital.

Guarantee

The banks should accept international common project and performance guarantees. Increased safety requirements are endangering renewable energy projects.

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Approval Process

**ON NATIONAL AND EU LEVEL THE REGULATIONS
MUST BE STANDARDIZED AND NORMATIVE**

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Approval Process (building approval)

Difficulty:

- the bio-projects are in the **same category** with the **chemical industrial plants**
- long procedure **duration**
- different regional authority = **different resolution**

Possible Solution:

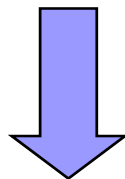
- **Separate deal** with the „bio-permits“
- Renewable energy projects (bio-ethanol, biodiesel, biogas, biomass for energy etc.) should be clarified as **agricultural processing** plant.
- For the permit has to the followings:
 - **civil details** of the buildings with layout
 - raw material **input**
 - product, by-product **output**
 - **emissions**, pollutions (based on an existing technology)



Approval Process (environmental approval in practice)

The necessary steps for the environmental approval

1. Preliminary Study of Environmental Effects (EVD)
2. Integrated Pollution Prevention and Control (IPPC)
3. Environmental Assessment (KHV) – **IF THE AUTHORITY REQUIRES**



13 – 15 Month

Difficulty:

- Long and unclear approval procedure \Rightarrow not favorable for investor site
- There is NO clear classification of bio-plant
- There is no reference plant in Hungary for the new technology – bio-plant with co-generation.
- There is no adequate information to public

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Approval Process (technology)

Not easy to decide which solution shall apply –

Open question: What shall be done with Stillage?

Biogas

Problem with green electricity supply.

*Electric power supplier decide where they take over the electricity ⇒
high investment costs of electricity line to connection point*

DDGS

Use mostly an external fossil energy for steam & electricity production

Incalculable market

*Future: New technology of Frings Austria group do not use any fossile energy
any more for production process*

Burning

Big energy demand for drying, special design of steam generation boiler

Future: High energy demand is covered by waste energy

Combine the solutions

*High investment costs but **NO** fossil energy consumption.*



Approval Process

Question of the waste from biogas production – product, by-product or waste ?

Possibilities:

1. *Compost shall be classified as a **PRODUCT – BIOFERTILIZER***
2. *All residues shall be classified as a **NON DANGEROUS WASTE** suitable for agricultural use*
1. *Filtration residues – **LIQUID BIO-FERTILIZER***
2. *Cleaned waste water – recycling as **PROCESS WATER** to technology*



Infrastructure

Tasks of government

The bio-ethanol technology is a water-intensive technology!

The local sewage farms are not able to deal with the produced waste water from bio-technology plant

⇒ High investment costs for bio-project investors

Separate approval procedure for the local sewage farm

⇒ Long Time, higher investment for bio-project investor

Roads, connections, transportation

**Infrastructure
Development
Support**





THANK YOU FOR YOUR ATTENTION



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