Exchange of biofuel experience

between Brasil and EU

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Overview

• Background
• Problems
• Technology overview
• Possible impact
• Conclusions
Background

Problems

- Energy shortage and political inbalance
- Environmental problems
- Water

Opportunities

- Innovative technologies in different countries
- There is interest in concrete projects
- International co-operation
- Economic parameters are promising
Points to address to exploit opportunities

- Information
- Co-operation
- Financing feasibility studies and other supporting activities
- Technical issues
  - Scale enlargement needed
  - Testing of biomass
Technology overview

• Mechanical low energy pelletising technology
  – Utilisation of sugar cane waste as solid and modern fuel
  – Hydrogen and biomethanol from pellets
  – Pellets for siderurgy, replacing expensive cokes
  – Charcoal pellets for water purification
  – Large units for cost reduction
  – Small mobile units to pelletise voluminous biomass on place
Technology overview

• New synthetic crystals for decreasing energy for:
  – Desalination of water
  – Distillation of alcohol
  – Sugar condensation for better storage
    • distillers can work whole year on sugar
• Distributed small scale generation
  – Small pelletisers and steam engines
  – Alcohol for microturbines
    • infrastructure already present (in Brazil)
• Flexfuel car
From Brasil to Europe

• Large juice extractors and distillation technology
• Scale enlargement of pellet machines
• Evaluation of large scale application of alcohol in transport
• Presence of alcohol infrastructure for knowledge
  – about market and testing of microturbines
From Europe to Brasil

- Mechanical low energy pelletising technology
- New synthetic crystals for decreasing energy for:
  - Sugar dehydration (easier storage to gain time for processing)
  - Distillation of alcohol
- Distributed small scale generation
  - Pelletisers and steam engines
  - Microturbines for alcohol
General framework of activities

- Sweet Sorghum Project Romania
- Co-operation with Russia
Sweet Sorghum Romania

Project with part for industrialisation and for demonstration

• Start with 20 000 ha Sweet Sorghum
• Romanian actors
  – Biomass association Romania, land owners, industry
• Main market: big contract with Germany
• Play ground for many countries
  – China, Russia, USA, Brazil, European countries
  – They invest and learn from a unique project
  – Agreement is in preparation
• Large replication potential
  – Ethanol is world commodity (since few months quoted)
    • Transport (many mio’s of cars running on it, most in Brazil)
    • Distributed cogeneration, leading to rural development
  – Sweet Sorghum is a promising energy crop
Co-operation with Russia

- Agreement Ministry RF – EUBIA
  - with role for ETA renewable energies
- Pelletising combined with forest maintenance
  - Small and large units are both needed
- Steam engine for electricity off grid
  - Combined with pelletisers
- Four step process for hydrogen from waste
- Synthetic crystals
- Green certification
Thank you for your attention

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