

Presents

BIOMOTEC





Introduction

- **BIOMOTEC**
- **MEDZIBODROZIE**
- **BIOMASS**
- **BIOGAS GENERATION**
- **CENTRAL EUROPE**
- **SUMMARY**



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Pilot implementation of small-scale rural biomass energy production based on modular technology

Co-operation under EU Central Europe program co-financing to demonstrate a viable solution:

- **Transnational: DK-SK (Biogas Generation)**
- **Cross-border: PL-SK (Biomass)**
- **Local focus group (LFG)**



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Building on European investment:

- **SMESTO - ESPON study 1.4.1 (3/2005 – 5/2006): Role of Small and Medium-Sized (rural) Towns**
- **INTEREG IIIA HUSKUA/05/02/400: “Natural values and the environmental conflicts of the Medzibodrožie“**
- **INTERREG IIB CADSES: CER, BETTER**
- **INTERREG IIIC: RegioSustain, SiTaR, RECORA**
- **FP5-EESD: Small-Scale CHP Plant Based on a Stirling Engine for Biomass Fuels.**
- **...**



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Local Focus Group:

- Municipal, regional and national support,
- Local agricultural sector partners,
- Regional and international agricultural partners for biomass cultivation technology and methodology,
- Regional energy production partners,
- Regional industrial partners,
- International technology partners for optimal biomass energy conversion,



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MEDZIBODROZIE



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6



MEDZIBODROZIE

- Rural economy driven by agriculture and tourism
- But potentially rich land and water resources were damaged by former regime methodology
- Nescient tourism activity is still small and mostly limited to Slovak Tokaj wine growing area
- Environmental protection leads to park syndrome
- Unemployment >50% in declining population
- **NEEDS ENVIRONMENTALLY COMPATIBLE AND SUSTAINABLE ECONOMIC ACTIVITY**



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- **Enhance Slovak independence from foreign energy sources,**
- **Transfer and develop environmentally-friendly regionally-adapted biomass production: Co-exist non-detrimentally with existing agricultural produce**
- **Transfer of EU FP5 program technology: Local joint manufacturing allows diversification from existing sectors**
- **Strengthen rural communities through agriculture and energy sector economic development, as well as decentralised utilities.**



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BIOMASS SOLUTION



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9



BIOMASS SOLUTION

- Proven technology from cross-border partner (PL),
- Building from EU program precognition for rural development
- Environmentally-friendly winter silviculture activity
- 3-year cycle enhances forest environment,
- Durable development with 20 year life cycle,
- Sustainable source to biogas generator facility,
- Co-existing with agriculture adding to rural region competitiveness and economic development.

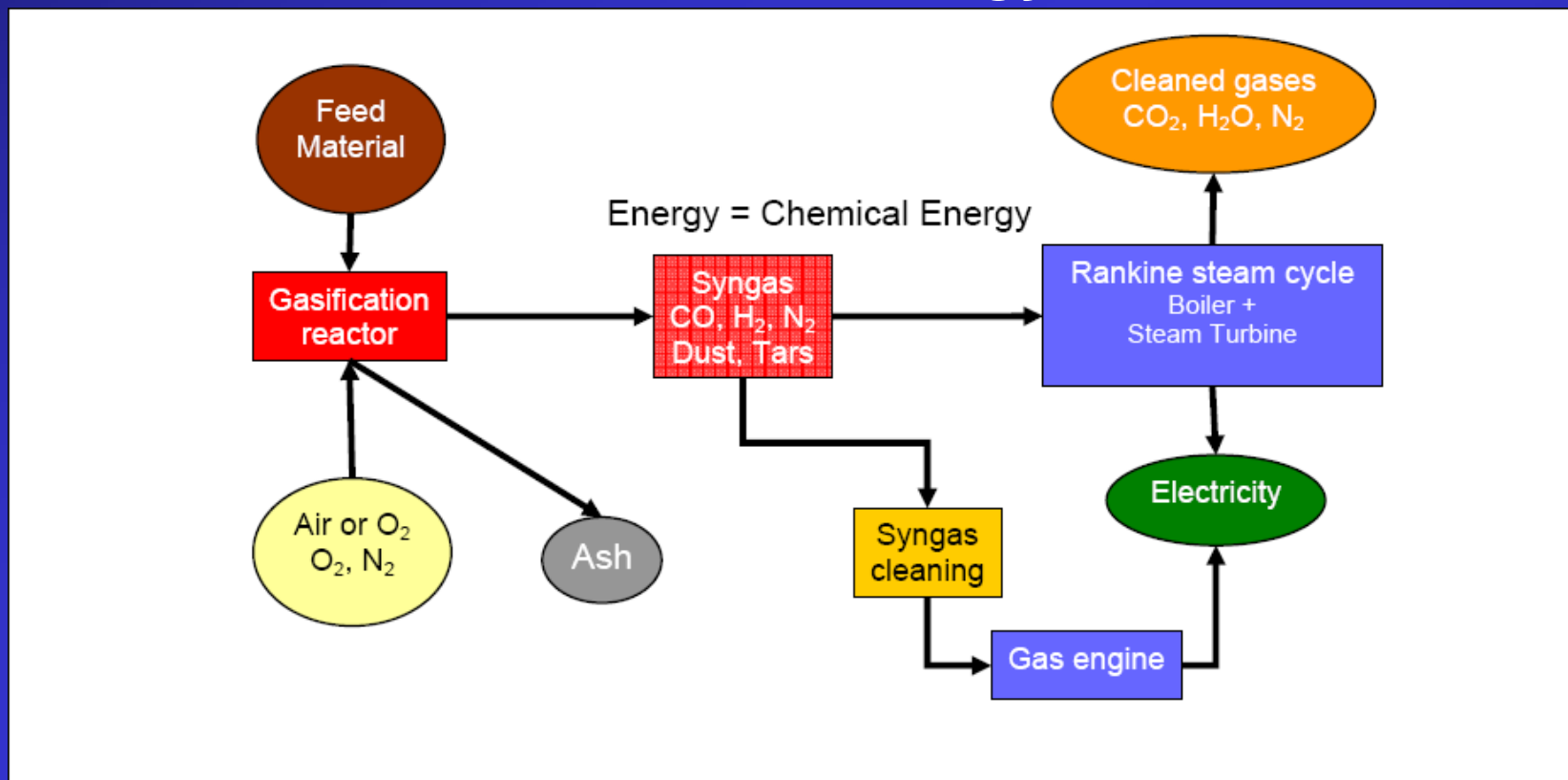


BIOMASS SOLUTION

- For the initial 3 years, from wood chips produced from clearing unused agricultural land, possibly supplemented by agricultural (vegetable) waste,
- From year 4, from wood chips produced from investment in biomass cultivation technology based on rapidly growing wood, to be planted during the first 3 years,
- Farm machinery and drying facilities currently exist, and further investment will be made into biomass specific cutting, chipping and cultivating machinery.

BIOGAS GENERATION

Gasifier technology





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BIOGAS GENERATION



- Gasifier drives Stirling engine
- Greater than 87% efficiency
- 20% conversion to electricity



BIOGAS GENERATION

- **CLEAN EFFICIENT GENERATION**
- **Proven technology from transnational partner (DK),**
- **EU FP5 program technology**
- **Cost effective efficient solution, proven to be reliable**
- **Technology transfer for joint regional manufacture representing sectorial diversification for Slovakia**
- **Local and national competitiveness and economic development.**



BIOGAS GENERATION

- 1. Design and supervision of local manufacture and installation/start-up of a gasification plant (est. 800 kW total output in either 200 kW standard blocks or a single 800 kW unit),**
- 2. Supply and supervision of local installation/start-up of electricity generation system from syngas produced by the gasifier (est. 140 kWe in 4 standard 35 kWe generator blocks),**
- 3. Design and supervision of local manufacture, installation/start-up of thermal heat recovery system (est. 500 kWth).**



Summary

1. Sustainable rural economic development in CO2 neutral Biomass Energy Generation activity
2. Central Europe program co-financed pilot implementation of vertically integrated pilot project to demonstrate environmentally-friendly sustainable economic solution to Medzibodrožie region adding to Slovak independence to foreign energy and bringing industrial diversification
3. Cedar Ridge CE project management expertise is organising transnational, cross-border and Local Focus Group to optimally meet project requirements building on Slovak and EU resources