


INFORSE-EUROPE
 International Network for Sustainable Energy



BIOMASS HEATING OF PUBLIC FACILITIES IN CENTRAL SLOVAKIA

Pilot project prepared by NGO CEPA -
 Friends of the Earth-Slovakia


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http://www.inforse.org/europe/seminar09_Artefact.htm

Substitution of coal boilers for biomass in several facilities of Central Slovakia

- The aim of the project : To replace the current obsolete heating systems in 32 public buildings in 8 rural villages in Central Slovakia with modern woodchips-based systems.
- To encourage other rural regions with similar renewable energy potential to use their local resources.
- Total project costs: 7 million EUR.



Biomass potential in the region

Remains from logging	3,250 tons
Wood waste from saw-mills	38,210 tons
Waste of piece-wood	24,940 tons
Sawdust	13,270 tons
Lower-quality range of wood-goods	8,500 tons
Total	49,960 tons

Locations

Rural villages in Central Slovakia:

- Kordiky
- Kraliky
- Riecka
- Tajov
- Lubietova
- Hiadel
- Poniky
- Čierny Balog



Legend:
■ Wood processing plant
■ Heating plant

Expected impacts

- Sustainability:** the project will enhance **economic self-sufficiency** of rural areas through the use of local biomass potential for local energy needs.
- Savings:** **municipal expenses** for heating of public buildings will decrease and savings will become available for regional development.
- Emissions:** the **CO2 emissions** will be reduced by approximately **2 654 tons per year**. Reduction of other harmful emissions – 51,9 tons/year
- Modernization:** Public buildings will be equipped with **efficient heating systems**. Most of the current boilers and heat distribution systems require serious reconstruction anyway.
- Follow-up:** the project will test opportunities for its broader introduction to other regions.

Sites and Technology

	Boiler output in kW (units)	Heated facilities	
Hiadel , Municipality	85 (1x35 + 1x50)	Municipality	21 boilers for wood chips
Hiadel , Primary school	70 (2x35)	School	
Kraliky , School	180 (1x180)	School, Municipality	Type: Herz Firematic SR
Kordiky , Municipality	200	Municipal buildings	
Lubietová, Post	400 (2x200)	Post, Municipal buildings	Output: 35, 50, 150, 180, 250, 300, 400 kW
Poniky, School	250 (1x250)	School	
Poniky, Kindergarten	250 (1x250)	Kindergarten, Municipal buildings, Nursery	Efficiency: 90 %.
Poniky, Municipal building	70 (2x35)	Municipal building	
Riečka School	150 (1x150)	School, Shop, Municipality	
Tajov, Fire dept.	180 (1x180)	Fire dept., Library, Municipality	
Čierny Balog, Health care center	250 (1x250)	Health care center, Municipality	
Čierny Balog, Cultural center	150	Cultural center, restaurant, library	
Čierny Balog, Municipal building	35 (1x35)	Municipal building	
Čierny Balog, School	800 (2x400)	School	
Čierny Balog, Kindergarten	100 (2x50)	Kindergarten	
TOTAL	3,17 MW (21 boilers)		

Fuel preparation & storage

Expected total annual consumption: 2,160 tons of wood-chips

Waste wood production facilities:


- 1. Lubietova saw-mill : Wood-chips: 960 tons + Sawdust: 400 tons
- 2. Poniky saw-mill: Wood scraps: 400 tons +Sawdust: 400 tons



Poniky

Facilities to be heated:

1. Municipal office, Nursery, Health center
Installed output: 250 kW
2. Primary school
Installed output: 250 kW
3. Municipal building
Installed output: 70 kW

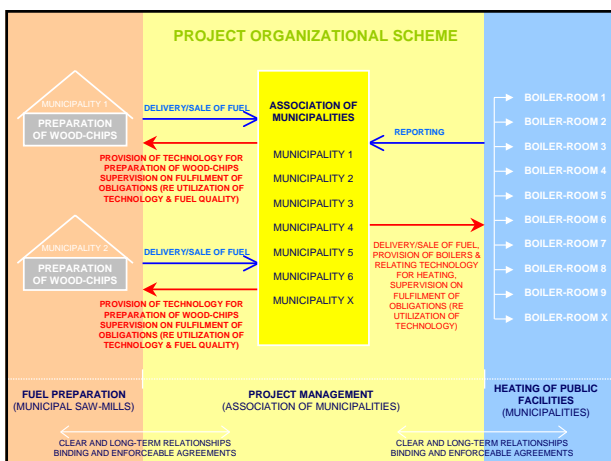
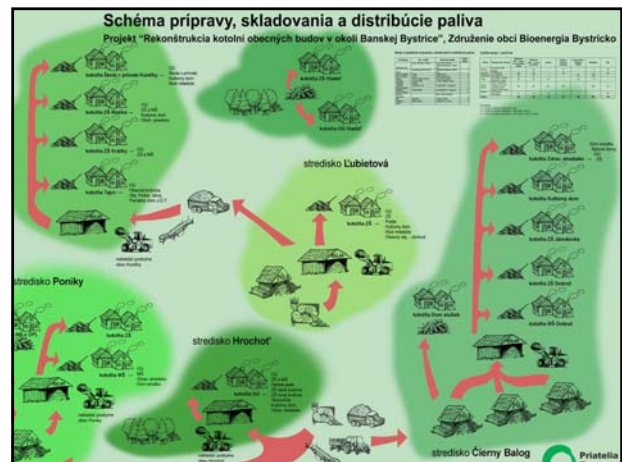


Lubietova

Facilities to be heated:

1. Municipal office+Post office
Installed output: 200 kW
2. Primary school
Installed output: 200 kW





Expected costs

Investment costs	
■ Construction costs	3,9 mil. EUR
■ Fuel storages	1,7 mil. EUR
■ Vehicles etc. (lorry-trailer)	0,8 mil. EUR
■ Project preparation	0,6 mil. EUR
TOTAL	7 mil. EUR

Savings

Average price of fuel (wood-chips): 17,9 EUR/ton

Some villages are preparing the heat for themselves. Savings are what's matters.

	Amount	€/unit	€/year
Brown coal	1 346,12 t	100,0	134 612,00
Hard coal	171,18 t	200,0	34 236,00
Coke	66,33 t	265,0	17 577,45
Electricity	858,06 MWh	166,0	142 437,96
Fuel costs without Biomass project			328 863,41
Fuel costs with Biomass project			106 397,22
Annual savings	67,65%		222 466,19

Average heat price for all installations fired with the biomass: 16,3 EUR/GJ

Average fossil fuel heat price: 26 EUR/GJ, Banska Bystrica (2009): 31 EUR/GJ

Six years of struggling

- 2003: Idea + initial project outline
Developing contacts (municipalities, technical assist.)
- 2004: Preparation of technical design and preliminary analyses
building regional partnership
identifying financing scheme
- 2005: Establishing the organisation (Bioenergia Bystricka)
Searching funds for project implementation
- 2006: Application for SF funding. Approved but no money assigned (project put into pipeline by the Ministry of Environment)
- 2007: SF new rules , new application needed.
- 2008: Development of the new project
- 2009: Submitted to ERDF, July: final approval by Ministry of Environment and grant agreement signed (75% of eligible costs will be covered by ERDF, 15% by state budget and 5% municipal co-financing).