

Regional strategy and action plan for the development of biogas production

Małopolska Agencja Energii i Środowiska Sp z o.o.

Summary

1. Description of the Malopolska Region

Population of about 3,2 mio (more than 8% of the population of Poland) 22 districts and 182 communes (Polish: "gmina"). It includes 57 cities and 2630 villages

Density: Malopolska – 215 inhab/km², (Poland's av. – 122 inhab/km²)

Forests:

The total area of forests within the borders of the Malopolska Region equals 430 945 ha.

The forestation rate of Malopolska is 28.4% (Poland – 28.6%)

2. Estimation of potential for biogas production

888,3 thousand ha of arable ground

354 169 farms in 2005:

- 354 169- private farms – 689 310 ha, av: 2,44 ha
- 209- public farms

Malopolska:

193 - number of poultry farms (over 5000 of poultry)

43 - Number of farms with livestock density over 500 pigs

21 - Number of farms with livestock density over 100 head of cattle

3. Possible uses of the produced biogas

Production of the electricity - green certificates, obligation to buy the energy produced from the renewable materials, obligation to plug to the grid,

Production of heat for own needs and for the district heating.

Feeding gas to the grid is technically possible but expensive. The biogas should be brought to the parameters of the gas in the grid. No obligation to buy the gas and plug to the grid.

4. Identification of obstacles and barriers

Barriers	Obstacle
Competitiveness	The conventional energy sources are cheaper than the renewable energy
Financial	Lack of the information about the financing instruments
Administrative	Lack of practical support from the decision makers in communes
Information and education	Lack of awareness and knowledge about the renewable energy
Political	The environment protection is not a main issue. Lack of the basic infrastructure like roads, sewage systems puts the environment protection on the second place

5. Objectives to achieve with biogas in relation to policy, economy, social and environment

- A higher energy efficiency : electricity and heat
- A better management of organic matters

Quantifiable objectives

- Better agronomical use of the substrate, more efficient manure spreading
- Valorisation of the waste from SME of agri-food sector
- Reduction of domestic waste volume

Possible limits of the objectives

- economic efficiency is low because of high investment costs, lack of specialists and qualified companies providing the technology,
- uncertainty of the authorities (because of too less knowledge),
- no acceptance of biogas of the local population because of unknowns of biogas and possible smell,
- lack of information about availability of financing instruments,

6. Elaboration of the strategy

The actions taken will be directed to:

- Local authorities (communes),

- Agricultural sector,
- Cooperative agricultural sector,
- Owners of the sewage plants,
- European projects partners,
- Community inhabitants,
- Potential investors in renewable energy especially in Biogas.

7. Public Relation

- biogas brochures /leaflets,
- media reports,
- information seminars,
- press conferences,
- study tours,
- web sites,
- data bases.

8. Proposed action plan

1. Waste management development in communities – biodegradable waste
2. Development of the anaerobic digestion in the sewage treatment plants
3. Development of the anaerobic digestion in the food processing industry
4. Recognition of the possibilities for district heating networks with the heat produced from biogas
5. Information campaign about the ways of financing the investment in the biogas plants
6. Information campaign about the European Programs supporting the energy efficient and low ecological footprint investments
7. Education campaign for farmers, owners of biodegradable waste, etc.
8. Private – public financing of the biogas plants

1. Waste management development in communities – biodegradable waste

In Malopolska region almost all of the household waste goes to the landfill sites with other waste or is treated directly in the households. Because of the EU and polish regulations the quantity of the organic matter that goes to the landfill must be reduced. The authorities of the local governments have to act quickly to demonstrate taken actions and results.

Actions	<ul style="list-style-type: none"> – Annual trainings in development of the waste management for the representatives of local governments, – Brochures about possibilities of dealing with organic waste – Assistance in the preparation of the “waste management programs for communities” – Research for possibilities of development of biogas plants
Deadlines	Long term starting from 2009
Players	Marshall Office of Malopolska Region, MAES, local governments, ecological NGO's
Target group	Local governments, producers of organic waste, farmers, all inhabitants of communities

2. Development of the anaerobic digestion in the sewage treatment plants

In Malopolska region many of the Sewage treatment plants are not equipped with the digesters. The sludge goes directly to the dumps without treatment. The development of the sewage plants is unavoidable because the number of households connected to the sewage system is growing. The main purpose of this point is to take actions to supply a great number of sewage treatment plants with digesters.

Actions	<ul style="list-style-type: none"> – Database of all sewage treatment plants without digesters, – Research for the plants where the redevelopment is planned, – Meetings with potential investors, – Information brochures, – Seminar
Deadlines	June 2009 - creation of database, production of the brochures
Players	MAES, local governments, ESCO Ltd. Kraków
Target group	Local governments, producers of organic waste, owners of the sewage plants,

3. Development of the anaerobic digestion in the food processing industry

Although in the Malopolska region the land conditions for farming are not favourable, there are many food processing companies connected with fruit – farming. The development of the biogas plant near the food processing companies will have an effect on many areas: electricity and heat for the factory, possible heat for the nearest area and reduction of waste.

Actions	<ul style="list-style-type: none"> – Database of the food processing plants – Research for the plants where the redevelopment is planned, – Meetings with potential investors, – Information brochures, – Seminar
Deadlines	Long term action
Players	MAES, local governments, ESCO Ltd. Kraków,
Target group	food processing industry

4. Recognition of the possibilities for district heating networks with the heat produced from biogas

Many communities in Malopolska has a dense housing area in the centers and detached buildings outside the centers. That makes the possibility to provide district heating for the houses that are located close to each other. The heat from the biogas plant is a very good solution for the rising prices of the conventional sources of heating. Also the organic waste will be properly used.

Actions	<ul style="list-style-type: none">– Preparation of the questionnaires for the communities and heating companies– Study on the possible location for the new projects,– Investors matchmaking,– Assistance in the development process,
Deadlines	October 2009 for the first two actions
Players	MAES, local governments, ESCO Ltd. Kraków
Target group	Local governments, Community inhabitants, local heating companies

5. Information campaign about the ways of financing the investment in the biogas plants

Nowadays in Poland there are many ways to obtain the external funds for the renewable energy investments. All necessary information about the possibilities and required documents should be collected in one place and available for the potential investors. Creation of the

Actions	<ul style="list-style-type: none">– Website with all necessary information,– Brochures and possible seminar or conference
Deadlines	July 2009 for the Website, December 2009 for conference
Players	Banks, agricultural chambers, Marshall office, MAES,
Target group	Local governments, producers of organic waste, owners of the sewage plants, , food processing industry

6. Information campaign about the European Programs supporting the energy efficient and low ecological footprint investments

Currently the aim of many European Programs is to support the development of the renewable energy sources or energy efficient actions. In many cases there is a lack of information about the running projects and possible partners interested in the cooperation in achieving the results of the project. A database with all necessary information and periodical newsletters with latest news should be a sufficient source of information for possible partners.

Actions	<ul style="list-style-type: none"> – Database of European Programs about the renewable energy in Poland – Website – Matchmaking portal for interested in cooperation,
Deadlines	December 2009
Players	MAES, Energy agencies,
Target group	European projects partners, all entities interested in cooperation

7. Education campaign for farmers, owners of biodegradable waste, etc.

Education and information actions are necessary at all stages of any development process. In Poland the environment awareness of the society is still very weak. The campaign provided for farmers and all producers of the organic waste will present the advantages and energetic potential of the biodegradable waste.

Actions	<ul style="list-style-type: none"> – Information brochures, – Website with all necessary information, – Study tours in the composting or biogas plants, – Seminar,
Deadlines	September 2009 for brochures and website, December 2010 study tours and Seminar
Players	MAES, local governments, Marshall Office of the Malopolska Region, agricultural chambers, NGO's
Target group	Local governments, producers of organic waste, owners of the sewage plants,

8. Private-public financing of the biogas plants

Public-private partnership (PPP) describes a government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies. In Poland a new state law about PPP is being created. It will simplify the procedures and framework conditions of cooperation between public and private entities. MAES started the series of seminars for the local governments to inform them about the new possibilities and to identify the demand for such projects. Establishing a biogas plant might be one of the projects.

Actions	<ul style="list-style-type: none"> – Series of meetings with representatives of communities, – Preparation of the questionnaires for the communities, – Study on the possible location for the new projects, – Investors matchmaking, – Assistance in the development process,
Deadlines	March 2009 for the seminars and the possible locations study,
Players	MAES, local governments, Marshall Office of the Malopolska Region
Target group	Local governments,