



**MINISTRY OF THE ECONOMY**

**Directions of development for agricultural biogas plants in  
Poland between 2010-2020**

**Document prepared in cooperation with  
Ministry of Agriculture and Rural Development**

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## **1. Goal of the document**

The hereby document refers to the postulates raised on the necessity for establishing of a system promoting and supporting the manufacturing of agricultural biogas and its application for the production of electricity and heat. The goal of “Directions of development of agricultural biogas plants in Poland between 2010-2020” further referred to as the “Directions” is: The creation of optimal conditions for the development of installations manufacturing agricultural biogas (the report indicates legal changes, which should be made in the Polish legal system, in order to optimize the construction processes of biogas installations); indication of the possibility for cofounding of these types of installations from public assets (national as well as those of the European Union – this document is not intended to create the funds, but rather indicates the existing budget instruments) as well as the performance of appropriate educational and promotional activities in the scope of constructing and using of agricultural biogas plants. The implementation of the Directions is a necessary element of the process leading up to the creation by year 2020 of one agricultural biogas plant per each commune, making use of the agricultural biomass, with the assumption that the commune possesses the appropriate conditions for the initiation of such an undertaking. It is forecasted that the biogas plants will be created in those communes with large areas of farm land from which biomass may be generated, which constitutes a type of harmonization of the state’s national priorities with those of the European Union’s Common Agricultural Policy.

The method of utilizing of agricultural biogas is dependent on multiple factors characteristic to the location of the individual investments (distance from the distribution networks, overall and local demand for electricity or heat, etc.). It is for this reason that the Directions do not determine the minimum or the maximum capacity of the biogas facilities to be installed as well as the method of utilizing the generated agricultural biogas (purification of the gas, supplying it to the network, generating of electricity and/or heat). The Directions do not specify the conditions, goals and directions for the development in the social, economic, regional and spatial areas as well as they do not refer to the regional development and the spatial development. These decisions remain within the scope of the investors managing the individual investments.

The Priority for matters connected with the renewable energy sector has found an expression in the form of the “Poland’s energy policy until 2030” adapted by the Council of Ministers on 10<sup>th</sup> November 2009. One of the main goals of the energy policy within this area is the growth of the share of renewable energy in the final energy consumption to the level of at least 15% as well as up to 10% within the transport fuels market, by year 2020. The executive activities program for the years 2009-2012 which constitutes an annex to “Poland’s energy policy until 2030” contains the concrete activities targeted at achieving of the above established goals. A significant part of them is related to the implementation of the Directive 2009/28/EC of the European Parliament and of the Council of 23<sup>rd</sup> April 2009 on the *promoting of the use of energy from renewable sources, amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC* (Journal of Laws of the EU L 140 from 5.6.2009, pages 16-62.). Directions, in accordance with the *Declaration on Green Growth* adopted on 25<sup>th</sup> June 2009 at the meeting of the Minister – members of the Organization for Economic Co-operation and Development (OECD) are an element of promoting of a more ecological economic growth, a positive influence on the development of using renewable energy sources as well as the reduction of green house gas emissions. Furthermore, the realization of the activities contained within the Directions may increase the rate of Poland’s economic growth (weakened in the recent period by the global economic and financial crisis).

## 2. Forecasted effects

The realization of the established goals will allow for the:

- a) improvement of the nation’s energy security through the increase of the energy supply based on renewable energy sources generated from the nation’s own raw materials;
- b) basing of a significant part of the gas supply, electricity and heat and agricultural biogas such as a transport fuel for many local biogas plants which will in turn allow for the delivery of agricultural biogas at quality levels equal to natural gas for the inhabitants of villages and small towns as well as to economic entities;
- c) generation of so-called local added value networks, among others by way of economic animation of the rural areas as well as by an increase in the employment among the rural population and economic entities of the farming industry and those connected with the renewable energy production (green jobs);

- d) stimulation of the development of local initiative connected with usage of locally generated heat;
- e) improvement of the energy infrastructure and increase in the competitiveness of the Polish agriculture (so-called distributed energy infrastructure);
- f) generation of significant volumes of electricity and heat from raw materials not in direct competition with the food industry, categorized as by-products of agriculture and waste from the agricultural and food industry;
- g) utilization of the potential of the environmentally-friendly agriculture in areas of Natura 2000 for the development of renewable energy source usage;
- h) increase in own income for local governments;
- i) obtaining of significant quantities of high quality environmentally-friendly organic fertilizers in the form of post-fermentation remainders from an agricultural substrate in the form of a granulated product;
- j) use of organic wastes which emit green-house gasses in to the environment, for energy production.

### 3. The Document's addressees

The Directions are directed at the:

- a) government and self-government administrative bodies responsible for the creation of stable conditions for the delivery of electricity and heat in quantities and at quality levels expected by recipients as well as for the development of distributed energy generation;
- b) recipients of energy including:
  - households,
  - farmers and agricultural producers,
  - public utility enterprises,
  - economic entities;
- c) suppliers of energy-generating raw materials as well as producers and distributors of electricity and heat including:
  - farmers and agricultural producers,

- entities interested in investing in plants generating agricultural biogas,
  - regional energy agencies,
  - network distributors of gas and electricity as well as heat;
- d) private financial sector;
- e) organizations and associations operating in branches of business included in the Directions.

#### 4. Biogas' energy-generating potential

The opportunity for the development of the use of agricultural biogas in Poland is significant due to the large energy-generating potential of the national agriculture. The theoretical raw material potential is estimated at the capability of generating of 5 billion m<sup>3</sup> of biogas<sup>1</sup>. This potential assumes the utilization in first order, the by-products of agriculture, liquid and solid animal wastes and by-products and remainders from the agricultural and food industry. At the same time, along with the utilization of these raw materials, it is foreseeable to the cultivate plants, designated as energy-generating, for the purpose of manufacturing a substrate for the biogas plants. It is possible to ultimately achieve approximately 700 thousand hectares which will allow for the full securing of national food requirements as well as the obtaining of additional raw materials necessary for the generation of biofuels and agricultural biogas.

The realistically available raw material potential for the production of biogas in the by-products of agriculture and the agricultural and food industry amounts to approximately 1,7 billion m<sup>3</sup> of biogas per annum. Poland's annual consumption amounts to 14 billion m<sup>3</sup> of natural gas including individual consumers from rural areas who use approximately 500 million m<sup>3</sup> of gas. The estimated volume of biogas after purification could cover approximately 10% of the national requirement for gas or completely cover the needs of the consumers in rural areas while supplying additionally 125 thousand MWh<sub>e</sub> (electricity) and 200 thousand MWh<sub>th</sub> (heat).

The estimates of the national agricultural energy potential included the changes resultant from the development of residential housing, services and industrial production as well as those of the transport infrastructure. The estimates assumed that the increase of the demand will

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<sup>1</sup> This information has been supplied by the Ministry of Agriculture and Rural Development

naturally generate an increase in supply (in the case of production and the supplying of energy-generating raw materials).

It is also important to note that the increase in the utilisation of agricultural biogas generated by way of agricultural by-products, liquid and solid animal wastes and remainders from the agricultural and food industry will have an effect on the increase of the farmers' incomes of by way of utilizing of until-now unmanaged waste products and allow for the maintaining of agriculture's main function which is the production of food.

The utilization of the above-mentioned potential energy-generating remainders for the production of the agricultural biogas, will effectively protect the environment from contamination. The biogas generating process uses substrates which may not be utilized by other means or would otherwise generate problems with their utilization or could generate a threat to the environment during storage (swine manure). Their utilization for the production of agricultural biogas solves the problem of organic wastes and at the same time allows for obtaining of large amounts of high-quality environmentally-friendly organic fertilizers in the form of post-fermentation remainders from an agricultural substrate in the form of a granulated product.

Taking into account additionally the „Forecast for the fuel and energy demand until 2030” constituting Annex No 2 to „Poland's Energy Policy until 2030” in the scope of requirements for final gross energy from biogas in the generation of electricity and heat in 2020 in the amount of 850 ktoe, the amounts of CO<sub>2</sub> emissions avoided in connection with the generation of electricity and heat from fossil fuels is estimated at 3 400 000 tons per annum.

## 5. Cost of the realization of the Directions

Activities directed at achieving of the hereby Document's goals may be viewed, above all, from the point of economics. The investment input necessary for the construction of a single biogas plant (together with the installation used for purifying the agricultural biogas) with an estimated capacity of 1 MW<sub>el</sub>, generating annually 3,5 – 3,8 million m<sup>3</sup> of agricultural biogas (with a methane content of between 52% and 60%) constituting the equivalent of 2,5 million m<sup>3</sup> of biogas with quality parameters equal to that of high-methane natural gas (a methane content of 98%), are estimated at approximately 10 – 15 million PLN. The above indicates that the investments in agricultural biogas located nationwide, possessing the generating potential of 1 billion m<sup>3</sup> of agricultural biogas per annum, with quality parameters equal to

that of high-methane natural gas, require the investment in the amount of 4 - 6 billion PLN. The method of utilizing of the generated agricultural biogas, whether input into the national gas distribution network, the industrial-distribution gas network administrated by local governments or generation of electricity or heat, remains in the scope of the investors.

The assumption of the public assistance (e.g. from the structural funds with taking into account the applied regional or national public aid) at the level of 50% of qualified investment costs, represents the requirement for such funds at the level of approximately 2 – 3 billion PLN. The assumption of the above general validity of the installed capacity, represents the need for the appropriate increase of the necessary investment and means for support. The cost analysis indicates that the investments based on more refined Technologies (e.g. a closed circuit water supply, post-fermentation substrate remainders – processed into granulated organic fertilizers), as well as taking into account the derivative costs of the project (e.g. expenditures for the connecting of the agricultural biogas plants to grid or the national gas distribution network) may increase the total costs for the investment by approximately 15 – 20%.

The operational time of the agricultural biogas generating devices amounts to 95% per annum (with the efficiency of co-generating devices at 80%<sup>2</sup>).

It is estimated that the annual return on investment on agricultural biogas plant, amounts to approximately 15% (with the assumption of the complete sale to external entities of the electricity and heat or the transferring to the gas network of enriched agricultural biogas with the right to obtain the appropriate certifications for energy originating from renewable resources) which gives an average 7 - 9 year return period from the total investment of capital.

## 6. Mechanisms for the realization of goals

The quick development of agricultural biogas plants as well as the possibility of using agricultural biogas is limited by a number of barriers constituting a combination of factors which are psychological, social, institutional, legal and economic in nature. The development of agricultural biogas plants will be based mainly on the removal of these institutional and legal barriers and the appropriately selected economic stimuli which will influence the

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<sup>2</sup> Information concerning the program's costs of realization has been provided by the Ministry of Agriculture and Rural Development



creation of the services market as well as the technical capability for biogas installations. The supply of this type of energy fuel, generated in agricultural biogas plants for gas distribution networks is a convincing element on the part of the economic and ecological effects connected with the limiting of losses occurring on the processing of gas into electricity and heat as well as on the side permitting the supply of this fuel to, among others, households in the countryside and in small towns where such possibility did not exist earlier.

### **6.1. Generation of favourable conditions for research on development of biogas manufacturing technologies**

The manufacturing of agricultural biogas is characterized by different levels of development, a large scope in terms installed capacity, its efficiency, output levels and the frequency of failure of the equipment along with significant variations in the amounts of investment expenditures. An important element conditioning the successful development of biogas installation is their dependability and high level of the efficiency of microbiological processes taking place in the bioreactors. It is for this reason that the support of science is required in the scope of research and demonstrative programs connected with the implementation of new techniques and technologies used for manufacturing of agricultural biogas. This is especially important in terms of the modification of national scientific and research priorities and adjusting them to the directions of the scientific developments. An important element will be the realization of research tasks in the scope of the Strategic program for scientific and development activities entitled „Advanced technologies for energy generation” lead by the National Research and Development Centre. The highest priority of the above-mentioned program is the development of technological solutions, the implementation of which will aid in the achievement of the European Union’s goals of the 3x20 climate and energy package.

Additionally, the development of the technical and technological processes should be included in the:

- a) improvement of the methane fermentation;
- b) improvements in the manufacturing of biogas from different types of agriculturally based substrates;
- c) improvement in the methods of obtaining post-fermentation products;
- d) improvement in the monitoring of fermentation parameters taking place in the fermentation tanks;
- e) improvement of technology for conversion of biogas into electricity and heat;

- f) improvement of the purification process of biogas into bio-methane;
- g) improvement of a number of computer technologies in the area of optimization, supervision and stabilization of the biogas plant's entire process.

## 6.2. Legal alterations

Solutions intended to improve the development processes for the utilization of renewable energy sources, including agricultural biogas plants were contained in the Act from the 8<sup>th</sup> January 2010 on the amendments to the Act – Energy law and on amendments to other Acts (Journal of Laws No 21, item 104). The Act forecasts, among others the stipulation of the legal basis and the conditions for connecting to the gas distribution network of agricultural biogas plant installations by the energy-producing companies dealing with the transfer or the distribution of gas fuels. This Act included an instrument for assistance in the form of correlating the system of agricultural biogas promotion with the existing system of certifications originating from electricity generated by the renewable energy sources which will certainly become a significant stimuli for potential investors for the realization of undertakings in the scope of constructing biogas plants. The agricultural biogas purified to the quality parameters of the high-methane natural gas or nitrated gas will be pumped into the distribution and local installation networks from the initiatives of the local governments. At the same time, the Act foresees the introduction of regulations, on the basis of which, economic activity within the scope of manufacturing of agricultural biogas or electricity from agricultural biogas, will be performed on the basis of an entry into the register of energy-generating enterprises dealing with the production of agricultural biogas. The body operating the register as well as responsible for monitoring and verifying of energy-producing enterprises dealing with the manufacturing of agricultural biogas will be the President of the Agricultural Market Agency.

Keeping in mind the regulations concerning the connecting of biogas plants to the grid, the Act includes among others:

- the introduction of a deposit for payment for connecting to the network. The necessity of introducing such a solution has been caused by the speculative reservations of locations and connection power ratings within the grid. The introduction into the Act of the duty to bring in a deposit for the payment for connecting to the network, should

allow for the partial freeing up of a part of the connecting power ratings and limit this unfavourable effect in the future;

- disciplining the network entities to obey the deadlines for issuing of conditions for connecting to the network. For the failure to keep to said deadlines, a monetary fine will be issued in the amount of at least 3000 PLN per each day of delay;
- The assurance of full transparency of the process of connecting to the grid by way of the fact that the enterprises dealing with the transfer or the distribution of electricity will be obligated to assure full public availability of information, including among others: Information on entities applying for a connection, the location of the connection and the connection power rating as well as the dates of issuing of the conditions for the connection.

An obstacle however which the investors planning the construction of a biogas installation still come cross, are the unfavourable legal acts which dictate the legal and administrative procedures connected with the implementation of technologies and location of the installations making use of renewable sources of energy. The necessary changes in the legal regulations necessary for the effective realization of goals stipulated in the Directions, include:

- a) The issuing of an executive act in the scope of, among others, quality parameters of agricultural biogas introduced into the gas distribution network as well as the recalculation of the generated agricultural biogas into the equivalent of electricity generated from renewable energy sources, as resultant from the entries of the Act from 8<sup>th</sup> January 2010 on the amendment to the Act – *Energy law and on amendments to other acts* (Journal of Laws No. 21, item 104);
- b) In connection with the obligation to implement into the national legal system of the Directive 2008/98/EC of the European Parliament and of the Council of 19<sup>th</sup> November 2008 *on wastes and repealing certain Directives*, introduction of appropriate regulations in the scope of waste management while taking into account the need for development of agricultural biogas plants in Poland, which will constitute an element of the legislative process of specific legal acts in this scope;
- c) Amendment to the decree of the Minister of Food and Agriculture from the 7<sup>th</sup> October 1997 - *in the case of technical requirements which should be met by agricultural structures and their location* (Journal of Laws No. 132, item 887 as well

as from 2009, No 108, item 907) in the scope of specifying regulations relating to biogas plants;

- d) The amendment to the decree of the Council of Minister from the 24<sup>th</sup> December 2007 – *in the case of the Polish Classification of Economic Activities (PKD)* (Journal of Laws No. 251, item 1885 as well as from 2009, No 59, item 489) in order to assume the activity of biogas production;
- e) In connection with the obligation to implement into the national legal system of the Directive 2009/28/EC of the European Parliament and of the Council of 23<sup>rd</sup> April 2009 on the *promoting of the use of energy from renewable sources, amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC*, taking into account the introduction of changes to the tools connected with the financial assistance for development of renewable energy production in Poland, which will constitute an element of the legislative process of specific legal acts in this scope;
- f) The introduction of amendments to the Act from the 10<sup>th</sup> July 2007 *concerning fertilizers and fertilization* (Journal of Laws No. 147, item 1033) in this scope:
  - The limitation of the obligation of approval by the Regional Chemical-Agricultural Stations for fertilization plans where the post-fermentation remainders resultant from agricultural biogas plants will be utilized.
  - The broadening of the definition of natural fertilizers to include the processed and unprocessed products generated in agricultural biogas plants in the processes of biomass methane fermentation;
- g) Stabilization of solutions in the scope of administrative procedures on the location of biogas investments;
- h) The consideration of introducing amendments to the Act from the 21<sup>st</sup> August 1997 *concerning estate management* (Journal of Laws from 2004, No. 261, item 2603 with further amendments) as well as the Act from the 27<sup>th</sup> March 2003 *concerning spatial management and planning* (Journal of Laws No. 80, item 717 with further amendments) in order to significantly hasten the recreation the generation capacity, generation of new energy sources, including renewable ones;

The goal of this activity is the broadening of the catalogue of the public goal for investment based on constructing of renewable sources of energy, thereby generating optimal conditions for the development of distributed energy generation based on

locally available raw materials. Additionally, the updating of the above mentioned regulations may facilitate the ordering of planning processes connected with the construction of the energy infrastructure, including renewable sources of energy.

- i) The adoption of standardized solutions concerning the fire protection and blast-proofing in agricultural biogas plants:
  - in the decree of the Council of Ministers from 9<sup>th</sup> November 2004 *in the case of stipulating the types of undertakings with potential for significantly affecting the environment and specific conditions connected with the qualifying of such undertakings, for the generation of a report on such effects on the environment* (Journal of Laws No. 257, item 2573 with further amendments) (along with a related annex),
  - in the decree of the Minister of Infrastructure from the 12<sup>th</sup> April 2002 *in the case of technical requirements which should be met by structures and their location* (Journal of Laws No. 75, item 690 with further amendments);
- j) Undertaking of activities for the benefits of introducing changes to the Infrastructure and the Environment Operational Programme:
  - Priority IX. Environmentally-friendly energy-generating infrastructure and its energy efficiency – Activity 9.1 – Highly-efficient generation of energy and Activity 9.4 – Production of energy from renewable sources in the scope of reducing the minimal value of the project for investment in the area of electricity generation from biomass or biogas and the broadening of the catalogue of projects concerned with the construction of thermal-electric power plants fuelled by biomass or biogas,
  - Priority X. Energy security, including the diversification of energy sources – Activity 10.3 – Development of the industry of renewable energy sources, in the scope of the broadening of the catalogue of types of projects concerned with construction of a production line manufacturing devices used among others, in the production of electricity and heat.

### 6.3. Current financial assistance for the construction of agricultural biogas plants

The high costs of the preparation for investment and the high initial investment expenditures in the renewable energy source technologies in the scope of biogas installations, significantly impede the development of energy production utilizing agricultural biogas energy. The key tools presented below used for supporting of investments connected with constructing of installations generating and converting agricultural biogas into energy<sup>3</sup>:

#### a) **Supporting of the biogas plants as part of the Infrastructure and Environment Operational Programme**

##### **Priority IX. Environmentally-friendly energy infrastructure and energy efficiency – Activity 9.1 – Highly efficient energy production**

The goal of the activity is the increase in the efficiency in manufacturing of electricity and heat by way of combined construction and redevelopment of the electricity and heat generating units as a result of which, these units will meet the requirements for highly efficient cogeneration. Assistance provided within the scope of the activity, will be for projects related to the combined generation of energy from renewable sources. The beneficiaries of such assistance may include: entrepreneurs, regional government bodies and their unions, associations and cooperatives, entities rendering public services as part of the realization of duties of their own regional governmental bodies. Minimum project value - 10 million PLN. Maximum assistance value - 30 million PLN.

- **Priority IX. Environmentally-friendly energy infrastructure and energy efficiency – Activity 9.4 – Energy production from renewable sources**

As part of the activity, assistance will be granted to investments in the scope of constructing or increasing the power output of electricity or heat from renewable sources (biomass and biogas). As part of the projects being realized the assistance will include the terminals of the electricity generating units from renewable sources to the nearest existing networks. The terminal must constitute an integral part of the project related to the energy generating unit, necessary for achieving the goals of such project. The beneficiaries of such assistance may

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<sup>3</sup> The complete informations in the scope of financing of agricultural biogas plants from the European Union funds, may be found in the materials entitled "A Guide – European funds for renewable energy" available at: [www.mg.gov.pl/Gospodarka/Energetyka](http://www.mg.gov.pl/Gospodarka/Energetyka) as well as in the individual source documents available at [www.mrf.gov.pl](http://www.mrf.gov.pl). The related nomenclature and the rules for granting of assistance are indicated in the Directions in accordance with legal regulation in this scope, especially with regulations of the directive of the European Union Commission No 800/2008 from 6<sup>th</sup> June 2008 recognizing certain types of assistance as valid in accordance with the common market in the sense of Art 87 and 88 of the Treaty (general directive in the case of block exclusions) (Official Journal of the European Union L No 214 from 09.08.2008, page 3).

include: entrepreneurs, regional government bodies and their unions, associations and cooperatives, entities rendering public services as part of the realization of duties of their own regional governmental bodies, churches, church legal persons and their associations as well as other religious unions. The minimal project value for an investment in the scope of electrical energy production from biomass or biogas – 10 million PLN. Maximum assistance value - 40 million PLN.

- **Priority X. Energy security, including the diversification of energy sources – Activity 10.3 – Development of the renewable energy sources industry**

The main goal of the activity is to increase the effectiveness of diversification of energy sources and the development of the renewable energy sources. The assistance will be granted for projects connected with the construction of technological production lines manufacturing devices used in generation of electricity and heat from renewable sources. As part of the activity, the assistance may be granted to investments based on the construction of facilities for manufacturing of devices generating, among others, electricity from biogas and biomass, heat using biomass and electricity and heat in cogeneration, utilizing biomasses. The beneficiaries of such assistance may include entrepreneurs. Minimum project value qualified for assistance - 8 million PLN. Maximum non-refundable assistance value may not exceed 30 million PLN.

- b) Support of a biogas plants as part of the National Fund for Environmental Protection and Water Management**

As part of the *Program for undertakings in the scope of renewable energy sources and highly effective cogenerating structures – part 1*, developed by the National Fund for Environmental Protection and Water Management, funds have been assigned for the generation of electricity and/or heat with the use of biogas resultant from processes of waste, clearing of sewage or biodegradation of plant and animal remainders.

The forms of financing available for beneficiary may be categorized into:

- Interest-bearing loan;
- the granting of financing may be preceded by a promise of lending.

The value of the loan may amount between 4 million PLN and 50 million PLN with the assumption of up to 75% of the qualified costs being subsidized. Minimum project value amounts to 10 million PLN.

The beneficiaries of such assistance may include: Entities undertaking the realization of projects in the scope of renewable energy sources and high-efficiency cogeneration.

Detailed information concerning the program may be found at:

<http://www.nfosigw.gov.pl/srodki-krajowe/programy-priorytetowe/oze-i-kogeneracja/oze-i-kogeneracja-cz1/>

The National Funds for Environmental Protection and Water Management is realized in cooperation with the Voivodeship Funds for Environmental Protection and Water Management, a *Program for projects in the scope of renewable energy sources and high-efficiency cogeneration facilities – part 2*. The direct beneficiaries are the Voivodeship Funds while the end beneficiaries are the entities undertaking the realization of the projects themselves which deal with renewable sources of energy and high-efficiency cogeneration. The total cost of a project can amount to between 0,5 million PLN and 10 million PLN.

Detailed information concerning the program may be found at:

<http://www.nfosigw.gov.pl/srodki-krajowe/programy-priorytetowe/oze-i-kogeneracja/oze-i-kogeneracja-cz2/>

**As part of the Green Investments System (GIS), the National Fund for Environmental Protection and Water Management, fulfilling the function of a National Operator of the Green Investments System, is realizing the priority program of agricultural biogas plants.**

Being a part of the program, the National Fund for Environmental Protection and Water Management assumes the financing of the following types of activities:

- construction, development or redevelopment of structures used agricultural biogas for generation of electricity or heat with exclusion of landfill biogas installation.
- construction, development or redevelopment of agricultural biogas generating installations in order to introduce it into the distribution and direct gas networks.

A minimum total project value amounts to 10 million PLN.

Detailed information concerning the program may be found at:

[http://www2.nfosigw.gov.pl/system-zielonych-inwestycji---gis/programy-priorytetowe/gis-program-biogazownie\\_rolnicze/](http://www2.nfosigw.gov.pl/system-zielonych-inwestycji---gis/programy-priorytetowe/gis-program-biogazownie_rolnicze/)



### **c) Supporting of biogas plants as part of the Rural Development Program**

The Rural Development Program for 2007-2013 is a tool for realization of the European Union's policy in the scope of developing rural areas. The document stipulates the goals, priorities and rules on the basis of which selected activities which relate to these issues will be subsidized.

The scope of the assistance includes among others the generation or the distribution of energy from renewable sources, especially originating from biogas and biomasses. This scope includes investment costs and especially: the purchase of materials and realization of construction-assembly works as well as the purchase of the necessary equipment. The assistance may be granted to communes or supporting units designated by the communes. The volume of the assistance may amount to a maximum of 75% of qualified costs, with no more than 3 million PLN per each commune (for renewable energy sources) within the period of the program's realization.

- **Activity 121. Modernization of farmsteads**

The assistance granted as part of this activity concerns investments connected with the undertaking or the modernization of the production of agricultural food or non-food products including products designated for purposes of energy generation. Assistance may be granted, among others for the purchase of machinery and equipment used for the cultivation, harvesting, storage, preparation for sale of agricultural products further used as a raw materials or substrates for the production of energy materials. The scope of the undertakings may include investments in equipment used for the production of energy from renewable sources for the needs of agricultural production within a given farmstead. This means that within this activity, the assistance may only be used for investments where the production of heat or electricity in a biogas plant will be used for the purposes of other types of agricultural activity or for own uses of the given farmstead.

The beneficiary of this activity may be a: natural person (between the age of majority but not having reached the retirement age), a legal person, a partnership operating an agricultural activity in the scope of plant or animal production. The maximum assistance granted to a single beneficiary for a single farmstead within the scope of the activity, during the period of realization of the Rural Development Program, may not exceed the amount of 300 thousand PLN. The minimum value of qualified costs for a project is 20 thousand PLN.

- **Activity 123. Increase of the addend value of the basic agricultural and forestry production**

This activity supports the investments in the scope of processing solely agricultural and food products or non-food products, including agricultural products used for energy generating purposes. Investments connected with the chemical modification of agricultural products in the manufacturing process of biofuels, not being agricultural products, will not be supported as part of the Rural Development Program while they may be co-financed as part of the Structural Funds (among others, from the European Regional Development Fund). The scope of the projects in this activity may include investments in equipment used for the production of energy from renewable sources or by-products (biogas) for the needs of agricultural production within a given farmstead processing facility.

The beneficiary of the activity may include a natural or legal person or an organizational unit without legal personality, which:

- possesses a registered economic activity in the scope of processing or trading in agricultural products;
- operates as an entrepreneur operating an activity as a small or medium enterprise or a company employing less than 750 personnel or a company the turnover of which does not exceed the PLN equivalent of 200 million EUR.

The level of the possible assistance to be received as part of the described activity amounts to:

- 25% of the costs of an investment qualifying for assistance, realized by an entrepreneur being a small or medium enterprise;
- 40% of the costs of an investment qualifying for assistance, realized by an entrepreneur operating an activity as a small or medium enterprise;
- 50% of the costs of an investment qualifying for assistance, realized by an entrepreneur operating an activity as a small or medium enterprise, which is realizing a project concerned with the processing of agricultural products for energy-generation purposes.

- **Activity 312. Establishment and development of micro enterprises**

The goal of the activity is the aiding of the increase in competitiveness of rural areas and the sustainable social and economic development in those regions. In other words, the main goal of this activity is the increase of employment in rural areas. The assistance is being granted to entities as a result of investments connected with the creation or the development of micro enterprises operating in the scope of, among others, the manufacture of energy-generating

biomass products. A significant issue is the fact that the sole criteria for granting of the financial assistance is the creation of at least a single position of employment.

The beneficiaries of such assistance may include: a natural or legal person, an organizational unit not possessing a legal personality which operates or undertakes the operation as a microenterprise, employing less than ten persons and having a turnover not exceeding the equivalent of 2 million PLN. The assistance granted as part of this activity comes in the form of refunding of a part of incurred qualified costs. The level of assistance may not exceed 50% of the qualified costs and may at the same time not be greater than:

- 100 thousand PLN – if the business plan includes the creation from 1 to 2 positions of employment (in calculation of full average annual employment) which is justified by the scope of the factual operations;
- 200 thousand PLN – if the business plan includes the creation from 2 to 5 positions of employment (in calculation of full average annual employment) which is justified by the scope of the factual operations;
- 300 thousand PLN – if the business plan includes the creation of at least 5 positions of employment (in calculation of full average annual employment) which is justified by the scope of the factual operations;

- **Activity 321. Basic services for the rural economy and population**

The financial assistance within the this activity is granted above all for the realization of projects in the scope of production or the distribution of energy from renewable sources including among others, from biogas. The goal of the activity is the improvement of the technical infrastructure of the rural areas which facilitates the improvement in living conditions of the population.

A beneficiary of the assistance may be a commune or the commune's entity rendering auxiliary services. The maximum amount of the assistance for the realization of projects within a single commune, during the realization of the Program, may not exceed 3 million PLN – for projects in the scope of producing or distribution of renewable sources of energy.

#### **d) Environmental Protection Bank**

Taking into account the increased interest of the market and the need for protecting the environment, Environmental Protection Bank with its seat in Warsaw (BOŚ S.A.) wanting to meet the demands of the customers, has prepared a credit offer connected with the investments in this specific area. The bank's offer includes products with preferential crediting conditions (reduced interest), granted especially thanks to the cooperation of BOŚ S.A. with the Voivodeship funds for environmental protection and water management. The credit conditions are different for all Voivodeships. All those interested may apply for this kind of assistance. A credited party may be a natural person, an entrepreneur as well as a territorial self-government (provided this is permitted by the conditions of the agreement between BOŚ S.A. and the individual Voivodeship funds). BOŚ S.A. additionally offers credit from a range of foreign banks (e.g. KfW - Kreditanstalt für Wiederaufbau) for long-term investments connected, among others, with renewable sources of energy or other investment projects with a pro-ecological profile.

In the case of a lack or limited possibilities for crediting of projects on preferential conditions, the bank also offers commercial credit loans and other financial products. BOŚ S.A. supplies its clients with the support of professionals, ecologists working for the bank – an engineering staff possessing the experience in the creation of the most favourable conditions for financing of individual projects. The ecologists will provide consultation to the bank's clients, free of charge, so that the project prepared for the pro-ecological investment meets the technical and legal requirements. The bank performs an estimation of the projects' risk and the possibility of payment of the obligations from future incomes.

#### **e) Regional Operational Programs for 2007-2013**

Among the assistance programs it is also important to present the Regional Operational Programs (RPO). Similarly to the earlier described Operational Programs, they constitute a collection of priorities the a scope of which foresees different activities for which the Regional Operational Programs provide different possibilities of financial assistance. Due to the fact that the Regional Operational Programs differ both in priorities, activities as well as the possibility for receiving financial assistance depending on the Voivodeship for which they

are intended, the specific information is found on the Internet websites of the individual Voivodeship Self-governments<sup>4</sup>.

## **7. Informational and educational activity within the scope of constructing and utilizing of agricultural biogas plant installations**

A significant social factor slowing the development of agricultural biogas plants is the lack of knowledge concerning the processes and technologies for generating and managing of the manufactured agricultural biogas, procedures for operating at the location of the investment, access to the technologies and the sources of financing as well as the lack of knowledge of these issues among the public administration. This concerns especially the insufficient propagation of appropriate educational programs in educational institutions and the impaired access to knowledge on the existing and future development of biogas plant technologies.

The realization of the hereby document therefore depends upon reaching of many different social groups. This task requires the performing of a wide-spread informational, educational and promotional campaign which should explain the legitimacy of realizing the Directives and disperse the stereotypes and social barriers including those resulting from fears and threats connected with the manufacturing of biogas. The realization of this task is based on materials, educational and promotional programs as well as trainings and seminars. This realization will be participated in by scientific and training instructions, employees from the appropriate governmental departments, agricultural counselling centres, scientific and didactical units as well as the media. It is very important in light of the activities targeted at the dynamic development of constructing biogas installations, the undertaking of informational and educational activities aimed at the individual groups of investors interested in this field.

### **7.1. Activities directed at the public**

The activities directed at the public will be based on:

- a) development and the propagation of informations (via television, radio and the Internet) concerning biogas plants in the context of environmental benefits as well

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<sup>4</sup> Links to the individual regional operational programs are found on the Internet site: [www.mrr.gov.pl](http://www.mrr.gov.pl)

as the influence on the increase in renewable sources of energy along with an increase in the locally available energy sources;

- b) organizing of knowledge contests among children and the youth concerning the topics of biogas plants and their beneficial influence on the environment.

Responsibility for the above activities rests upon: the ministers specific to the issues of the economy, the environment, the agriculture, education and higher learning (with the participation of the agencies and institutions subordinate to the ministers) and the educational superintendents.

## **7.2. Activities directed at farmers and agricultural producers**

Activities directed at farmers and agricultural producers are to include the:

- a) creation and distribution of a guide concerning the methods and costs of constructing a biogas plant, its benefits to the environment and the consumption of energy in a farmstead as well as administrative procedures which a potential investor has to undertake. Guide will also spread the knowledge about the possibility for cofounding of these types of installation from public assets;
- b) creation of informational programs for farmers on the possibilities and benefits from the production and utilization of biogas along with proposed schedules for their implementations and tasks for the farmers connected with these processes;
- c) making active biogas plants available to farmers and agricultural producers interested in their construction, for the purpose of familiarization with their operations and resultant benefits;
- d) organization of a series of trainings and lectures for farmers and agricultural producers on the topics connected with biogas installations as well as the utilization of local energy sources.

Responsibility for the above activities rests upon: Minister responsible for matters of agriculture (with the cooperation of agencies and institutions subordinated to the minister), the National Council of Agriculture Chambers.

## **7.3. Activities directed at self-governments and entrepreneurs**

Activities directed at self-governmental entities as well as other entrepreneurs should assure:

- a) a preparation of an informational program dedicated to the construction of agricultural biogas plants and the tasks connected therewith for the environmental and nature protection services at all levels of the local governments.
- b) making active biogas plants available to representatives of communes, self-governments, interested in their construction, for the purpose of familiarization with their principles of operation;
- c) organization of a series of trainings and topical conferences for communes, self-governments, entrepreneurs and all persons interested on the topics connected with biogas installations as well as the utilization of local energy sources (e.g. realization of films promoting the construction of agricultural biogas plants).

Responsibility for the above activities rests upon: ministers responsible for matters of agriculture and the environment (with the cooperation of agencies and institutions subordinate to the ministers).

## **8. Miscellaneous activities**

### **8.1. Realization and the actualization of the Directions**

The coordination of the realization of the hereby document rests upon the minister responsible for matters of the economy. The minister appropriate for the presentation of proposed amendments to the legal regulations and the applied activities, should no later than within the period of 1 year from the acceptance of the document by the Council of Ministers initiate the appropriate legislative procedures and appropriate activities. The sources of financing for the individual Directions activities, with the exception of those for which it has been specifically stipulated, will be the financial means guaranteed in the budgets of the appropriate disposers of such funds.

The institutions and entities responsible for the implementation of the document are obligated to monitor, within the scope of its properties, the progress of its implementation and realization. The monitoring is based on information concerning the state of implementation for appropriate activities, prepared at the closing of each calendar year. These informations will be prepared by the individual government departments involved in the realization of the Directions. Additionally, the appropriate data will originate from periodic reports prepared by the President of the Energy Regulatory Office, the President of the Agency for Agricultural Markets and potentially, non-government organizations (chambers and associations

concerned with the development of usage of reusable sources of energy). These informations will be passed to the minister appropriate to matters of the economy responsible for supervising the timeliness of the realization in accordance with the submitted schedule.

This monitoring is necessary for the evaluation of:

- a) the realization level of the document's assumptions;
- b) promotion of utilization of local renewable sources of energy;
- c) promotion of the development of biogas plants based especially on agricultural raw materials;
- d) economic profitability of the biogas plant utilization process;
- e) influence on the realization of goals connected with the limiting of green house gas emissions and the improvement of the status of energy safety.

The results of the monitoring will constitute a basis for the realization of the current evaluation as well as the modernization and modification of the document according to the needs.

## 8.2. Bodies responsible for the realization of the individual Directions

<b>Type of activity</b>	<b>Responsible body</b>
Research as well as informative and educational activities	Ministers specific to the issues of the economy, the environment, agriculture, science and higher education and the educational superintendents
Solutions in the scope of the Infrastructure and Environment Operational Programme	Ministers specific to the issues of the economy and matters of regional development
Solutions in the scope of energy law	Minister specific to the issues of the economy
Solutions in the scope of managing and utilizing the "Natura 2000" European network of protected areas and in the scope of waste management.	Minister specific to the issues of the environment
Solutions in the scope of fertilizers and fertilization of energy crops	Minister specific to the issues of agriculture
Research projects related to agricultural biogas plants	Minister specific to the issues of science and higher education