



BIOGAS REGIONS

Framework Conditions for Biogas Plant in Walloon region

SUMMARY

Report produced by Centre wallon de Recherches agronomiques as a partner to the Intelligent Energy for Europe project "Biogas Regions".

1 Corporate structure

The corporate structure must be a commercial structure because of the sell of energy (Ltd, ...). But the choice of a particularly commercial structure depends on the different subsidies requested.

2 Training of the operating personnel

No training session is required for the management of the biogas plant in Wallonia.

3 Choice of Site

In the Walloon region, a first pre-feasibility study is realized freely by the facilitator (the facilitator has been designated for advising industrials or farmers about biomethanation project). This study includes the land use planning and sector conformity; the biogas, electricity and heat production estimation based on local and regional potential substrate (quantity, quality, conformity); the investment costs, the potential subsidies and the biogas plant profitability evaluation. The agreement of the local population must also be taken in account.

4 Authorization procedure

4.1 Permit to obtain

In Walloon Region, there is a single permit, which includes the environmental permit and the urban permit (Decree of 11 March 1999, order of 4 July 2002 improved by order of 1st March 2007). If the quantity of non-dangerous waste treated is above 50 tons/day in settlement zone or above 100 tons/day in the others zones of the Soil Occupation Plan, an environmental impact study is required.

4.2 Commercial conditions

As a commercial structure, an identification taxes number is required.

4.3 Green certificate obtaining (see § 9.1)

All green power generation units must submit a prior application to Walloon Commission for Energy (CWaPE) for the issuance of green certificates. A certificate of origin issued by an approved inspection body must be attached to this application. Once this preliminary application for certification has been accepted by CWaPE, the producer receives a given number of green certificates based on his quarterly energy metering statements.

5 Components of the plant and security

The components of the plant are defined by the architect in accordance with the urban recommendation (permit). No specific regulations about construction and security exist for biogas plant. Anyway, the construction, operation and maintenance of the plant are subject to the local authorities recommendations about the security (DPA: authorization and prevention division, and/or fire department). The general work protection regulation and general electric facilities regulation must be considered. Before operating the plant, all the facilities must be controlled by a security representative of local authorities.

6 The substrate

The substrate types approved for biogas process are mentioned in the environmental permit. All toxic organic matters are prohibited. Maize and grass grown on set-aside land are allowed.

6.1 Treatment and analysis of substrate

No analysis is required for the owner's farm substrate. Substrate coming from others farm or industry must be mentioned in the environmental permit. Analysis of the content must be realized according to the permit and the Walloon waste office. The sludge from water treatment plant must be pre-treated by hygienization before the digestion as mentioned by the waste treatment regulation. All over the digestion, the fermentation parameters (pH, T°, CH₄, CO₂, fatty acid, H₂S, H₂,) must be reported.

6.2 Rules related to the storage conditions of ranch effluent

All the agricultural exploitations settled in Walloon Region have to respect minimal norms concerning the storage of ranch effluent. So, storages of 6 months are required for the liquid effluents. The solid manure storages have to be dimensioned according to the type of manure produced. The Ministry of Walloon region (DPA) imposes conditions of storage.

7 Gas utilisation

7.1 Heat

The heat supply from biogas plant to buildings around the farm is not submitted to specific regulations except of the urban permit concerning the distribution facilities. The tariff is decided by the seller.

7.2 Electricity

A supply licence is required to sell electricity according the decree of 12 April 2001 related to the electricity regional market organisation (translation of 96/92/CE). For connecting to the grid, the authorization depends on the agreement of the local/regional electricity supply company based on a feasibility study concerning the local grid capacity, the voltage, the situation, the facilities. The connection must follow the technical recommendations of

Synergrid (the electric/gas supply company federation). The cost of the connection is very high and totally in charge of the owner of the plant (around 25 000 to 50 000 €, in medium voltage for a farm unit). The feed-in tariffs is fixed by the local electricity supply company.

7.3 Feeding the biogas into the grid / or fuel applications: Not existing in Belgium

8 Use of digestate as bio-fertiliser

The use of digestate is allowed only if there is respect of the norms. If not, the digestate must be destroyed by incineration, co-compost or used as landfill or industrial wasteland cover. If the digestate characteristics are conform to the norm, the farmer receives a use certificate guarantying the quality of the output product and its utilisation in agriculture. The analysis must be carried out twice a year and cost 1,000 €/analysis. The legislation about this certificate is in the AGW of 14 June 2001.

The spreading on the agricultural land can be done only in respect with the Nitrogen Directive. Before the spreading of digestate, a comprehensive soil analysis must be carried out. The necessary data are the percentage of organic matter, of minerals and of heavy metals. This soil analysis costs 2,000 €.

The Nitrogen Directive: spreading regulation

The AGW related to the sustainable management of nitrogen in agriculture does not allow the spreading of fertilisers if it is only to cover the physiological needs of nitrogen of plants, attending to limit the waste nutritive elements. Maximum amounts of spreading nitrogen are defined. The limits are fixed in step with the type of affection of lands (meadows or arable lands) profited by fertiliser contributions, with the geographical situation of lands and with the integration or not of farmers in a Quality Approach. In the same way, the maximum amounts of fertilisers vary in function of the situation in a vulnerable area, in a zone which is submitted to particular environmental constraints or elsewhere in Walloon. According to the type of manure and soil cover, there are periods when fertilization is prohibited.

9 Subsidies

- **Green certificate:** In Walloon Region, a green certificate system is in operation since the 1st October 2002. This system is applied in order to support the production of green electricity. A green certificate is a transferable certificate issued to producers of green power for a number of kWh generated which is equal to MWh_e divided by the carbon dioxide saving rate. This saving rate is calculated by dividing the carbon dioxide gain achieved by the system under consideration by the carbon dioxide emissions of the traditional reference electric system (steam and gas turbine) defined and published annually by the Walloon Commission for Energy. The carbon dioxide emissions are those generated by the green power generation as a whole and include fuel production, emissions during combustion if applicable, and waste processing if applicable but also the transportation of external wastes

or fuel consumption for energy crops. The price of Green Certificates is guaranteed at a minimum price of 65 €/GC for a period of 15 years. But the average value is around 90€/GC and depends on the GC virtual market. The green producer may sell the green certificates to different actors of the market (power supply companies, the transmission system operator ELIA, the Federal Government).

- **Subsidies for the energy efficiency and promoting of a more rational use of energy in the private sector (AMURE):** for private companies. This aid covers 50% (with a maximum of 25 000 €) of the cost of an energy audit.

- **UREBA :** for municipalities, non profit organisations. Various supports are possible:

* 50% of the cost of an energy accounting installation

* 50% of the cost of an energy audit

* 50% of the cost of a pre-feasibility study

* 30% of the investment cost of a cogeneration plant or a renewable energy plant

- **Energy premium 2008-2009 for cogeneration plants:** for private companies and individuals. This premium covers 20% of the investment cost of the cogeneration plant with a maximum of 15 000 €. The target is small scale cogeneration plants.

- **Investment subsidies for the development of agriculture (AIDA):** subsidy for young farmers proposing a 3-year investment plan. The maximum amount is 250 000 € for buildings and 100 000 € for machines. The subsidy ranges from 10 to 30% of the investment plan.

- **Specific subsidy for farm biomethanation plants:** a premium additional price of 84.4 €/MWh is provided to 100% agricultural biomethanation plants. This premium price is offered for one or two years.

- **Incentives to promote the environment protection and the durable use of energy:** for SMEs investing in projects protecting the environment and/or developing the rational use of energy. The incentive brings on the overcost of a RES plant compared with a traditional fossil fuel installation. The minimum part of the investment cost supported by the company is 25 000 €. The incentive varies from 15 to 40% of the total investment cost.

10 Fiscal incentives

- **Exemption of real estate immovables withholding:** for private companies investing in real estate. The exemption duration varies from 3 to 7 years.

- **Tax deduction for investment:** for industrial, commercial, agricultural companies as well as for liberal professionals. The deductible quota is 13.5% from energy savings investments, patents, research and development investments for environment.

11 Avoidance of hazards

11.1 Security regulation for the agricultural biogas plant

The rules concern the construction, the exploitation and the maintenance of the plant. Plant that is in an agricultural area and managed by the workers of the plant.

- **Construction:** leakproof and biogas-resistant materials, gates, mechanisms against fire, firebreak, airing of the rooms and ventilations, an appropriate distance between the plant and the others constructions... These are part of the elements to be considered for the construction of a plant.

- **Electricity:** the wiring and the electrical equipment have to be in accordance with the rules of the general electric facilities regulation and with all the standards in application. A protection against lightning is required for the aerial constructions.

11.2 Safety measures

Safety boards have to be put near the dangerous areas (risk of explosion / burning, no smoking), monitoring of the plant (temperature, alarms,...)

11.3 Plant inspection

By the responsible authorities, before the beginning of the activities.

For further Information, please visit contact:



Sandrine Dufourny

Centre wallon de Recherches agronomiques - Departement Genie rural
Agricultural Research Centre - Agricultural Engineering Department

Chaussee de Namur, 146
B-5030 Gembloux (Belgique / Belgium)

Tel : +32 (0) 81 627 154
Fax : +32 (0) 81 615 847
E-Mail : s.dufourny@cra.wallonie.be