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Assessment of Biogas Policies in Bulgaria

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Denitsa Dimitrova, ENPRO

Iva Cheriyska, ENPRO

Krasin Georgiev, ENPRO

Dominik Rutz, WIP Renawable Energies

Heinz Prassl, Gerhard Agrinz GmbH

Konstantinos Sioulas, CRES

ENERGOPROEKT Jsc.
1407 Sofia, Bulgaria
51 James Boucher Blvd.

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Contents

1. Introduction

This report was written in the frame of the BIG>EAST project (EIE/07/214), which is supported by the European Commission within the Intelligent Energy for Europe Programme. The report aims to give an overview about current policies on biogas production, utilization and related issues in order to facilitate the broader implementation of biogas projects. Emphasis of this overview will be on policies in Bulgaria and in Europe, as it is one of a series of six reports dealing with the target countries of the BiG>East project: Bulgaria, Croatia, Greece, Latvia, Romania, and Slovenia. Thereby, policies in Bulgaria include legislation, tax policies, incentives, funding sources and waste treatment policies, which affect direct or indirect the success implementation of biogas projects.

Europe's current situation with exploding fossil energy prices and rising dependency on energy imports makes it highly necessary to produce and valorise biogas in terms of heat, electricity and fuel. In 2005 about 5.35 Mtoe of biogas were produced for energy uses in the European Union, nevertheless, the potential is estimated at more than 20 Mtoe.

Due to the lack of support mechanisms, in the last years, renewable energy sources (RES) in Bulgaria are not broadly developed. Bulgaria has recently adopted a new feed-in tariff and its effective implementation with measures to non-discriminatory access to the power grid and simplified licensing procedures will be the basis for a market uptake of RES in the country. Currently, the legal framework to allow non-discriminatory access to the power grid for independent renewable energy producers remains too vague to increase investor confidence[1]. Renewable and Alternative Energy Sources and Biofuels Act in Bulgaria was adopted in June 2007. However, the act does not yet include regulations in respect to biogas.

[1] **European Renewable Energy Council**, Renewable Energy Policy Review, BULGARIA: Monitoring and Evaluation of the RES Directives implementation in EU27 and policy recommendations to 2020.

2. EU Policies and Targets

2.1. Renewable energy policy in the European Union

The development of renewable energy - particularly energy from wind, water, solar power and biomass - is a central aim of the European Commission's energy policy. There are several reasons for this. Renewable energy has an important role to play in reducing Carbon Dioxide (CO_2) emissions - a major Community objective. Increasing the share of renewable energy in the energy balance enhances sustainability. It also helps to improve the security of energy supply by reducing the Community's growing dependence on imported energy sources. Renewable energy sources are expected to be economically competitive with conventional energy sources in the medium to long term.[2]

The European Commission has set the target to reduce greenhouse gas emissions from developed countries by 30% by 2020 and it has already committed to cutting its own emissions by at least 20% and would increase this reduction under a satisfactory global agreement[3]. In January 2007 the European Commission presented a "Renewable Energy Roadmap" as part of its "energy-climate change" package[4]. This Roadmap was endorsed by the Commission in March 2007 with the following targets:

- A binding target to have 20% of the EU's overall energy consumption coming from renewables by 2020, and;
- A binding minimum target for each member state to achieve at least 10% of their transport fuel consumption from biofuels. However, the binding character of this target is "subject to production being sustainable" and to "second-generation biofuels becoming commercially available".

In November 2007, the European Commission presented a "Strategic Energy Technology Plan (SET-Plan) - Towards a low carbon future"[5]. The SET-Plan proposes to deliver the following results: (i) a new joint strategic planning, (ii) a more effective implementation, (iii) an increase in resources, and (iv) a new and reinforced approach to international cooperation. The Commission hopes for endorsement (and financing commitments) from EU leaders for the SET-Plan in March 2008.

[2] Source: http://ec.europa.eu/energy/res/index_en.htm

[3] Source: COM(2007)1final „An Energy Policy for Europe"

[4] Source: COM(2006)848final „Renewable Energy Road Map: Renewable energies in the 21st century: building a more sustainable future" (10.1.2007)

[5] Source: COM(2007) 723 final „A EUROPEAN STRATEGIC ENERGY TECHNOLOGY PLAN (SET-PLAN) Towards a low carbon future"

Furthermore, in January 2008 the Commission has put forward a larger package on renewable energies and climate change and published a Draft Directive "on the promotion of the use of energy from renewable sources which has to be reviewed and approved by the European Parliament and the Council before entering into force. This Directive is a comprehensive 'framework directive' on renewable energies including an update of the biofuels directive.

2.2. Biogas policies and markets in the European Union

Within the diversification of energy resources and the increased reliance on renewable energy resources, biomass is considered to play an outstanding role in Europe's energy policy. As highlighted in the Commission Biomass Action Plan[6], published on 7 December 2005, "Energy is key in helping Europe to achieve its objectives for growth, jobs and sustainability". The increasing oil prices and Europe's dependency on energy imports are considered to menace the economic growth within the European Community. In 2005, the EU met about 4% of its energy needs from biomass. The main objective of the Biomass Action Plan is to double this share by 2010. The plan would reduce oil imports by 8%, prevent greenhouse gas emissions worth 209 million tons CO_2-equivalent per year and create up to 300,000 new jobs in the agricultural and forestry sector.

Currently, the biogas sector in some European countries is faced by rapid technical and non-technical developments and innovations, and biogas markets are growing in these countries at a considerable pace. For instance, in Germany, the biogas market is booming although there was a significant decrease of new installed biogas plants in 2007. Until the end of 2007 about 3,700 biogas plants were in operation. Most of the newly installed biogas plants in Germany have an electric capacity of 500 kW by using CHP installations and are operated with energy crops as feedstock. New applications such as biogas up-grading to vehicle fuel (in Jameln) and feeding into the grid (in Pliening, Kerpen and Straelen) have come into operation. In Austria the number of biogas plants has increased from about 170 in 2004 to more than 340 in 2005 and to almost 600 in 2006, the majority of plants having an electric capacity of 100 to 500 kW. By September 2006, 62 landfill gas recovery plants, 134 sewage sludge digesters, 350 biogas and co-fermentation plants, 25 anaerobic waste treatment plants (industry), and 15 biowaste digestion plants (municipalities) were in operation. Finally, in Denmark the political aim is to produce 8 PJ from biogas through the construction of 40 new biogas plants by 2008. This target means a doubling of the present production and an increase of 1 PJ per year.

At the same time the biogas market is very small in many other European countries. This situation needs to be changed in the next years since these countries have to take actions in order to fulfill Europe's energy targets.

[6] COM (2005) 628: "Biomass Action Plan"

2.3. Legislation on biogas and related issues in the European Union

The production and utilization of biogas is affected and influenced by many European and national legislations.

Decision-making at European Union level involves various European institutions, in particular the European Commission, the European Parliament (EP), and the Council of the European Union. In general it is the European Commission that proposes new legislation, but it is the Council and Parliament that pass the laws. Other institutions and bodies also have roles to play. The rules and procedures for EU decision-making are laid down in the treaties. Every proposal for a new European law is based on a specific treaty article, referred to as the 'legal basis' of the proposal. This determines which legislative procedure must be followed. The three main procedures are 'consultation', 'assent' and 'co-decision'.

The following section gives an overview about European Directives and Regulations which are related to biogas production and utilization as well as to other important issues related to biogas. They may affect the European Biogas market directly or indirectly. The definitions about the borders of 'biogas production' allow a certain amount of flexibility, since many factors are important during the whole life cycle from agricultural feedstock production to the end use of biogas. Only the most important legislations were selected and briefly described (see Annex 1).

2.3.1 Directives

A directive is a legislative act of the European Union which requires member states to achieve a particular result without dictating the means of achieving that result. It can be distinguished from European Union regulations which are self-executing and do not require any implementing measures. Directives normally leave member states with a certain amount of flexibility as to the exact rules to be adopted. Directives can be adopted by means of a variety of legislative procedures depending on its subject matter. An overview of European Directives on biogas is provided by Rutz & Prassl (2008)[7] and in Annex 1.

2.3.2 Regulations

A regulation is a legislative act of the European Union which becomes immediately enforceable as law in all member states simultaneously. Regulations can be distinguished from directives which, at least in principle, need to be transposed in national law. Under the European Constitution regulations would have become known as "European laws" but

[7] Rutz D., Prassl H. (2008): Assessment of Biogas Policies in the European Union. – Report of the BiG>East Project; www.big-east.eu

this proposal has since been dropped. An overview of European Regulations on biogas is provided by Rutz & Prassl (2008)[8] and in Annex 1.

2.4. Summary on European biogas legislation

Although currently no specific Directive or Regulation exists which is only dedicated to the production and use of biogas, the need for the implementation of a legislative framework on biogas is highlighted by many institutions and stakeholders. For example the Committee on Agriculture and Rural Development of the European Parliament has recently drafted a report[9] and acknowledges biogas as a vital energy resource that contributes to sustainable economic, agricultural and rural development and environmental protection. It furthermore encourages both the European Union and the Member States to exploit the huge potential in biogas by creating a favorable environment as well as maintaining and developing support schemes to inspire investment in and sustenance of biogas plants.

More specifically, the Committee on Agriculture and Rural Development of the European Parliament highlights the need for a new biogas directive and review of legislation:

- First and foremost, an EU-directive on biogas production is needed, with specific targets for the agricultural biogas share within the target for renewable energy production, statistical elements, measures for construction and promotion of biogas-installations based on a national or regional impact evaluation, measures for dissemination and promotion of results gained from prior experiences, call for national and regional planning in order to restrict legal and administrative hindrances, and recommendations for the minimum level and yearly adjustment mechanism of payment for ‘green-electricity’ and 'green gas'.
- The legislation on the use of residues from biogas installations should be revised.
- A ban should be considered on using growth enhancers in animal feed containing heavy metals if this should be a European wide problem for later use of biogas residues on fields.
- The effective enforcement of the IPPC and Nitrates Directives are crucial, along with the Sewage Sludge Directive, Water Framework Directive, Birds directive, Habitats Directive and the Heavy Metals legislation.
- A strategy is needed to include biogas installations into the Kyoto-mechanism.
- EU-wide legislation is needed to ensure that biogas - upgraded to natural gas quality – can be fed into the natural gas network.

[8] Rutz D., Prassl H. (2008): Assessment of Biogas Policies in the European Union. – Report of the BiG>East Project; www.big-east.eu

[9] Source: Draft Report on Sustainable Agriculture and Biogas: a need for review of EU-legislation (2007/2107(INI)) 29.11.2007

- Proposals are needed for further enhancing the use of animal by-products for biogas as announced in the 'Biomass action plan',
- Member States should include biogas in their mid-term evaluation of existing rural and regional development programmes and propose actions for the future. Rural Development strategies, including LEADER projects should contain development scenarios for biomass and biogas utilities.
- The Commission should present a coherent report on European biogas production to the European Parliament taking into account the above mentioned proposals and the progress made.
- Efforts should be made to fund research, development and demonstration.

3. Renewable energies support instruments in Bulgaria

Due to the lack of the support mechanisms, in the last few years, Renewable Energy Sources (RES) in Bulgaria are not broadly developed. The support scheme for electricity generated from RES has no limitations with respect to technologies and size of installed capacity in the power plant, including for hydropower plants with a capacity of up to 10 MW. No license is required for the generation of electricity from RES with a capacity of up to 5 MW and for thermal energy production. For highly efficient cogeneration of electricity and heat, the support scheme is valid for electricity quantities up to 50 MWh per hour. There exists only legislative support for biofuels. The producers and importers do have to use a certain percent of biofuels on the market.

3.1. Supporting mechanisms for electricity production from Renewables

In Bulgaria there are two mechanisms, supporting the electricity produced from Renewables:

- Support trough preferential prices and
- Loan support.

3.1.1 Support trough preferential prices

There is a combination of feed-in tariffs and green certificates as support instruments in the Bulgarian energy sector. The Energy Act of Republic of Bulgaria[10] oblige all national operators to buy all electricity produced from RES and small hydro power stations (up to 10 MW) at preferential prices from 01.01.2007 for a period of 12 years. The tariffs are arranged by ministerial order and will list the preferential prices for each year until 2022. They support existing producers or new producers, who succeed in starting RES production by 31.12.2010. It is already a fact that the existing preferential rates for some RES stimulate private investors. The number of Mini Water Power Stations (MWPS) for example has increased significantly in the past few years - about 800 Water Power Stations (WPS) have already been built and by the year 2009 their number will "greatly exceed 1,000"[11].
Fixed feed-in prices for electricity from RES in Bulgaria are presented in Table 1.

Tabl. 1, Fixed feed-in prices for Electricity from Renewable Energy Sources

Renewables	**EURO/MWh (**excl. of VAT)
Small Hydropower (<10 MW)	43,55
Wind Power (< 2250 full load hours)	89,51
Wind Power (> 2250 full load hours)	79,79
Photovoltaic (< 5 kW)	400,00
Photovoltaic (> 5 kW)	367,3
Cogeneration Biomass (< 5 MW)	94,1
Cogeneration Biomass (agricultural residues, loppings etc.) (< 5 MW)	110,00
Cogeneration Biomass (energy crops, e.g. miscanthus, etc.) (< 5 MW)	82,9
Cogeneration (Gas)	43,55
Biomass co-firing	-
Biogas	-
Sales price of the national utility to public energy suppliers	31,29

Sources: EnerCEE – Bulgaria, http://www.energyagency.at/enercee/bg/supplybycarrier.en.htm

[10] The Energy Act of Republic of Bulgaria was promulgated in 9 December 2003 and the last amendment is from 8 September 2006.

[11] „Assessment of national nature-conservation policy in the context of EU accession and preparedness for achieving the 2010 target".

The Green certificates system in Bulgaria provides support in the following circumstances:

- Till 2018 for the existing electricity generators using RES, including HPPs<10MW;
- During the next 12 years after starting electricity generation (and starting not later than 31.12.2011) for all the new electricity generators using RES, including HPPs <10 MW;
- Till 2018 for the existing generators of electricity from highly efficient cogeneration of electricity and heat;
- During the next 12 years after starting electricity generation (and starting not later than 31.12.2011) for all the new generators of electricity from highly efficient cogeneration of electricity and heat[12].

3.1.2 Loan support

In 2003 a Memorandum of Understanding with the European Bank for Reconstruction and Development (EBRD) was signed, according to which a € 50 million loan and a € 10 million grant were issued to establish a credit line for small Energy Efficiency (EE) and RES projects in the private sector[13].

Loans for EE and RES projects in industry have been in operation from January 2005. These amount to € 60 million and are provided by the Bulgarian government, the European Commission and the EBRD. The largest credits amount to € 1.5 million, of which 7.5% take the form of grants for EE projects. When using the credit lines for renewable energy projects, 20% of the investment is refunded after the project concludes. The successful implementation of this mechanism is the reason for its expansion at the beginning of 2005 with a further € 60 million.

EBRD-Bulgaria is actively promoting the development of renewable energy sources within the context of its Sustainable Energy Initiative, which was launched in May 2006. Under this initiative, the EBRD is sharply increasing its investments in energy efficiency, Renewables and clean energy projects across its countries of operation.

The Bank is boosting its support for the development of renewable energy in its region with a €54 million loan for the construction of nine small hydro power plants along the river Iskar in Bulgaria. The hydro plants will be built, owned and operated by HPP Svoge, a company 90 percent owned by a subsidiary of the Petrolvilla & Bortolotti group, an Italian provider of energy and energy-related services, and 10 percent by the municipality of Svoge. Once operational, the nine small HPPs will have a total capacity of 26 MW.
The mini hydro loan will consist of an A-loan of up to €34 million provided by the EBRD,

[12] **SOLID DER Project** - „Economic, policy and regulatory barriers and solutions for integrating more distributed energy resources in electricity supply".

[13] „Bulgarian Enery Sector 2001-2004". Ministry of Energy and Energy Resources , Communication Strategy for the Accession of Bulgaria to the European Union.

Co-operation grants for environmental and technical due diligence were provided by the UK Department for International Development and by the Italian government[14].

3.2. Supporting mechanisms for RES heating and cooling

Bulgaria does not provide financial incentives for the production of heat from RES. However, Bulgarian Energy Efficiency and Renewable Energy Credit line established investment subsidies (support level - 20 per cent grant) for RES heating and cooling technologies. Compulsory connection to the electricity transfer and distribution network currently applies only to combine thermoelectric energy production units of up to 10 MW on biomass, biogas and biofuels. But even this incentive, which relates to the general case of co-generation rather than to the production of thermal energy from renewable sources, only applies to the preferential purchase of electrical energy, not thermal energy.

3.3. Support for Biofuels

3.3.1 Quota Obligations

Resource	Quota in percent (per year)
Biofuels	2 % in 2008 3.5 % in 2009 5.75 % in 2010 8 % in 2015 10 % in 2020

Source: National long-term programme for the use of biofuels in transport 2007-2020.

3.3.2 Tax exemption for biofuels

Biofuels, if not blended with other fuels, have been exempt from excise tax since 2005 (note: not all types of bioethanol are included). There are also plans for the compulsory mixing of biofuels with liquid fuels of petroleum origin to be carried out at tax warehouses licensed under the Excise Duties and Tax Warehouses Act[15].

[14] EBRD: Bulgaria – Country Factsheet, http://www.ebrd.com/pubs/factsh/country/bulgaria.pdf

[15] **European Renewable Energy Council**, Renewable Energy Policy Review, BULGARIA: Monitoring and Evaluation of the RES Directives implementation in EU27 and policy recommendations to 2020.

3.4. Support for all RES

Usually the owners of RES projects receive a 20 % discount on the principal of the loan after the completion of the project. RES projects in Bulgaria can be supported through:

- The **Kozloduy International Decommissioning Support Fund (KIDSF) administered by EBRD**. The financial support under KIDSF could also be for utilization of RES (e.g. wind, hydro, biomass, biogas, ect.). The support could be pure grant or partial financing in various co-financing structures with other loan applications. In future: The KIDSF is in the position to consider new projects for grant funding to support off-site decommissioning infrastructure works and promote new end-consumer efficiency measures in the residential sector. [16]
- The **Bulgarian Energy Efficiency and Renewable Energy Credit Line (BEERECL)** developed by the European Bank for Reconstruction and Development (EBRD) under the Kozloduy International Fund is being implemented at present. To date 25 projects have been financed under the BEERECL, receiving loans worth more than € 12.8 million and worth total projects value of over € 25.3 million. These projects will generate annually more than 234,000 MWh of electricity and more than 198,000 MWh heat energy, over 8,000 MWh electricity savings and more than 160,900 GJ of heat energy savings, and around 164,700 tonnes of carbon emissions reductions. There is an increased interest of the local banks to invest in such type of projects, developing programmes, conforming to their investment policy of the banks and directed to their realization[17].
- **The program between United States Agency for International Development USAID and some banks (credit lines)**. Under the programme USAID will guarantee for up to 50% of the credit. Additionally a consultant helps the clients develop the respective project;
- **The adopted new law on RES** will help to overcome the corresponding financial incentives.

[16] http://www.ebrd.com/country/sector/nuclear/overview/funds/kidsf.htm

[17] http://www.beerecl.com/

4. Renewable energies Policies in Bulgaria

4.1. Legislative framework on all RES

Renewable and Alternative Energy Sources and Biofuels Act – Promulgated in the State Gazette № 49/19.06.2007

The main goals pursued by the Renewable and Alternative Energy Sources (AES) and Biofuels Act, which is in compliance with EU legislation, include the diversification of energy supplies, reducing the cost of energy resources and energy imports, boosting the capacity of small and medium-sized enterprises, energy producers from RES and AES and producers of biofuels and other renewable fuels, environmental protection and establishing the conditions to achieve sustainable development at the local and regional level. The goals will be achieved by encouraging the development and use of technology for the production and use of energy generated from RES and AES and promoting the development and application of technologies for the production and use of biofuels and other renewable fuels.

This Act ensures full harmonisation with *Directive 2001/77/EC* (see Annex 1) on the promotion of electricity produced from renewable energy sources in the internal electricity market and *Directive 2003/30/EC* (see Annex 1) on the promotion of the use of biofuels or other renewable fuels for transport.

The Act regulates the public relationships related to encouraging the production and use of electric, heat and/or cooling energy from RES and AES, as well as production and the use of biofuels.

The provisions of the new law introduce requirements on the production and the use of biofuels that will result in reducing the harmful emissions from the transport sector and the use of conventional fuels.

The Act also envisages the development of national indicative targets for:

1. encouraging the use of electric energy generated from RES;
2. encouraging the use of biofuels in the transport sector.

The Act also envisages the development of national indicative targets to encourage the use of Renewable and Alternative Energy Sources and Biofuels in the transport sector, to be established as a minimum share of the final annual consumption of automotive petrol and diesel fuel. The targets will be adopted by the Council of Ministers upon proposal by the Minister for Economy and Energy and Minister for Transport.

Energy Act – Promulgated in the State Gazette № 107/09.12.2003, last amended in the State Gazette № 74/08.09.2006

This Act regulates the social relations associated with the activities of generation, import and export, transmission, transit transmission, distribution of electricity, heat and natural gas, transmission of crude oil and petroleum products trough pipelines, trade in electricity,

heat and natural gas, and utilization of renewable energy sources, as well as the powers of state bodies in formulating energy policy, regulation and control.

The principle purposes of this Act are to create conditions for:

1. high-quality and secure supply of electricity, heat and natural gas to the general public;
2. energy development and the energy security of the country trough efficient use of energy and energy resources;
3. creation and development of a competitive and financially stable energy market;
4. energy provision at minimum cost;
5. sustainable development in the utilization of renewable energy sources, including production of electricity from renewable energy sources in the interests of environmental protection;
6. promotion of cogeneration;
7. development of infrastructures for transmission of electricity, natural gas, crude oil or petroleum products within and trough the national territory;
8. the generation, import, export, transmission, transit transmission, distribution and trade in electricity, heat, natural gas, crude oil and petroleum products shall be carried out while guaranteeing the protection of the life and health of citizens, property, the environment, the interests of consumers, and national interests.

Energy Efficiency Act - Promulgated in the State Gazette № 18/5 March 2004 amended SG. 74/8 September 2006; amended SG 55/6 June 2007

This Act shall regulate the public relations with regard to the implementation of the government policy for energy efficiency raising and providing energy efficient services. The objective of the Act is to encourage the energy efficiency through a system of measures and activities on national, industry, regional and municipal level as a major factor for enhancing the competitiveness of the economy, electric power supplies security and the protection of the environment.

Ordinance № 16-27/22.01.2008

This Ordinance defines the circumstances and order for making an assessment of the available and prognosis potential of resource for production of energy from renewable and/or alternative energy sources.

Ordinance № 16-28/22.01.2008

This Ordinance defines the content, circumstances, order and the method for submitting of information about produced, purchased and sold energy quantities of renewable and alternative energy sources and biofuels.

National Long-Term Programme to Encourage the Use of Renewable Energy Sources for 2005-2015/December 2005

The National Long-Term Programme to Encourage the Use of RES for 2005-2015 (NLTPRES) was developed in compliance with the requirements of Art. 4, Para. 5, Para. 5, Para. 5, Para. 2, point 9 of the Energy Act and its implementing legislation. It is in line with the overall concept for the development of RES in the country, with the indicative targets for electric energy generation from RES and the means to achieve these.

The Programme formulates measures and policies to encourage the use of RES in the national energy balance, by taking into account:

1. the condition of RES use in the country;
2. the need for the accelerated use of RES in the next ten-year period;
3. the mutual influence of the reduced energy efficiency and the expanded use of RES in the country from the point of view of achieving sustainable energy development.

National Short-Term Programme to Encourage the Use of Renewable Energy Sources for 2007

The strategic aspects of accelerating and encouraging the use of RES energy resources are outlined in the NLTP-RES. The implementation of the Programme for 2007 is a step towards achieving the NLTP-RES goal: reducing the use of liquid fuels for the production of heat energy and the use of electricity for heating. The Programme implementation will carry out a stage of the national policy to encourage the use of RES. The Programme contains a set of projects for the use of solar energy for household water heating in government-owned buildings.

National Long-Term Programme to Encourage the Use of Biofuels in the Transport Sector for 2008-2020/November 2007

The National Long-Term Programme to Encourage the Use of Biofuels in the Transport Sector 2008-2020 was developed in accordance with the requirements of Art. 5, Para. 1, point. 3 and Art. 5, Para. 1, point. 5 of ARSEB for drafting and submission to the Council of Ministers of national indicative targets for the use of biofuel and other renewable fuels in transport. The Programme was adopted by Decision under Point №2 of Minutes №43 of a Council of Ministers' meeting held on 15 November.

When setting the indicative targets, the Programme takes into account Directive 2003/30/EC on encouraging the use of biofuels or other renewable fuels in the transport sector and the latest decisions of the European Council of 8-9 March 2007 setting new higher binding minimum targets for the use of biofuel in the transport sector for each Member State.

The drafting, adoption and implementation of the Programme is an important step towards encouraging the use of biofuels in the transport sector and the wider use of biomass, ensuring the sustainable development of agriculture and forestry.

The wider use of biofuels in transport is part of the package of measures required to achieve the goals set in the Kyoto Protocol. The increased use of biofuels in transport is one of the tools that the Community could use to reduce the use of imported fuels and energy, and therefore to ensure the security of energy supply in the medium-term and long-term perspective.

National Long-Term Programme to Encourage the Use of Biomass for 2008-2020/June 2008

The National Long-Term Programme to Encourage the Use of RES 2008-2020 establishes the general framework of the opportunities to utilize biomass for energy purposes.

Based on the vision and in compliance with the provisions of Art. 5, Para. 1, point. 4 and art. 5, Para. 2 of the Act on Renewable Sources of Energy and Biofuels, after the adoption of the Long-Term Programme, short-term Programmes will be developed to promote the use of biomass in Bulgaria.

These will establish the strategic targets for the period of action of the Programme and will set out the concrete measures and activities to achieve these targets. Each of the short-term Programmes will contain a current assessment of the funds needed, based on the priorities and depending on the dynamics and development of the energy market and biomass technologies, etc.

The short-term Programmes will include an Action Plan for the respective period, showing the institutions responsible for the implementation of activities, as well as the deadlines for implementation.

For the purpose of reporting the effects from the implementation of the short-term Programmes, the relevant indicators will be established to measure the implementation of Programme-specific activities.

The national policy in the area of renewable energy sources, and in particular the use of biomass as an energy source, is being carried out by the Council of Ministers through the Minister of Economy and Energy. The national competent authority for the implementation of the National Programme is the Ministry of Economy and Energy. Every three years, the Minister for Economy and Energy will report to the Council of Ministers on measures implementing the Programme. To achieve this, the Ministry of Economy and Energy will have to draft the necessary reports on the course of its implementation, by organizing and coordinating the activity of other institutions to collect the necessary information.

National Strategy Plan for Rural Development for 2007-2013/2006

The objectives of the National Strategic Rural Development Plan are:

1. to construct sites for manure storage and purification installations, especially in the nitrate-vulnerable zones;
2. to investment in on-farm use of RES, improvement of on-farm water management, new water saving technologies, pesticide handling technologies, organic farming, etc;

3. access to modernisation measures for all agricultural and food industry SME's;
4. to put on skills development and transfer of knowledge on new technologies, renewable energy sources, bio-energy, organic products, training farmers for implementation of cross-compliance.

The main European and Bulgarian legislative documents supporting renewable energy production and use as well as biofuels and related biogas issues are listed in Annex 1 and Annex 2 respectively.

4.2. Legislative framework on biogas

In adopted in June 2007 Renewable and Alternative Energy Sources and Biofuels Act there are no regulations in respect to biogas yet. Similarly Bulgarian regulations do not provide specific biogas support instruments as feed-in tariff system, quota regulation/certificate mechanisms, tax incentives/investments grants and/or other financial resources. Future development of biogas sector is highly dependant on the willingness of politicians and policy makers that formulate policies and introduce legislations to do so.

5. Renewable energies contribution to national targets

According to the main Targets in EU policies in Bulgaria the government have taken the follow decisions:

- To increase the using of Biofuels consumption for transport to 5,75% until 2010, according to *Directive 2003/30/EC* (see Annex 1);
- Share of RES – 11%. Indicative target, set in accordance with *Directive 2001/77/EC* (see Annex 1) and laid down in the EU accession obligation;
- Kyoto protocol. Obligation – 8% reduction of Greenhouse gases emission (based on 1988 levels). Actual reduction is 50%. Possibility to participate in the European emission trading scheme;
- No targets for the electricity and heat produced from CHP;
- No targets for use of Renewables for heating;
- Carry out a number of studies on the biomass potential and the feasibility of different applications;
- Labeling of biomass stoves and boilers;
- Mechanisms for support of efficient biomass utilization technologies, such as provision of efficient boilers to the low-income population.

6. Conclusions

Environmental awareness in Bulgaria is growing in the last years and RES are seen as a clean future source of energy. Decentralization and larger autonomy of local and regional authorities' leads to development of RES as they see triple dividends: environmental improvement, economic development and increased employment. The fact that biogas technologies can bring a higher degree of independence from fossil-fuel energy sources has to be strongly promoted.

The current Bulgarian legislative framework is adequate for further RES penetration, except of biogas. At the moment there is no Act, Ordinance or Programme concerning the biogas implementation and penetration in Bulgaria.

In order to promote all RES, Bulgaria is currently implementing the Bulgarian Energy Efficiency and Renewable Energy Credit Line (BEERECL). RES projects are eligible for a 20% grant. Loans worth more than EUR 12.8 million have already been granted[18]. Reform is needed for the promotion of biogas.

[18] Source : www.erec.org

Annex 1: EU Legislation

Directives

► DIRECTIVE **2000/76/EC**

"on the **incineration of waste**"

To prevent and limit negative environmental effects by emissions into air, soil, surface and ground-water, and the resulting risks to human health, from the incineration and co-incineration of waste.

► DIRECTIVE **2001/77/EC**

„on the promotion of **electricity produced from renewable energy sources** in the internal electricity market"

The purpose of this Directive is to promote an increase in the contribution of renewable energy sources to electricity production in the internal market for electricity and to create a basis for a future Community framework thereof.

For the purposes of this Directive, the following definition applies: 'renewable energy sources' shall mean renewable non-fossil energy sources (wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases);

► DIRECTIVE **2001/80/EC**

"on the **limitation of emissions of certain pollutants** into the air from large combustion plants"

This Directive shall apply to combustion plants, the rated thermal input of which is equal to or greater than 50 MW, irrespective of the type of fuel used (solid, liquid or gaseous).

► DIRECTIVE **2002/91/EC**

„on the **energy performance of buildings**"

The objective of this Directive is to promote the improvement of the energy performance of buildings within the Community, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost-effectiveness.

Article 5 of the Directive is related to new buildings and is relevant to the use of biogas since Member States shall take the necessary measures to ensure that new buildings meet the minimum energy performance requirements referred to in Article 4. For new buildings with a total useful floor area over 1 000 m^2, Member States shall ensure that the technical, environmental and economic feasibility of alternative systems such as:

- decentralized energy supply systems based on renewable energy,
- CHP,
- district or block heating or cooling, if available,
- heat pumps, under certain conditions,

is considered and is taken into account before construction starts.

► DIRECTIVE **2003/30/EC**

„on the promotion of the use of **biofuels** or other renewable fuels for transport"

This Directive aims at promoting the use of biofuels or other renewable fuels to replace diesel or petrol for transport purposes in each Member State, with a view to contributing to objectives such as meeting climate change commitments, environmentally friendly security of supply and promoting renewable energy sources.
Upgraded biogas (biomethane) can be used as renewable transport fuel. For the purpose of this Directive, the following definitions are related to the biogas sector:

- 'biofuels' means liquid or gaseous fuel for transport produced from biomass;
- 'biomass' means the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste;
- 'biogas': a fuel gas produced from biomass and/or from the biodegradable fraction of waste, that can be purified to natural gas quality, to be used as biofuel, or woodgas;

► DIRECTIVE **2003/55/EC**

"concerning common rules for the **internal market in natural gas** and repealing Directive 98/30/EC"

This Directive establishes common rules for the transmission, distribution, supply and storage of natural gas. It lays down the rules relating to the organisation and functioning of the natural gas sector, access to the market, the criteria and procedures applicable to the granting of authorizations for transmission, distribution, supply and storage of natural gas and the operation of systems.
The rules established by this Directive for natural gas, including liquefied natural gas (LNG), also applies to biogas and gas from biomass or other types of gas in so far as such gases can technically and safely be injected into, and transported through, the natural gas system.
Since this directive was introduced, biogas industry has been working to obtain a priority for biogas feed-in into the pipeline system, analogous to EEG in Germany. In Germany it is possible to feed biogas into the natural gas system.

► DIRECTIVE **2003/87/EC**

„establishing a scheme for **greenhouse gas emission allowance trading** within the Community and amending Council Directive 96/61/EC"

This Directive establishes a scheme for greenhouse gas emission allowance trading within the Community (hereinafter referred to as the 'Community scheme') in order to promote reductions of greenhouse gas emissions in a cost-effective and economically efficient manner.

► DIRECTIVE **2004/8/EC**

„on the promotion of **cogeneration** amending Directive 92/42/EEC"

The purpose of this Directive is to increase energy efficiency and improve security of supply by creating a framework for promotion and development of high efficiency cogeneration of heat and power based on useful heat demand and primary energy savings in the internal energy market, taking into account the specific national circumstances especially concerning climatic and economic conditions.
Cogeneration technologies covered by this Directive are

(a) Combined cycle gas turbine with heat recovery
(b) Steam backpressure turbine
(c) Steam condensing extraction turbine
(d) Gas turbine with heat recovery
(e) Internal combustion engine
(f) Microturbines
(g) Stirling engines
(h) Fuel cells
(i) Steam engines
(j) Organic Rankine cycles
(k) Any other type of technology or combination thereof falling under the definition laid down in Article 3(a)

► DIRECTIVE **2006/12/EC**

„on **waste**“

For the purposes of this Directive 'waste' shall mean any substance or object in the categories set out in Annex I of this directive (e.g. industrial waste, agricultural waste, waste from households, etc.) which the holder discards or intends or is required to discard. However, gaseous effluents emitted into the atmosphere, animal carcasses and the following agricultural waste (faecal matter and other natural, non dangerous substances used in farming) and waste waters, with the exception of waste in liquid form are excluded from this directive since these materials are covered by other directives.

The directive requests Member States to take appropriate measures to encourage the prevention or reduction of waste production and its harmfulness, in particular by:

(i) the development of clean technologies more sparing in their use of natural resources;

(ii) the technical development and marketing of products designed so as to make no contribution or to make the smallest possible contribution, by the nature of their manufacture, use or disposal, to increasing the amount or harmfulness of waste and pollution hazards;

(iii) the development of appropriate techniques for the final disposal of dangerous substances contained in waste destined for recovery;

It also requests Member States to take appropriate measures to encourage

(i) the recovery of waste by means of recycling, reuse or reclamation or any other process with a view to extracting secondary raw materials; or

(ii) the use of waste as a source of energy.

► COUNCIL DIRECTIVE **86/278/EEC**

"on the protection of the environment, and in particular of the soil, when **sewage sludge** is used in agriculture"

The purpose of this Directive is to regulate the use of sewage sludge in agriculture in such a way as to prevent harmful effects on soil, vegetation, animals and man, thereby encouraging the correct use of such sewage sludge.

► COUNCIL DIRECTIVE **91/676/EEC**

„concerning the protection of waters against pollution caused by **nitrates** from agricultural sources“

This Directive has the objective to reduce water pollution caused or induced by nitrates from agricultural sources and to prevent further such pollution.
With the aim of providing for all waters a general level of protection against pollution, Member States shall, within a two-year period following the notification of this Directive: (a) establish a code or codes of good agricultural practice, to be implemented by farmers on a voluntary basis, which should contain provisions covering at least the items mentioned in Annex II A of the Directive, and (b) set up where necessary a programme, including the provision of training and information for farmers, promoting the application of the code(s) of good agricultural practice.
Furthermore, Member States shall submit to the Commission details of their codes of good agricultural practice and the Commission shall include information on these codes in the report referred to in Article 11. In the light of the information received, the Commission may, if it considers it necessary, make appropriate proposals to the Council.

► COUNCIL DIRECTIVE **96/61/EC**

“concerning **integrated pollution prevention and control**”

The purpose of this Directive is to achieve integrated prevention and control of pollution arising from the activities listed in Annex I. It lays down measures designed to prevent or, where that is not practicable, to reduce emissions in the air, water and land from the abovementioned activities, including measures concerning waste, in order to achieve a high level of protection of the environment taken as a whole, without prejudice to Directive 85/337/EEC and other relevant Community provisions.

► COUNCIL DIRECTIVE **1999/31/EC**

“on the **landfill** of waste”

The EU Landfill Directive represents a step change in the way we dispose of waste in this country and sets demanding targets to reduce the amount of biodegradable municipal waste that is landfilled. These targets are:

- By 2010 to reduce biodegradable municipal waste landfilled to 75% of that produced in 1995
- By 2013 to reduce biodegradable municipal waste landfilled to 50% of the produced in 1995
- By 2020 to reduce biodegradable municipal waste landfilled to 35% of that produced in 1995.

► COUNCIL DIRECTIVE **2003/96/EC**

“restructuring the Community framework for the **taxation of energy products and electricity**”

The Directive widens the scope of the EU's minimum rate system for energy products, previously limited to mineral oils, to all energy products including coal, natural gas and electricity. In particular, the Directive will:

- reduce distortions of competition that currently exist between Member States as a result of divergent rates of tax on energy products;
- reduce distortions of competition between mineral oils and the other energy products that have not been subject to Community tax legislation up to now;
- increase incentives to use energy more efficiently (to reduce dependency on imported energy and to cut carbon dioxide emissions); and
- allow Member States to offer companies tax incentives in return for specific undertakings to reduce emissions.

► COUNCIL DIRECTIVE **2004/67/EC**

"concerning measures to safeguard **security of natural gas supply**"

This Directive establishes measures to safeguard an adequate level for the security of gas supply. These measures also contribute to the proper functioning of the internal gas market. It establishes a common framework within which Member States shall define general, transparent and non-discriminatory security of supply policies compatible with the requirements of a competitive internal gas market; clarify the general roles and responsibilities of the different market players and implement specific non-discriminatory procedures to safeguard security of gas supply.

This directive also includes the aim to promote domestic production of gas and the diversification of sources of gas supply.

Regulations

► REGULATION **(EC) No 1774/2002**

"laying down **health rules concerning animal by-products** not intended for human consumption"

This Regulation lays down animal and public health rules for (a) the collection, transport, storage, handling, processing and use or disposal of animal by-products, to prevent these products from presenting a risk to animal or public health, and (b) the placing on the market and, in certain specific cases, the export and transit of animal by-products and those products derived therefore referred to in Annexes VII and VIII of the Regulation.

This Regulation also includes catering waste if it is destined for use in a biogas plant or for composting. It was amended by several new Commission Regulations including also issues on biogas:

- COMMISSION REGULATION (EC) No 808/2003
- COMMISSION REGULATION (EC) No 668/2004
- COMMISSION REGULATION (EC) No 92/2005
- COMMISSION REGULATION (EC) No 93/2005
- COMMISSION REGULATION (EC) No 416/2005
- COMMISSION REGULATION (EC) No 181/2006
- COMMISSION REGULATION (EC) No 208/2006
- COMMISSION REGULATION (EC) No 2007/2006

► REGULATION **(EC) No 2003/2003**

"relating to **fertilizers**"

This Regulation shall apply to products which are placed on the market as fertilisers designated 'EC fertilizer'. This includes only mineral and synthetic fertilizers and does not cover fertilizers from anaerobic fermentation residues.

COUNCIL REGULATION **(EC) No 1782/2003**

"establishing **common rules for direct support schemes under the common agricultural policy** and establishing certain **support schemes** for farmers and amending Regulations (EEC) No 2019/93, (EC) No 1452/2001, (EC) No 1453/2001, (EC) No 1454/2001, (EC) 1868/94, (EC) No 1251/1999, (EC) No 1254/1999, (EC) No 1673/2000, (EEC) No 2358/71 and (EC) No 2529/2001"

This Regulation establishes:

- common rules on direct payments under income support schemes in the framework of the common agricultural policy which are financed by the 'Guarantee' Section of the European Agricultural Guidance and Guarantee Fund (EAGGF), except those provided for under Regulation (EC) No 1257/1999;
- an income support for farmers (hereinafter referred to as the 'single payment scheme');
- support schemes for farmers producing durum wheat, protein crops, rice, nuts, energy crops, starch potatoes, milk, seeds, arable crops, sheep meat and goat meat, beef and veal and grain legumes.

Annex 2: Bulgarian Legislation

Directive 2004/35/EO of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage;

Directive 85/337/EEC, amended by 97/11/EC on the assessment of the effects of certain public and private projects on the environment, amended and supplemented by Directive 2003/35/EC providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment:

- Environmental Protection Act (State Gazette No 91/25.09.2002);
- Regulation on the terms and conditions for carrying out Environmental Impact Assessment (SG 25/18.03.2003);
- Decree No 87/23.03.1995 on Ratification of the Convention on Environmental Impact Assessment in Transboundary Context.

Directive 2001/42/EC on environmental impact assessment of certain plans and programmes:

- Environmental Protection Act (State Gazette No 91/25.09.2002)
- Regulation on the Conditions, Procedure and Methods for Environmental Assessment of Plans and Programs (SG 57/2004)
- Regulation No 2 on the terms and conditions for carrying out Environmental Assessment on national, regional, and district development plans and programmes, on urban development plans and their amendments (SG 25/18.03.2003) – repealed.

Directive 2003/4/EC on public access to environmental information and repealing Council Directive 90/313/EEC:

- Environmental Protection Act (State Gazette No 91/25.09.2002)
- Law on Access to Public Information (State Gazette No 55/7.07.2000).

Council Directive 91/692/EEC of 23 December 1991 standardizing and rationalizing reports on the implementation of certain Directives relating to the environment:

- Commission Decision of 29 July 1996 concerning the questionnaires provided for in Council Directives 80/779/EEC, 82/884/EEC, 84/360/EEC and 85/203/EEC (96/511/EC)
- Commission Decision of 25 July 1995 amending Decision 92/446/EEC of 27 July 1992 concerning questionnaires relating to directives in the water sector (95/337/EC)
- Commission Decision of 28 July 1993 concerning formats for the presentation of national programmes as foreseen by Article 17 of Council Directive 91/271/EEC (93/481/EEC)
- Commission Decision Of 24 October 1994 Concerning questionnaires for Member States reports on the implementation of certain Directives in the waste sector (94/741/EC)
- Commission Decision Of 17 April 1996 Establishing a format in which information

is to be provided pursuant to Article 8 (3) of Council Directive 91/689/EEC on hazardous waste (96/302/EC)
- Commission Decision of 3 February 1997 establishing the formats relating to the database system pursuant to European Parliament and Council Directive 94/62/EC on packaging and packaging waste (97/138/EC)
- Commission Decision of 27 May 1997 concerning questionnaires for Member States reports on the implementation of certain Directives in the waste sector (97/622/EC)
- Commission Decision of 25 February 1998 concerning a questionnaire for Member States' reports on the implementation of Council Directive 94/67/EC on the incineration of hazardous waste (98/184/EC)
- Commission Decision of 3 June 1999 Concerning a questionnaire for the reporting obligation of Member States pursuant to Article 41(2) of Council (EEC) No 259/93 (1999/412/EC)
- Commission Decision of 17 November 2000 concerning a questionnaire for member States reports on the implementation of Directive 1999/31/EC on the landfill of waste (2000/738/EC)
- Outline Questionnaire On Directive 78/176/EEC (TiO2)
- Commission Decision Of 9 April 1999 Concerning the questionnaire relating to Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances (1999/314/EC).

Regulation EEC/1210/90 on the establishment of the European Environment Agency and the European Environment Information and Observation Network, amended by Regulation EEC/933/1999:

- Agreement between the European Community and the Republic of Bulgaria concerning the participation of the Republic of Bulgaria to the European Environment Agency and the European Information and Observation network
- Regulation (EC)1367/2006 of the European Parliament and of the Council of 6 September 2006 on the application of the provisions of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters to Community institutions and bodies.

Ordinance No 6 on the conditions and requirements for construction and operation of incineration-plants and co-incineration plants (SG 78/07.09.2004);

Ordinance No 7 on the requirements for sites determined for placing of waste treatment facilities (SG 81/17.09.2004);

Ordinance No 8 on the conditions and requirements for construction and operation of landfills and other facilities and installations for waste disposal and recovery (SG 83/24.09.2004);

Ordinance on the order and the way of recovery of sludge from waste water treatment through its use in the agriculture (adopted with CM Decree 339/14.12.2004, SG112/23.12.2004);

Ordinance on Liquid Fuel Quality Requirements and the Terms and Conditions Governing Control and Means Thereof adopted by Council of Ministers' Decree №156 of 2003, (Prom., OG No. 66 of 2003, amend. and suppl., No 69 and 78 of 2005 and No 40 of 2006, amend. and suppl., No 76 of 2007).

- The Ordinance lays down the terms and procedure for quality control on liquid fuels following their production, in the case of imports - after the release from customs control, and during their distribution including at petrol stations and the reservoirs of combustion plants;
- The latest amendments to the abovementioned Ordinance lay down the quality requirements for biodiesel, in compliance with BDS 14214. In connection with the characteristics of the mass produced low-olefin varieties of sunflower, a transitional period was proposed ending on 31.12.2005, that would allow for the transition from an iodine index of 140 g l/100 g to the standard index of – 120 g l/100 g.

Ordinance on the Terms and Procedure for Support to Energy Crop Producers, issued by the Ministry of Agriculture and Forestry (promulgated OG, No 37 of 08.05.2007).

- The Ordinance was drafted pursuant to § 35 of the Farmers Support Act and lays down the terms and procedure for the provision of direct payments per hectare of energy crops;
- The Ordinance transposes the requirements of Council Regulation 1782/2003, establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers, and Commission Regulation 1973/2004, laying down detailed rules for the application of Council Regulation (EC) No 1782/2003 as regards the support schemes provided for in Titles IV and IVa of that Regulation and the use of land set aside for the production of raw materials;
- Under the Ordinance, farmers will receive direct support for energy crops for growing all types of agricultural products intended for the production of energy products and for which the Minister for Agriculture and Forestry has approved representative yields.