

**Important notice: this report has been submitted in the language of the Member State, which is the sole authentic version. Translation into the English language is being provided for information purposes only. The European Commission does not guarantee the accuracy of the data or information provided in the translation, nor does it accept responsibility for any use made thereof.**



REPUBLIC OF BULGARIA  
MINISTRY OF ECONOMY AND ENERGY

REPORT ON THE ACHIEVEMENT OF THE NATIONAL INDICATIVE TARGETS FOR THE USE OF  
BIOFUELS AND OTHER RENEWABLE FUELS IN TRANSPORT IN 2008

APRIL 2009, SOFIA

This report has been drawn up in accordance with Article 23(2) of the Renewable and Alternative Energy Sources and Biofuels Act (ZVAEIB).

The Report on the achievement of the national indicative targets for the use of biofuels and other renewable fuels in transport will be submitted to the European Commission in compliance with Article 4(1) of Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport and in accordance with Article 5(1)(9) of ZVAEIB and Article 6c(1) of the Regulation on the content, structure, requirements and procedure for submission of the information on the energy sector envisaged in Community law to institutions of the European Community (adopted by Decree of the Council of Ministers No 332 of 11 December 2006, promulgated in the State Gazette, issue 106 of 27 December 2006, in force as from the date of entry into force of the Treaty on the Accession of the Republic of Bulgaria to the European Community, 1 January 2007; supplemented, SG, issue 57 of 13 July 2007; amended and supplemented, SG, issue 20 of 26 February 2008).

## UNITS OF MEASUREMENT

ktoe	one thousand tonnes of oil equivalent
t	tonne
kt	one thousand tonnes
ha	hectare
t/ha	tonne per hectare
g I/100g	gram of iodine per 100 grams

## DEFINITIONS

- Utilised agricultural land comprises arable land, land under permanent crops, permanent grassland, family orchards and greenhouses.
- Arable land comprises land under crops in the respective year, temporary grazing land and land laying fallow.
- Land laying fallow comprises arable land or other farmland not utilised for agricultural purposes which has not yielded a crop in the respective year and is classified accordingly for a maximum time period of 3 years.

## TABLE OF CONTENTS

	Page
UNITS OF MEASUREMENT	3
DEFINITIONS	3
I.    POLICY FOR THE PROMOTION OF THE USE OF BIOFUELS	5
I.1 Renewable and Alternative Energy Sources and Biofuels Act ( ZVAEIB)	5
I.2 Excise Duty and Tax Warehouses Act ( ZADS)	6
I.3 Clean Ambient Air Act (ZChAV)	7
I.4 Regulation on the requirements for the quality of liquid fuels and the rules and procedure for monitoring compliance	7
I.5 Regulation on the requirements and procedure for support to energy crop producers	7
II.   NATIONAL TARGETS FOR THE USE OF BIOFUELS	8
III.  PRODUCTION OF BIOFUELS IN BULGARIA IN 2008	8
IV.  POTENTIAL OF BULGARIA TO PRODUCE ENERGY CROPS AND BIOFUELS	10
IV. 1 Cultivation of energy crops	10
IV.2 Production of biomass for energy	11
IV.3 Capacity of biofuel plants	12
V.   CONCLUSION	12

## I. POLICY FOR THE PROMOTION OF THE USE OF BIOFUELS

### I.1 Renewable and Alternative Energy Sources and Biofuels Act (ZVAEIB)

The Renewable and Alternative Energy Sources and Biofuels Act (promulgated SG, issue 49 of 19 June 2007; amended, SG, issue 98 of 14 November 2008, in force as from 14 November 2008) was adopted in June 2007 by the Fortieth National Assembly. The law is in full compliance with Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market and Directive 2003/30/EC on the promotion of the use of biofuels or other renewable fuels in transport.

The law lays down the rules for public relations with respect to the promotion of the production and use of electricity from renewable and alternative energy sources for heating and/or cooling and the production and use of biofuels with an aim to reducing the use of conventional fuels and the volume of released emissions of harmful substances.

The national indicative targets for the promotion of the use of biofuels and other renewable fuels in transport are determined as a minimum share of the final annual consumption of petrol and diesel fuels in transport. The targets are approved by the Council of Ministers on a joint proposal submitted by the Minister of Economy and Energy and the Minister of Transport.

In accordance with the provisions laid down in ZVAEIB from 1 January 2008 the producers and importers of liquid fuels for transport are subject to a requirement for the marketing of petroleum fuels mixed with biofuels, where the blend conforms to the maximum permitted percentage ratio stipulated in the relevant standards (respectively BSS EN 228 for petrol fuels and BSS EN 590 for diesel fuels). The mandatory mixing of biofuels with petroleum fuels is carried out solely in tax warehouses licensed in accordance with the procedure laid down in the Excise Duty and Tax Warehouses Act (ZADS).

In the transport sector biofuels, as a component of petroleum liquid fuels intended for internal combustion engines, may be used either in their pure form or as blends.

The use of biofuels conforms to the technical and quality requirements for biofuels and their blends with petroleum liquid fuels stipulated in the Regulation on the quality of liquid fuels and the requirements and procedure for monitoring compliance.

For the purpose of the promotion of the production of electricity from biomass ZVAEIB lays down a number of incentives, and in particular:

- Priority connection of electricity producers to the transmission and/or distribution grid;
- Mandatory purchase of electricity produced from biomass;
- Preferential purchase prices for generated electricity;
- A time period for connection to the grid that does not exceed the deadline for the commissioning of the power plant notified by the producer.

At the end of 2008, amendments were introduced to ZVAEIB and the term of the contracts concluded with the producers of electricity from biomass was extended from 12 to 15 years.

The preferential purchase prices are determined by the State Energy and Water Regulation Commission (DKEVR) not later than 31 March each year.

The preferential purchase prices for electricity produced from wood waste (forest residue), agricultural waste and energy crops by power plants with an installed capacity of 5 MW were determined by Decision No TS-015 of DKEVR of 31 March 2008. Those prices came into force in 1 April 2008 (see Table 1).

Table 1 Preferential prices for the purchase of electricity produced from biomass

	Preferential price in BGN per MWh
Biomass plants with an installed capacity of up to 5 MW	
Waste wood	215.00
Agricultural waste	162.00
Energy crops	184.00
Indirect use of biomass from vegetable or animal substances	
Power plants of installed capacity of up to 150 kW	197.90
Power plants of installed capacity of 150 kW up to 500 kW	181.60
Power plants of installed capacity of more than 150 kW up to 5 MW	165.30

Source: Decision No TS-015 of DKEVR adopted on 31 March 2008 in force as from 1 April 2008 and Decision No TS-03 of DKEVR adopted on 16 March 2009 in force as from 1 April 2009. The preferential purchase prices set out above do not include VAT.

The preferential prices for individual groups of power plants that differ in terms of their capacity to produce electricity by indirect use of biomass from vegetable and animal substances were approved by Decision No TS-03 of DKEVR of 16 March 2006.

## 1.2 Excise Duty and Tax Warehouses Act ( ZADS)

The Excise Duty and Tax Warehouses Act (promulgated SG, issue 91 of 15 November 2005 in force as from 1 January 2006; subsequently amended, SG, issue 6 of 23 January 2009 in force as from 24 February 2009) governs the excise duty imposed on goods and the control over the production, use, storage, movement of goods subject to the levying of excise duty and the securities required for those goods.

The Act stipulates a motor fuel excise duty rate for biodiesel and bioethanol of 0 BGN per 1000 litres. By the last amendment of ZADS a reduced excise duty rate for blends of biofuels and liquid fuels was adopted, which will come into force after the date of adoption of a positive decision by the European Commission.

In 2008, the Ministry of Finance drafted and submitted to the European Commission a notification of state aids in the sector of biofuels and blends of biofuels and liquid fuels. The European Commission is expected to adopt a decision on the application of the reduced tax rate.

### I.3 Clean Ambient Air Act (ZChAV)

The Clean Ambient Air Act (promulgated SG, issue 45 of 28 May 1996, in force as from 29 June 1996; most recently amended and supplemented version promulgated in SG, issue 52 of 6 June 2008; SG, issue 6 of 23 January 2009, in force as from 24 February 2009) stipulates the requirements for the quality of liquid fuels, including the monitoring of compliance with those requirements with respect to the marketing, distribution, transport and use of liquid fuels.

In accordance with ZChAV the Council of Ministers, acting on a joint proposal of the Minister of Economy and Energy, the Minister of Environment and Water and the Chairperson of the State Agency for Metrological and Technical Supervision, adopts a regulation laying down the technical and quality requirements for liquid fuels, the limit values for the permitted content of lead, sulphur and other harmful substances in liquid fuels and the requirements and procedure for monitoring compliance.

The Act prohibits the marketing, distribution and use of liquid fuels under names other than those stipulated in the supplementary provisions to ZChAV where biofuels are also enlisted.

### I.4 Regulation on the requirements for the quality of liquid fuels and the rules and procedure for monitoring compliance

The Regulation on the requirements for the quality of liquid fuels and the requirements and procedure for monitoring compliance, adopted by Decree No 156 of 2003 of the Council of Ministers (promulgated SG, issue 66 of 2003; amended and supplemented, SG issue 76 of 2007) lays down the requirements, rules and procedure for quality control of liquid fuels at the post-production stage and, in the case of importation, at the stage following their release from customs and distribution, including to gas stations and fuel storage tanks of combustion plants.

The latest amendment of the Regulation lays down requirements for biodiesel that comply with BSS 14 214. In connection to the properties of the most widespread low-oleic sunflower varieties a transition period until 31 December 2010 was proposed, which will allow the reference value for iodine number of 140 g I/100 g to be replaced by the reference value of 120 g I/100 g.

### I.5 Regulation on the requirements and procedure for support to energy crop producers

The regulation on the requirements and procedure for support to energy crop producers has been drawn up by the Ministry of Agriculture and Food (issued by the Minister of Agriculture and Food, promulgated SG, issue 37 of 8 May 2007; amended and supplemented SG, issue 4 of 15 January 2008). The Regulation has been drafted in accordance with §35 of the Support Granted to Agricultural Producers Act (ZPZP) and lays down the requirements and procedure for direct payments per hectare for land under energy crops.

The Regulation transposes Council Regulation No 1782/2003 establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers and Commission Regulation No 1973/2004 laying down detailed rules for the application of Council Regulation 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.

In accordance with the Regulation mentioned above agricultural producers receive direct payments for energy crops and the production of all types of agricultural products intended for the production of energy products in respect of which representative yield rates have been determined by the Minister of Agriculture and Food. The amount of the subsidy is 45 EUR per hectare.

## II. National targets for the use of biofuels

In accordance with ZVAEIB, by Decision under point 2 of Protocol No 43 approved at a meeting of the Council of Ministers of 15 November 2007, a National Long-Term Programme for the Promotion of the Use of Biofuels in Transport in the time period 2008 -2020 was adopted. The Programme sets out the national indicative targets for the promotion of the use of biofuels in Bulgaria in the time period 2008-2020.

The national indicative targets for the use of biofuels were determined on the basis of an analysis which reflects the actual potential for the cultivation of energy crops in Bulgaria. That analysis takes into account the information about existing plants and notified future plants expected to be commissioned before the end of 2010. In determining the national indicative targets, the current condition and future development of the use of petrol and diesel fuels in the transport sector in the country has also been taken into consideration.

The following national indicative targets for the use of biofuels in transport have been set:

In 2008 – 2.00%  
 In 2009 – 3.50%  
 In 2010 – 5.75%  
 In 2015 – 8.00%  
 In 2020 – 10.0%

## III. Production of biofuels in Bulgaria in 2008

For the Republic of Bulgaria, 2008 was the first year in which an indicative target for the use of biofuels in transport had been set. At the beginning of 2008, the requirement for the producers and importers of liquid fuels to blend mineral fuels with biofuels, when those fuels are used for transport, also came into force.

The use of biofuels in the country is still negligible. Table 2 sets out the data of the National Statistical Institute on the quantities of biodiesel, petrol and diesel fuels used in the transport sector in 2006 and 2007 respectively.

Table 2 Use of biodiesel, petrol and diesel fuels in motor vehicle transport in 2006 and 2007<sup>1</sup>

Type of fuels used in transport	Unit of measurement	2006	2007
Biodiesel	t	9 431	4 036
Biodiesel	ktoe	5	2
Petrol and diesel fuels	ktoe	2 049	1 977

<sup>1</sup> Source – Energy Balance 2007, National Statistical Institute

Share of biodiesel in the use of petrol and diesel fuels in transport	%	0.2%	0.1%
---	---	------	------

On the basis of preliminary information from the Ministry of Economy and Energy, in 2008 a total of 1 939 tonnes of biodiesel were produced, out of which 1 898 tonnes were used within Bulgaria and 138 tonnes were exported. The final data on the use of biofuels, petrol and diesel fuels in Bulgaria will be disclosed in the 2008 Energy Balance to be drafted by the National Statistical Institute at the end of 2009.

The above data indicates that the use of biofuels has been decreasing despite the legal requirement for the mixing of liquid fuels with biofuels, when those fuels are used for transport, which came into effect on 1 January 2008. As a result, it is expected that the indicative target for 2008 of a 2% share of biofuels in petrol and diesel fuels will not be achieved.

Some of the main reasons indicated by the business community for the failure to achieve the national indicative target of 2% in 2008, which constitutes a violation of the provisions laid down in ZVAEIB, include, inter alia:

- Ø Failure to achieve the indicators for blends of biofuel with petrol fuels set out in Standard EN 228;
- Ø Failure to implement in practice a tax benefit for the marketing of biofuels in pure form or as blends of biofuels with liquid petroleum fuels;
- Ø Failure to establish at least three accredited laboratories for the testing of pure biodiesel, respectively one for the purpose of verifying the compliance of biodiesel with the requirements for quality, a second one for control purposes and a third one for the testing of reference samples;
- Ø The necessary technological time for implementation of the investment programmes of producers and importers of liquid fuels relating to the technical adjustment of distribution systems (bringing those systems in line with the requirements stipulated in ZVAEIB for the process of mixing biofuels with liquid petroleum fuels);
- Ø A problem related to the quality control of marketed pure biofuels and blends of biofuels with liquid petroleum fuels.

In order to overcome some of the indicated problems the following actions were taken:

- Ø Funds were provided from the state budget for the purchase of the necessary equipment for the testing of pure biofuels by the State Agency for Metrological and Technical Supervision (DAMTN);
- Ø A procedure for the amendment of ZVAEIB was launched with a view to ensuring greater precision of the rules laid down by law for quality control of biofuels and their blends with conventional fuels used in transport and achievement of the stipulated indicative targets;
- Ø The Ministry of Finance drafted and submitted to the European Commission a notification of state aids in the sector of biofuels and their blends with liquid fuels;
- Ø Taking into account the low penetration of biofuels among consumers and in order to overcome the initial scepticism that followed their introduction, in 2008 the Ministry of Economy and Energy organised a number of media events, interviews for different media, presentations in the course of workshops, round tables and meetings with representatives of the business

community, potential investors and other stakeholders with an aim to clarify Community and national policy in this area. At the beginning of 2009, a project was launched for the development and dissemination of a media product promoting the use of biofuels in transport by consumers. The project was completed in March after an information dissemination campaign which took place in 19 large towns situated across Bulgaria in the course of which more than 1 million brochures were disseminated to the general public.

#### IV. Potential of Bulgaria to produce energy crops and biofuels

##### IV.1 Cultivation of energy crops

Bulgaria enjoys favourable climate conditions for the production of oleic and grain crops. According to conducted studies there are sufficient agricultural areas within Bulgaria where the necessary energy crops for the production of biofuels may be cultivated without the food industry being adversely affected.

Table 3 sets out a forecast for the production of biofuels and the agricultural areas necessary for the cultivation of energy crops.

Table 3 Forecast for the production of biofuels and the agricultural areas necessary for the cultivation of energy crops<sup>2</sup>

Biofuels	2008		2009		2010		2015		2020	
	kt	Area in ha	kt	Area in ha	kt	Area in ha	kt	Area in ha	kt	Area in ha
Bioethanol	9.7	8 767	16.0	14 497	24.5	22 664	33.4	30 924	37.0	34 238
Biodiesel	34.2	58 524	63.3	108 290	108.7	185 925	185.2	316 862	277.5	474 763
Total	43.9	67 297	79.3	122 787	133.2	208 589	218.6	347 786	314.5	509 001

In order to achieve the national indicative target for 2008, the production of biofuels must reach 43.9 kt and a total of 67 297 ha of agricultural land will be necessary for the cultivation of the respective energy crops. The agricultural land necessary in order to achieve the indicative target of 5.75% in 2010 is a total of 208 589 ha or the equivalent of 6.8% of land under crops in Bulgaria (3 057 740 ha) in 2007<sup>3</sup>.

Bulgaria enjoys excellent natural conditions for developing agriculture and forestry. The favourable climate for producing different crops and the availability of farmland and a farming tradition make for a well developed arable and stock farming industry.

The utilised agricultural area in 2008 was 5.1 million ha or 46.0% of the country's territory. Land under crops in 2008 was approximately 3.06 million ha or 60.0% of total utilised agricultural land in the country. In 2008, 229 471 ha or 7.5% of arable land lay fallow, which represents a decrease by 21% as compared to 2007.

<sup>2</sup> Source: National long-term programme for promotion of the use of biofuels in transport 2007-2013, Ministry of the Economy and Energy and Ministry of Transport.

<sup>3</sup> Source: Bulgarian Agricultural and Economic Situation Monitoring Survey (BAESMS) 2007 – final results on employment and the use of land in Bulgaria in 2007, Directorate Agricultural Statistics, Ministry of Agriculture and Food.

Information about the total yield of the main agricultural crops in 2008<sup>4</sup>, a part of which was used as raw material for the production of biofuels in the country, is set out below:

- Wheat is the biggest agricultural product in terms of volume, with 4 632 kt produced from 1 114 427 ha of cultivated area, corresponding to an average yield of 4.17 t/ha.
- Maize is the second most important agricultural product after wheat. The yield of maize is 1 368 kt from 329 345 ha of cultivated areas, which corresponds to an average yield of 4.15 t/ha.
- The yield of sunflower is 1 301 kt from 723 962 ha. The total volume of oleic sunflower is 1 285 kt and the average yield 1.81 t/ha.
- The yield of rape in the country is 231 kt from 94 308 ha of land. The average yield is 2.46 t/ha.

#### IV.2 Production of biomass for energy

In the time period 1997-2007 the production of biomass in the country has increased almost three fold and in 2007 stood at 743<sup>5</sup> ktoe. The types of biomass used for energy (excluding biofuels) are wood fuels and industrial wood waste. Wood fuels almost entirely comprise fire wood used for heating (more than 99% of the total quantity of wood fuels). In recent years the use of recovered products from the cellulose and paper, wood processing and food industries has marked an increase. In 2007, the total volume of these products was 68 ktoe.

The relative share of biomass and industrial waste in the final consumption of energy in the country in 2007 is set out in Figure 1.

Figure 1

[Percentages from top to bottom and left to right<sup>6</sup>]

6.5%  
15.1%  
78.4%

[Text below Figure 1 from left to right]

Industry  
Households  
Other

Figure 1 Structure of the final energy consumption of biomass and industrial waste

<sup>4</sup> Source: Agricultural Crop Yields Survey 2008, Directorate Agricultural Statistics, Ministry of Agriculture and Food.

<sup>5</sup> Source: Energy Balance 2007. National Statistical Institute.

### IV.3 Industrial installations for the production of biofuels

Industrial installations that allow the production of approximately 100 000 t of biofuels annually have already been launched into operation in Bulgaria. The following new industrial installations have been notified:

- In 2008 – an installation with a capacity for the production of 594 kt of biodiesel and 55 kt of bioethanol;
- In 2010 – an installation with a capacity for the production of 415 kt of biodiesel and 95 kt of bioethanol;
- In 2020 – an installation with a capacity for the production of 448 kt of biodiesel and 107 kt of bioethanol.

These capacities would exceed the quantities of biofuels necessary for the achievement of the national indicative targets of Bulgaria several times over.

### V. Conclusion

The production of biofuels is based on local raw materials which could contribute to improving the security of supplies. For Bulgaria, biofuels represent an alternative to petrol and diesel fuels which allows the dependency on the import of fuels to be reduced and contribute to the security of energy supplies.

The replacement of petroleum fuels by biofuels is one of the possibilities for utilisation of the renewable and alternative energy potential of the country, with particular regard to biomass. It will also result in a more rational use of arable land and utilisation of land currently not used for cultivation within the country. At the same time, the whole process of cultivation of energy crops to the distribution and use of biofuels will contribute to creating more jobs for the population, especially in underdeveloped regions within the country.