



REPUBLIC OF BULGARIA
MINISTRY OF ECONOMY, ENERGY AND TOURISM

**REPORT ON THE ACHIEVEMENT OF THE NATIONAL
INDICATIVE TARGETS FOR THE USE OF BIOFUELS AND
OTHER RENEWABLE FUELS IN THE TRANSPORT SECTOR IN
2010**

May 2011, Sofia

This report has been drawn up in accordance with the requirements of § 5(2)(1) of the Transitional and Closing Provisions of the Renewable Energy Act (promulgated: SG No 35 of 3 May 2011).

In pursuance of the provisions of 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 and other renewable fuels for transport, Article 26 of Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and Article 6c(1) of the Regulation on the contents, structure, conditions and procedure for the submission of information to the Community institutions provided for in Community rules relating to the energy sector (adopted by Decree No 332 of the Council of Ministers of 11 December 2006; promulgated: SG No 106 of 27 December 2006; in force on the date of entry into force of the Treaty concerning the accession of the Republic of Bulgaria to the European Union: 1 January 2007; amended: No 57 of 13 July 2007; amended: No 20 of 26 February 2008), the report on the achievement of the national indicative targets for the use of biofuels and other renewable fuels in the transport sector adopted by the Council of Ministers will be submitted to the European Commission.

UNITS OF MEASUREMENT

ktoe	thousand tonnes of oil equivalent
t	tonne
kt	thousand tonnes
h•	hectare
daa	decare
kg/daa	kilograms per decare
t/ha	tonnes per hectare
g I/100 g	grams of iodine per 100 grams

DEFINITIONS

- **Agricultural area in use** includes: the arable land, permanent crops, grassland and permanent pasture, family gardens and land under greenhouses.
- **Arable land** refers to the areas included in a crop rotation system, temporary meadows under grasses and forage legumes and fallow land.
- **Fallow land** means arable land which is set aside in the year of observation. Whether worked or not, the areas remain in this category for not more than two years.

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I. Policy on 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, in force in the year under review, is the main national instrument laying down the general principles of the policy on the promotion of the production and use of biofuels in Bulgaria.

This instrument, transposing 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 for transport, was developed and adopted in 2007 by the 40th National Assembly.

It was the first instrument to lay down rules governing the public relationships pertaining to the promotion of the generation and consumption of electricity, heat and/or energy for cooling purposes from renewable and alternative energy sources, as well as the production and use of biofuels, which should lead to reductions in the use of conventional fuels and in emissions of pollutants.

The compulsory blending of biofuels with mineral oil derivatives is the measure taken by the Bulgarian government to ensure the achievement of the national target for the share of renewable energy in transport. Blending may take place only in tax warehouses authorised in accordance with the Excise Duties and Tax Warehouses Act (ZADS).

Biofuels may be used in the transport sector in pure form or as a blending component in mineral oil derivatives for the operation of internal combustion engines.

Biofuels must comply with the technical and quality requirements for biofuels and their blends with mineral oil derivatives laid down in the Regulation on the quality requirements for liquid fuels, the conditions, procedure and method of their control and in the relevant standards (for petrol: BDS EN 228, and for diesel fuels: BDS EN 590).

In accordance with the Renewable and Alternative Energy Sources and Biofuels Act adopted in 2007, producers and importers of liquid fuels for the transport sector are under the obligation, in force on 1 January 2008, to place on the market biofuel blends of 5 %, as laid down in the regulation referred to in Article 8(1) of the Clean Ambient Air Act.

In 2009, it was found that the statutory requirements relating to the compulsory blending of

biofuels with mineral oil derivatives were not implemented in practice for a number of reasons.

It was therefore necessary to take measures. In December 2009, the National Assembly adopted the Act amending the Renewable and Alternative Energy Sources and Biofuels Act, implementing the following changes:

- Ø Requirements have been laid down for the phased compulsory blending of petrol and diesel fuels with biofuels;

In accordance with the new amendments to the Act, persons placing on the market petroleum-derived liquid fuels for transport purposes are under the obligation, in the event of release for consumption, to offer fuels for diesel engines blended with biofuels in the following percentage terms:

- from 1 March 2010 – with a biodiesel content of at least 2 % by volume;
- from 1 September 2010 – with a biodiesel content of at least 3 % by volume;
- from 1 March 2011 – fuels for diesel engines with a biodiesel content of at least 4 % by volume and fuels for petrol engines with a bioethanol content of at least 2 % by volume;
- the biodiesel and bioethanol content in fuels for diesel and petrol engines must not exceed 5 % by volume.

- Ø The control authority has been clearly identified – the President of the State Agency for Metrology and Technical Surveillance (DAMTN) or duly authorised officials;
- Ø Coercive administrative measures have been introduced, while the amounts of the penalties have been increased;
- Ø Equivalence of the terms used in the relevant legislation such as the Renewable and Alternative Energy Sources and Biofuels Act, the Clean Ambient Air Act and the Excise Duties and Tax Warehouses Act has been ensured in order to achieve greater clarity and ensure consistency in the identification of the obligated persons.

1.2. Electricity production from biomass

In order to promote electricity production from biomass, the Renewable and Alternative Energy Sources and Biofuels Act provides for the following incentives:

- Ø priority connection of electricity producers to the transmission and/or distribution network;
- Ø mandatory off-take of the electricity produced from biomass;

- Ø preferential purchase prices for electricity;
- Ø time limit for connection not exceeding the time period stated by the producer for putting the energy facilities into operation.

As at 2010, the period of validity of contracts with producers of electricity from biomass is 15 years.

The preferential prices are set by the State Energy and Water Regulatory Commission (SEWRC) by 31 March each year.

In 2010, preferential purchase prices for electricity produced through the indirect use of biomass from vegetal or animal substances, indirect use of energy from municipal waste and domestic waste water as well as through the direct use of biomass from forest clearing, pruning and trimming of trees were set.

The preferential prices for electricity produced from biomass are shown in Table 1.

Table 1: Preferential prices for electricity produced from biomass in 2010¹

Technology	Preferential price, BGN/MWh
Biomass boilers and stoves with an installed capacity of up to 5 MW:	
waste wood	217.19
residues from agriculture	168.74
energy crops	188.69
Indirect use of biomass from vegetable or animal substances:	
plants with an installed capacity of up to 150 kW	199.05
plants with an installed capacity of more than 150 kW up to 500 kW	183.56
plants with an installed capacity of more than 500 kW up to 5 MW	168.08
Indirect use of energy from municipal waste:	

¹ Source: SEWRC Decision No TS-018 of 31 March 2010.

plants with an installed capacity of up to 150 kW	272.29
plants with an installed capacity of more than 150 kW up to 500 kW	261.84
plants with an installed capacity of more than 500 kW up to 5 MW	251.39
Indirect use of energy from domestic waste water:	
plants with an installed capacity of up to 150 kW	150.69
plants with an installed capacity of more than 150 kW up to 500 kW	136.44
plants with an installed capacity of more than 500 kW up to 5 MW	119.34
Power plants of over 5 MW capacity	
direct use of biomass from forest clearing, tree pruning, etc. ²	222.49

In 2010, two small power plants for combined heat and power generation from biogas produced from sewage sludge were put into operation, with a total installed electrical capacity of 3.5 MW.

1.3. Excise Duties and Tax Warehouses Act (ZADS)

The Excise Duties and Tax Warehouses Act (promulgated: SG No 91 of 15 November 2005, in force from 1 January 2006; last amended: No 19 of 8 March 2011, in force from 8 March 2011) lays down the legal provisions concerning the levying of excise duties and the control over the manufacture, use, storage, movement and holding of the goods subject to excise duty.

The Act introduced a reduced rate of excise duty for biofuel blends, which entered into force on 24 November 2009, following notification to the European Commission.

This notification was necessary in view of the fact that the reduced rates constitute State aid and as such, pursuant to Article 88(3) of the Treaty establishing the European Community, should be applied only after a favourable decision is taken by the European Commission on their compatibility with the common market.

The reduced rate of excise duty, which was approved by the European Commission, is applicable to biofuel blends of 4 to 5 % inclusive. The reduced rates are valid for 2 years from the date of approval of the scheme notified.

² Source: SEWRC Decision No TS-38 of 27 September 2010.

I.4. Clean Ambient Air Act (ZCHAV)

The Clean Ambient Air Act (promulgated: SG No 45 of 28 May 1996, in force on 29 June 1996; last amended: SG No 93 of 24 November 2009) lays down requirements for the quality of liquid fuels and the supervision of compliance with the quality requirements for liquid fuels when they are placed on the market, distributed, transported and used.

Under the Clean Ambient Air Act, the Council of Ministers, acting on a proposal from the Minister of Economy, Energy and Tourism, the Minister of the Environment and Waters and the President of the State Agency for Metrology and Technical Surveillance, is required to adopt an regulation laying down the technical and quality requirements for liquid fuels, the specifications for the lead content, the sulphur content and the content of other harmful substances in them, as well as the conditions, procedure and method of control of liquid fuels.

I.5. Regulation on the quality requirements for liquid fuels, the conditions, procedure and method of their control

The Regulation on the quality requirements for liquid fuels, the conditions, procedure and method of their control, adopted by Decree No 156 of the Council of Ministers of 2003 (promulgated: SG No 66 of 2003; last amended: SG No 93 of 24 November 2009) lays down the conditions, procedure and method of quality control of liquid fuels after their production, on importation – after customs clearance, upon their distribution, including at filling stations and in tanks of combustion plants.

The Regulation lays down the quality requirements for biodiesel, taking into consideration the BDS 14 214 standard. In view of the characteristics of the widely used low-oleic varieties of sunflower in Bulgaria, it sets a transitional period until 31 December 2010 in order to facilitate the transition from the iodine value of 140 g I/100 g to the standard value - 120 g I/100 g.

II. National targets for the use of biofuels

In accordance with the provisions of the Renewable and Alternative Energy Sources and Biofuels Act, by resolution under item 2 of Minutes No 43 of the meeting of the Council of Ministers held on 15 November 2007, a national long-term programme for the promotion of the use of biofuels in the transport sector for 2008-2020 was adopted. The programme sets national indicative targets for the promotion of the use of biofuels in the country for the period 2008-2020.

The following national indicative targets for the use of biofuels in the transport sector have

been set: 2008 – 2 %, 2009 – 3.50 %; 2010 – 5.75 %; 2015 – 8.00 % and 2020 – 10.00 %.

By amendments to the Renewable and Alternative Energy Sources and Biofuels Act adopted in 2009, lower compulsory requirements for the biofuel content in conventional fuels were introduced in order to ensure realistic conditions for the business to acquire the technical capacity for blending and comply with the quality requirements for blended fuels.

Directive 2009/28/EC on the promotion of the use of energy from renewable sources sets a national target for Bulgaria of 16 % for the share of energy from renewable sources in the gross final consumption of energy by 2020, including the binding target of 10 % for the share of energy from renewable sources in the final consumption of energy in the transport sector by 2020.

At the time of adoption of this report, the Renewable Energy Act (promulgated: SG No 35 of 3 May 2011) was also adopted, transposing the provisions of Directive 2009/28/EC.

The forthcoming legislative action on the implementing regulations of the draft Act and the National Renewable Energy Action Plan up to 2020 will ensure the gradual achievement of the Community targets for 2020, in the context of the specific national conditions.

III. Production and use of biofuels in Bulgaria in 2010

The data provided by the National Statistical Institute concerning the use of biodiesel, petrol and diesel fuels in the transport sector in 2006, 2007, 2008 and 2009 are given in Table 2.

Table 2: Consumption of biodiesel, petrol and diesel fuels - 2006, 2007, 2008 and 2009³

Types of transport fuels	Unit of measurement	2006	2007	2008	2009
Biodiesel	t	9 431	4 036	4 260	6 566
Biodiesel	ktoe	5	2	4	5.6
Petrol and diesel fuels	ktoe	2 049	1 977	2 118	2 049
Share of biodiesel in the consumption of petrol and diesel fuels in the transport	%	0.2 %	0.1 %	0.18 %	0.27 %

³ Source: Energy Balance Sheets for 2009, National Statistical Institute.

sector					
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The consumption of biodiesel has increased in 2009, compared to that in 2008, but it is as yet insufficient to achieve the national indicative target.

According to preliminary figures of the Ministry of Economy, Energy and Tourism, only biodiesel in pure form and as a blending component in petroleum-derived fuels for diesel engines was marketed in 2010. The quantity of biodiesel consumed in 2010 was 38 911.13 t. Of these, 8 551.40 t were sold as pure biodiesel, including 4 410.12 t from imports. As a blending component in petroleum-derived diesel fuels, 30 359.73 t were sold, including 730.43 t from imports.

The quantities of biodiesel produced in 2010 were 18 913 t, of which 17 855 t were used for domestic consumption and the remaining quantities exported.

The final figures for the production and consumption of biofuels, petrol and diesel fuels in Bulgaria will be released in the Energy Balance Sheets for 2010 by the National Statistical Institute at the end of 2011.

The information available to the Ministry of Economy, Energy and Tourism is based on the data submitted by producers and distributors of biofuels in accordance with Regulation No 16-28 of 22 January 2008 on the contents, conditions, procedure and manner of providing information on the quantities of energy from renewable and alternative energy sources produced, purchased and sold and the quantities of biofuels produced, purchased and sold.

The following conclusions may be drawn from the preliminary figures for 2010 set out above:

- Ø the production of biodiesel has slightly increased in 2010, compared to that in 2009;
- Ø the consumption of biofuels in the transport sector is still unsatisfactory, despite the statutory requirement in force from 1 January 2008 for the blending of liquid fuels with biofuels for transport purposes;
- Ø as a result, the target of 5.75 % for the share of biofuels in the consumption of petrol and diesel fuels, set for 2010, will most likely not be achieved.

In order to reverse this negative trend, the following measures were taken:

- Ø amendments were made to the Renewable and Alternative Energy Sources and Biofuels Act

at the end of 2009 and the Act amending the Renewable and Alternative Energy Sources and Biofuels Act was adopted by the National Assembly on 11 December 2009;

- Ø testing equipment for pure biofuels was provided to the State Agency for Metrology and Technical Surveillance, financed by the national budget;
- Ø the State Agency for Metrology and Technical Surveillance took the necessary measures in accordance with its powers as a control authority. As a result of the inspections carried out in 2010 of the sites distributing liquid fuels on the territory of the country and the non-conformities found with the quality requirements for liquid fuels as regards their biofuel content, the non-conforming fuels were withdrawn from circulation and mandatory prescriptions for their withdrawal from the market were issued;
- Ø a reduced rate of excise duty for biofuel blends of 4 to 5 % inclusive entered into force on 24 November 2009.

IV. Bulgaria's potential for production of energy crops and biofuels

IV.1. Growing energy crops

The prevailing weather conditions in Bulgaria are favourable for growing oilseeds and cereals. Studies show that Bulgaria has enough areas to ensure adequate supply of raw materials for the production of biofuels without adversely affecting the food industry.

Table 3 contains a forecast of the production of biofuels and the areas required to grow energy crops⁴.

Table 3: Forecast of the production of biofuels and the areas required to grow energy crops

Biofuels	2008		2009		2010		2015		2020	
	kt	areas, ha	kt	areas, ha	kt	areas, ha	kt	areas, ha	kt	areas, ha
Bioethanol	9.7	8 767	16.0	14 497	24.5	22 664	33.4	30 924	37.0	34 238

⁴ Source: National Long-Term Programme for the Promotion of the Use of Biofuels in the Transport Sector for 2008-2020, Ministry of Economy and Energy and Ministry of Transport.

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 2009, the consumption of biofuels must reach 79.3 kt, while the areas required for their production amount to 122 787 ha. The areas required to achieve the national indicative target of 5.75 % for the share of biofuels in 2010 amount to 208 589 ha, which constitutes 6.7 % of the arable land (3 122 516 ha) in 2009⁵.

Bulgaria has excellent natural conditions for the development of the agricultural and forestry sector. The favourable conditions for the production of various crops, the availability of agricultural land and the existence of long established traditions contribute to the well-developed plant and livestock production.

In 2010, the agricultural area in use was 5 051 866 ha or 45.5 % of the territory of the country. During that year, the agricultural area in use increased by 0.4 %, as compared to 2009. In 2010, the arable land area was 3 162 526 ha or 62.6 % of the agricultural area in use of the country and 28.5 % of the total area of the country. In that year, it increased by 1.3 %, as compared to 2009⁶.

The total areas sown under the basic agricultural crops in 2010, part of which are used as a raw material for the production of biofuels in the country, were as follows⁷:

- Ø wheat – the areas down to wheat were 11 248 530 daa in 2010, harvested areas were 11 248 134 daa, with an average yield of 360.3 kg/daa, and output in 2010 - 3 994 956 t;
- Ø barley – the areas under barley were 2 534 471 daa in 2010, harvested areas were 2 453 285 daa, with an average yield of 339.7 kg/daa, and output in 2010 - 833 272 t;
- Ø maize – the areas under maize were 3 359 948 daa in 2010, harvested areas were 3 275 249 daa, with an average yield of 624.1 kg/daa, and output in 2010 - 2 044 092 t;
- Ø sunflower – the areas sown with sunflower in 2010 were 7 267 226 daa, harvested areas

⁵ Source: Survey on the Agricultural and Economic Situation in Bulgaria (BANSIK) 2009 – Final Figures on Employment and the Use of the Territory of Bulgaria in 2009, Agricultural Statistics Department, Ministry of Agriculture and Food.

⁶ Source: BANSIK 2010 – Final Figures on Employment and the Use of the Territory of Bulgaria in 2010, Agricultural Statistics Department, Ministry of Agriculture and Food.

⁷ Source: 2010 Bulletin, Ministry of Agriculture and Food, Agricultural Statistics Department, Yields of Agricultural Crops – the 2010 Harvest Survey.

were 7 149 586 daa, with an average yield of 210.7 kg/daa, and output in 2010 - 1 388 482 t;

Ø rape – the areas under rape in 2010 were 2 146 927 daa, harvested areas were 2 119 540 daa, with an average yield of 257.1 kg/daa, and output in 2010 - 544 841 t.

Table 4: Areas occupied by the main agricultural crops in 2010 and 2009

Crops	2010		2009	
	Area (ha)	% of arable land	Area (ha)	% of arable land
<i>Wheat</i>	1 095 703	34.60 %	1 254 151	40.20 %
<i>Barley</i>	250 640	7.90 %	264 689	8.50 %
<i>Maize</i>	360 046	11.40 %	303 881	9.70 %
<i>Sunflower</i>	734 314	23.20 %	687 209	22.00 %

Source: BANSIK 2010 - Final Figures on Employment and the Use of the Territory of Bulgaria in 2010, Agricultural Statistics Department, Ministry of Agriculture and Food

According to the Ministry of Agriculture and Food, the areas under rape in the Republic of Bulgaria increase every year, as follows: 2007 - 547 068 daa, 2008 - 943 085 daa, 2009 – 1 122 375 daa and 2010 - 2 146 927 daa.

IV.2. Production of biomass for energy uses

In 2009, the gross domestic consumption of biomass amounted to 761 ktoe, while the types of biomass used for energy purposes (excluding biofuels) were, for the most part, fuel wood, as well as wood, vegetable and other solid waste. Of the 754 ktoe available for final consumption, the household sector has the largest share - 653 ktoe, which accounts for 87 % of the quantity of biomass available for final consumption in the country.

In 2009, biomass accounted for 8.9 % of the final energy consumption in the country.

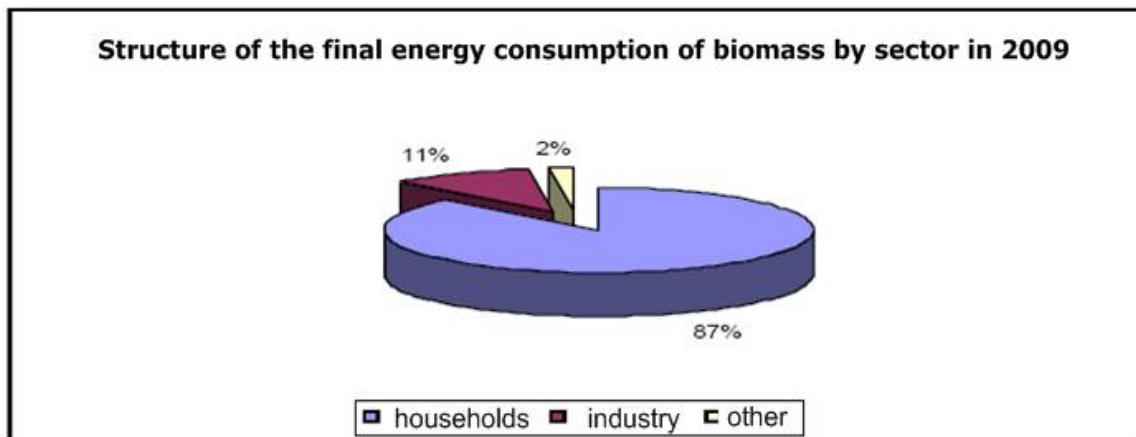


Figure 1: Final consumption of biomass by sector in 2009

IV.3. Production capacities for biofuels

The capacities built in the country for production of biodiesel are intended for producing 250 000 tonnes per year, and of bioethanol - 60 000 tonnes per year⁸.

V. Conclusion

As a result of the measures taken to promote the use of biofuels in the transport sector, according to the preliminary information provided by control authorities and fuel distributors, the statutory requirements relating to the blending of petroleum-derived diesel fuels with biofuels have already been implemented in practice in 2010.

For this reason, official statistics are expected to register a significant increase in the consumption of biodiesel in 2010, which will have a positive impact on the achievement of the national indicative target.

The production of biofuels relies on local raw materials, which would help to improve security of supply. For Bulgaria, biofuels provide an alternative to petrol and diesel fuels, which would allow it to reduce its dependence on fuel imports and contribute to the security of its energy supply.

The wider use of biofuels in various sectors such as urban transport, internal transport in production plants and ports would lead to a reduction in the overall greenhouse gas emissions and improve the environmental conditions and quality of life in regions with higher concentrations of emissions in the ambient air.

⁸ Source: National Association of Biofuel Producers in Bulgaria.