REPUBLIC OF BULGARIA

Ministry of Economy, Energy and Tourism

NATIONAL RENEWABLE ENERGY ACTION PLAN

drawn up in accordance with the template for national renewable energy action plans as set out in Directive 2009/28/EC of the European Parliament and of the Council

Prepared by the Ministry of Economy, Energy and Tourism with the assistance of the consortium formed by Ecosphere (Portugal), IT Power (UK) and the Black Sea Regional Energy Centre (Bulgaria)

Contract No C20006/PORT-2010-01-01 with the European Bank for Reconstruction and Development

20 April 2011

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LIST OF ABBREVIATIONS

Abbreviation	Description
EEA	Energy Efficiency Agency
AEMDR	Agency for the Exploration and Maintenance of the Danube River
ASED	Agency for Sustainable Energy Development
GDP	Gross domestic product
DHW	Domestic hot water supply
GVA	Gross value added
BEEF	Bulgarian Energy Efficiency Fund
RS	Renewable sources
RS-E	Renewable sources in electricity
RS-H&C	Renewable sources in heating and cooling
RS-T	Renewable sources in transport
HPP	Hydropower plant
WPP	Wind power plant
GIS	Geographical Information System
SAMTS	State Agency for Metrology and Technical Surveillance
SG	State Gazette
SEWRC	State Energy and Water Regulatory Commission
DEP	Decentralised energy production
EBRD	European Bank for Reconstruction and Development
EE	Energy efficiency
EES	Electrical energy system
EAFRD	European Agricultural Fund for Rural Development
EI	Energy intensity
EEC	European Economic Community
EC	European Community
EP	European Parliament
EDC	Electricity distribution company

Abbreviation	Description
EU	European Union
ERDF	European Regional Development Fund
PP	Power plant
ZADS	Excise Duties and Tax Warehouses Act
ZBR	Biological Diversity Act
ZV	Water Act
ZVAEIB	Renewable and Alternative Energy Sources and Biofuels Act
ZDS	State Property Act
ZE	Energy Act
ZEVI	Energy from Renewable Sources Act
ZEE	Energy Efficiency Act
ZZT	Protected Areas Act
ZID	Amending Act
ZNI	Investment Promotion Act
ZOZZ	Agricultural Land Protection Act
ZOOS	Environmental Protection Act
ZPZP	Support for Farmers Act
ZUT	Spatial Planning Act
ZCHAV	Clean Ambient Air Act
ICT	Information and Communications Technologies
DER	Distributed energy resources
KAT-PP	Road Transport Control – Traffic Police
FEI	Final energy intensity
FEC	Final energy consumption
EERECL	Energy Efficiency and Renewable Energy Credit Line
CN	Combined Nomenclature
EF	Efficiency factor
CHP	Combined heat and power generation

Abbreviation	Description
MAF	Ministry for Agriculture and Food
MEET	Ministry of Economy, Energy and Tourism
MoEW	Ministry of the Environment and Waters
MRDPW	Ministry for Regional Development and Public Works
CM	Council of Ministers
MTITC	Ministry of Transport, Information Technology and Communications
MF	Ministry of Finance
NLTPPURES	National Long-term Programme for the Promotion of the Use of Renewable Energy Sources 2005-2015
NTF	National Trust Fund
NEK	National Electric Company
NREAP	National Renewable Energy Action Plan
NPCC	National Plan on Climate Change
NSI	National Statistical Institute
NESAP	National Environmental Strategy and Action Plan
EIA	Environmental impact assessment
OP	Operational Programme
CA	Compatibility assessment
MP	Master plan
PSHPP	Pumped storage hydropower plant
GHG	Greenhouse gases
EEF	Energy Efficiency Facility
DCM	Decree of the Council of Ministers
PPZOZZ	Rules for implementing the Agricultural Land Protection Act (‘ZOZZ’)
RDP	Rural Development Programme
EMEPA	Enterprise for the Management of Environmental Protection Activities
DMP	Detailed master plan
RPHPCI	Regional Public Health Protection and Control Inspectorate

RDNCS	Regional Directorate for National Construction Supervision
RIEW	Regional Inspectorate for the Environment and Waters
DEG	Distributed energy generation
JI	Joint implementation
EU ETS	EU Emission Trading Scheme
TGC	Tradable green certificates
PVE	Photovoltaic energy
EPBD	Energy Performance of Buildings Directive
REECL	Residential Energy Efficiency Credit Line

UNITS OF MEASUREMENT

ktoe	thousand tonnes of oil equivalent
kV	kilovolt, a unit of voltage
kW	kilowatt, a unit of power
kWp	kilowatt-peak, output of a photovoltaic module under standard conditions
MW	megawatt, a unit of power
MWh	megawatt-hour = 0.085984522786 toe, a unit of energy; 1 MWh = 3.6 GJ = 0.0860 toe
t	tonne
toe	tonne of oil equivalent, 1 toe = 11.63 MWh, a non-standard unit of energy
GJ	gigajoule
sp. m^3.	spatial cubic metre

1. SUMMARY OF NATIONAL RENEWABLE ENERGY POLICY

One of Bulgaria's priority objectives is bringing the country's social, political and economic life into line with the European norms and standards.

Bulgaria has taken an active role in the international efforts to help prevent climate change by supporting the concerted actions of the European Union and the wide-ranging package of measures in the energy sector. These measures give a new impetus to Europe's energy security and support the EU's '20-20-20' targets. The widespread use of renewable sources ('RS') and the implementation of energy efficiency measures are among the priorities of the national energy policy and are in conformity with the objectives of the new energy policy for Europe.

The National Renewable Energy Action Plan ('NREAP') is the main instrument developed to ensure the achievement of the national renewable energy targets.

The plan has been drawn up in accordance with the requirements of Directive 2009/28/EC and, more specifically, with the template adopted by Commission Decision of 30 June 2009. The plan is based on an integrated approach to the country's public and social life, taking into account the development of the various economic sectors and the protection and preservation of the environment and human life and health. It aims to ensure a smooth transition towards a low-carbon economy based on modern technologies and greater use of renewable energy sources.

The use of renewable sources, as well as the rational use of energy, is a major driving force for sustainable development, ensuring at the same time security of supply, reducing dependence on abrupt changes in oil prices, helping to reduce the trade imbalance and encouraging job creation.

The main tools laid down in the NREAP — regulatory, economic, financial and soft measures — take into consideration the specific features of the Bulgarian economy, the social conditions, the available resources and technologies and the opportunities for cooperation with the countries from the region and the other EU Member States.

In drawing up the NREAP, account was taken of the fact that Bulgaria started from a much lower level of economic development as compared to most of the other Member States of the European Union. The establishment and implementation of the institutional and legal framework for promoting the production and consumption of renewable energy began only in 2007 – much later than in the 'old' EU Member States. Tremendous changes in all political and economic aspects as well as in the social structure had to be effected in the years following 1989. The crisis

in the 1990s led to a considerable slow-down of reforms, which resulted in the delayed introduction of cost-oriented tariffs and market mechanisms in the energy sector.

A fully-fledged energy market having the necessary components is not yet fully accomplished in the electricity and natural gas sector. The insufficient experience of energy suppliers and consumers in the field of renewable energy technologies and the relatively higher prices result in weaker demand for small-scale renewable energy technologies as compared to other parts of the European Union. New technologies are still slowly making their way in certain sectors, especially in the heating systems and transport sector, which prevents the realisation of the country's considerable potential for reducing the energy intensity of the economy.

Trade in carbon credits, guarantees of origin and other similar market mechanisms, which play an important role in the development of a sustainable energy sector in many European countries, have yet to be implemented in Bulgaria.

The development of the renewable energy sector and the implementation of the National Renewable Energy Action Plan are closely related to the development and implementation of energy efficiency measures. Important factors for this are human resource capacity building at all levels (the central, regional and local administration, the supply and services sectors, i.e. the business) and providing information to stakeholders. It is particularly important for consumers to be informed and to adopt policies aimed at protecting the environment and for investors to have access to information concerning the renewable energy potential and the conditions regarding its utilisation. Above all, the setting of binding national targets for the use of energy from renewable sources depends on the economic conditions and the country's ability to implement financial instruments.

The national indicative target for 2010, set in the Treaty concerning the accession of the Republic of Bulgaria to the European Union and Directive 2001/77/EC, is an 11 % share of electricity from renewable sources in the gross domestic consumption of electricity. The National Long-term Programme for the Promotion of the Use of Biofuels for Transport sets a national indicative target of a 5.75 % share of biofuels in the consumption of petrol and diesel fuels in the transport sector, which is fully consistent with the Community target as set out in Directive 2003/30/EC.

Under Directive 2009/28/EC, Bulgaria's mandatory national target for 2020 is a 16 % share of energy from renewable sources in the gross final consumption of energy, including a 10 %

share of energy from renewable sources in the consumption of energy in the transport sector. In 2005, the respective shares were 9.27 % and 0 %.

The use of energy from renewable sources — in line with the requirements of Directive 2009/28/EC — is analysed, promoted and reported separately along three lines:

- consumption of electricity – from wind, solar and geothermal energy, hydropower and biomass;
- consumption of energy for heating and cooling – solar and geothermal energy and biomass;
- consumption of energy from renewable sources in transport – biofuels and electricity produced from renewable sources.

The long-term implementation of the renewable energy policy is ensured by the national legislation which reflects and fully implements the requirements laid down by the European Parliament and the Council with regard to energy generation from renewable sources.

The national policy on the promotion of energy generated from renewable sources has the following objectives:

- promoting the development and use of technologies for the production and consumption of energy from renewable sources and alternative energy sources;
- promoting the development and use of technologies for the production and consumption of biofuels and other renewable fuels in the transport sector;
- diversification of energy supplies;
- strengthening the capacity of small and medium-sized producers of energy from renewable sources and alternative energy sources and producers of biofuels and other renewable fuels;
- protection of the environment;
- creating conditions for achieving sustainable development at local and regional level.

The effective national policy envisages the attainment of these objectives through the following group of activities:

- introduction of mechanisms for the promotion of the production and consumption of

energy produced from renewable and alternative energy sources and the production and use of biofuels and other renewable fuels for transport;

- regulating the rights and obligations of the State and local authorities in implementing the State policy on the promotion of the use of renewable energy sources, alternative energy sources, biofuels and other renewable energy;
- setting up a national public information system which is to provide information on:

a) the available renewable energy resources, alternative energy sources, biofuels and other renewable fuels;

b) producers of energy from renewable and alternative energy sources;

c) producers of biofuels and other renewable fuels.

- supporting research and development in the field of production and utilisation of renewable energy sources, alternative energy sources and biofuels.

Bulgaria's renewable energy policy has been laid down in the Energy Act ('ZE') and the Renewable and Alternative Energy Sources and Biofuels Act ('ZVAEIB'). A draft Renewable Energy Act ('ZEVI') has been prepared. It was approved by Council of Ministers Decision No 73 of 8 February 2011 and passed on first reading by the Bulgarian National Assembly on 24 February 2011. When it is adopted by the Bulgarian National Assembly, the ZVAEIB will be revoked and the transposition of Directive 2009/28/EC will be complete.

The Energy Act "regulates the public relations pertaining to the production, import, export, transmission, transit and distribution of electricity, heat and natural gas, transportation of petroleum and petroleum products and trade in electricity, heat and natural gas and defines the powers of the public authorities in the elaboration of the energy policy, regulation and control". One of the primary objectives of the Act is to establish the conditions for:

- high-quality and reliable supply of electricity, heat and natural gas to the public;
- the development of the energy sector and the country's energy security through the efficient use of energy and energy resources;
- the creation and development of competitive and financially stable energy market;
- supply of energy at minimum prices;
- the promotion of combined heat and power generation;

- the development of the transmission infrastructure for electricity, natural gas, crude oil or petroleum products within and throughout the territory of the country; all activities related to the production, import, export, transmission, transit, distribution and trade in electricity, heat, natural gas, petrol and petroleum products are to be carried out, while ensuring protection of human life and health, of the property, the environment and consumer and national interests.

In order to promote the production of energy from renewable sources and biofuels, as well as to encourage their use, Bulgaria has developed a coherent national policy. The draft ZEVI, which will supersede the ZVAEIB, is the main national instrument laying down the general principles of the country's renewable energy policy.

This Act "regulates the public relations pertaining to the promotion of the production and consumption of electricity, heating and/or cooling from renewable and alternative energy sources, as well as the production and use of biofuels and other renewable fuels for transport". It ensures the full transposition of 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.

The Act has introduced incentives and obligations for participants in the renewable energy market, namely:

- priority connection of producers of electricity from renewable sources to the transmission and/or distribution network;
- obligatory purchase of the electricity produced from renewable sources, except for hydropower plants (HPPs) of over 10 MW installed capacity;
- preferential purchase prices for the electricity produced, except for electricity produced by HPPs of over 10 MW installed capacity;
- time limit for connection that does not exceed the time period notified by the producer for putting the energy facility into operation;
- the owners of the transmission and distribution networks are required to allocate funds in their investment programmes for network development in relation to the promotion of electricity produced from renewable sources.

Feed-in tariff rates are set by the State Energy and Water Regulatory Commission ('SEWRC') by 31 March each year. In late 2008, amendments were made to the Act with regard to the duration of long-term agreements, namely:

- the duration of agreements with producers of electricity from geothermal and solar energy was extended from 12 to 25 years;
- the duration of agreements with producers of electricity from other renewable sources was extended from 12 to 15 years.

The time limits for obligatory purchase with respect to new producers of electricity from renewable sources, except for HPPs of over 10 MW installed capacity, start to run at the time of entry into service of the energy facility but no later than 31 December 2015.

The preferential treatment of electricity provided for in the Energy Act and the Renewable and Alternative Energy Sources and Biofuels Act is placed under the responsibility of the State Energy and Water Regulatory Commission. Preferential prices for the purchase of electricity produced from renewable sources are set in accordance with the Ordinance on regulating the prices of electric power. These prices amount to 80 per cent of the average selling price of the Public Supplier or Public Retailers in the previous calendar year plus a surcharge determined by the SEWRC. The amount of the surcharge depends on the type of technology and capacity of the energy facility and is determined by the Electricity Price Regulation subject to the Energy Act.

As regards the use of renewable energy sources for heating and cooling, the regulatory framework is underdeveloped and does not provide significant incentives. Support for the development of the use of renewable energy sources in this respect comes mainly from funds and programmes supporting the initial investment in these technologies.

The Renewable and Alternative Energy Sources and Biofuels Act has set national indicative targets for the use of biofuels or other renewable fuels for transport, as well as their minimum share in the total annual consumption of petrol and diesel fuels in the transport sector. Under this Act, "persons placing on the market petroleum-derived liquid fuels for transport purposes are under an obligation, on their release for consumption within the meaning of the Excise Duties and Tax Warehouses Act, to offer fuels for diesel and petrol engines blended with biofuels". The blending of biofuels with liquid fossil fuels takes place only in licensed tax warehouses in accordance with the Excise Duties and Tax Warehouses Act.

The Excise Duties and Tax Warehouses Act provides for the implementation of the following financial incentives for the use of biofuels:

- a reduced rate of excise duty for unleaded petrol when bioethanol falling within CN code 2207 20 00 with 4 % to 5 % of volume has been added;
- a reduced rate of excise duty for gas oil when biodiesel falling within CN code 3824 90 99 with 4 % to 5 % of volume has been added.

Electricity generation from renewables also fell within the range of sectors supported under the Investment Promotion Act. The incentive measures under this Act are aimed at creating a more favourable business environment and investment climate and are consistent with Regulation (EC) No 800/2008 declaring certain categories of aid compatible with the common market.

The National Long-term Programme for the Promotion of the Use of Renewable Sources 2005-2015 ('NLTPPURES') provides for a significant increase of the share of RS. The programme strives to increase the share of electricity produced from renewable energy sources to 9 % or more of the gross electricity generation in 2015. It lays down the measures and policy on the promotion of the use of renewable energy sources in the national energy balance, taking into account the conditions for utilisation of renewable sources in the country, the need to accelerate the use of renewable sources over the next ten years and the mutual influence of increased energy efficiency and increased use of renewable sources in the country with a view to achieving sustainable energy development.

In order to promote the use of renewable energy sources in the transport sector, a National Long-term Programme for the Promotion of the Use of Biofuels for Transport 2008-2020 was developed and adopted in 2007, which lays down measures to increase the production and use of biofuels in the period up to 2020 and provides an estimate of the agricultural areas required for production.

At this stage of development and dissemination of technologies, the energy produced from renewable sources is more expensive, sometimes significantly, than that produced from fossil resources. Therefore, the implementation of programmes and measures promoting the use of renewable energy sources cannot take place without suitable sources and mechanisms for financing. The main source of financing the transition and implementation of the low-carbon energy policy is consumption, that is to say, the economy as a whole. Financial flows are determined mainly by the financial mechanisms for the promotion of the production and supply of energy from renewable sources — feed-in tariffs which cover not only the increased costs of energy production

but also the increased costs of energy systems and networks related to the construction of different types of facilities, reserve and control capacities, control systems and many others — but these are complemented by auxiliary sources which have specific purposes and intended uses, scales and effects.

The main financial mechanisms implemented in the country to promote the production and consumption of energy from renewable sources are as follows:

- The utilisation of the local renewable energy potential has been set as a priority in the National Strategic Reference Framework for 2007-2013. Individual operations have been laid down in the Operational Programmes “Development of the Competitiveness of the Bulgarian Economy” and “Regional Development” as well as in the Rural Development Programme for 2007-2013. The two operational programmes are financed by the European Regional Development Fund (ERDF), which also provides support for renewable energy projects. Around EUR 66.5 million have been earmarked for renewable energy projects for the programming period 2007-2013 (representing 2.1 % of the total ERDF budget allocated for the country). The ERDF finances mainly public (non-profit) organisations. Grants to public organisations amount up to 100 %, while those to private organisations – from 50 to 70 % according to the size of the organisation. Renewable energy installations connected to the grid do not receive financial assistance from the ERDF as these are stimulated by the feed-in tariff system.
- The Energy Efficiency Fund finances investments in energy efficiency and renewable energy. The Fund offers free technical assistance and lower interest rates on loans than those prevailing on the market. Projects totalling BGN 30 000 to BGN 3 million with a payback period up to 5 years are eligible for financing.
- The Energy Efficiency and Renewable Energy Credit Line (‘EERECL’) facility offers free technical assistance and grants of up to 15 % of the amount of borrowed capital to private companies. The EERECL facility finances a wide variety of energy efficiency and renewable energy projects of private companies.
- The Enterprise for the Management of Environmental Protection Activities (‘EMEPA’) is a state-owned enterprise set up under the Environmental Protection Act. The enterprise provides financial assistance to a wide variety of projects contributing to the creation of a cleaner environment. As regards renewable energy,

it helps to construct small HPPs by offering interest-free loans with a duration of up to 5 years, amounting up to 70 % of the total costs of the project but not exceeding BGN 1.5 million, imposing the requirement that the investment costs per kilowatt to build should be up to BGN 2 500/kW.

- The Energy Efficiency Facility ('EEF') of the European Investment Bank and the Kozloduy International Decommissioning Support Fund ('KIDS Fund') promotes energy efficiency and renewable energy in Bulgaria. It provides loans combined with grants (of up to 20 %) as well as technical assistance for project planning and implementation. Project costs should be between EUR 40 000 and EUR 25 million.
- The EBRD Residential Energy Efficiency Credit Line provides assistance with the support of the KIDS Fund to households and building owner associations to reduce heating costs by implementing energy efficiency and renewable energy measures. Eligible renewable energy measures relate to the installation of high-efficiency biomass stoves and boilers and solar water heaters. Support includes loans, grants and technical assistance. The amount of the grant is up to 20 % or 30 % of the amount of the loan, but not more than EUR 2 000. The facility ceased operating in January 2010 but it is likely that it will be renewed.

As regards energy efficiency, Bulgaria has adopted the Energy Efficiency Act, aiming to promote energy efficiency as a key to improving economic competitiveness, security of supply and preservation of the environment through various measures, which include:

- using a system of measures and activities to improve energy end-use efficiency;
- developing the energy services market and carrying out activities and measures to improve energy end-use efficiency of energy traders.

Pursuant to Directive 2006/32/EC on energy end-use efficiency and energy services, Bulgaria has adopted a national indicative energy savings target of not less than 9 % of the final energy consumption for 9 years by 2016 (2008-2016, by 1 % per year on average), which means that fuel and energy savings of 627 000 toe must be achieved. The Directive requires Member States to develop three National Energy Efficiency Action Plans, each covering a period of three years. Bulgaria has developed and implemented the first of these plans, covering the period 2008-2010. The Second National Action Plan for 2011 - 2013 will soon be developed and adopted.

A draft National Energy Strategy up to 2020 has been drawn up; it has been approved by the Council of Ministers and will be examined and adopted by the National Assembly of the Republic of Bulgaria. Increasing the share of energy from renewable sources in gross final consumption of energy and improving energy efficiency are among the priorities set by the government to be pursued in the next 10 years.

The Renewable and Alternative Energy Sources and Biofuels Act introduced a number of incentives for the production of electricity from renewable energy sources in terms of prices, obligatory purchase of the electricity produced and long-term agreements. These incentive mechanisms are a key factor in attracting investors and whetting investor appetite as well as creating a favourable business environment which is to stimulate the construction of plants producing electricity from renewable energy sources. This has led to increased investor appetite for the production of renewable energy in recent years but has also created a few problems that constitute barriers to the development of the sector, the major of which are as follows:

- too many investors have expressed intentions to construct wind and solar farms which go beyond the capacity of the energy system;
- renewable energy projects have been implemented in sensitive areas with environmental restrictions in breach of environmental assessment procedures;
- requests have been submitted for the conversion of agricultural land to non-agricultural purposes in connection with the implementation of projects for the construction of wind and photovoltaic plants by investors that have not secured the necessary financial resources for these projects, which results in the alteration of the status and designation of fertile land and precludes its further use for agricultural purposes;
- a large number of the potential investors who submit feasibility study applications do not have serious investment intentions or do not have the financial capacity and technical expertise to implement these projects; only 10-15 % of the projects notified are operational and work is actually being carried out with regard to their implementation.

Based on the lessons learned and the experience already gained in the implementation of the existing legislation, the National Renewable Energy Action Plan and the new Renewable Energy Act include new and additional measures and incentives for the development of renewable energy, avoiding the weaknesses and deficiencies detected so far.

The preparation of the National Renewable Energy Action Plan ('NREAP') fulfils the requirements laid down in Directive 2009/28/EC that each Member State should develop an action plan, which is to ensure achievement of the national targets for the share of energy from renewable sources in gross consumption of energy and in transport.

The NREAP establishes the general framework to be followed and implemented in the national legislation and outlines the actions to be taken by the local, regional and national authorities by 2020 in order to promote the use of renewable energy.

Bulgaria's energy policy strives to make energy production cleaner and more efficient through the deployment of energy from renewable sources and the more efficient use of fossil energy sources, minimise the impact of energy generation and consumption on the environment, and improve the management of natural resources. The expected results of this policy are twofold: minimising pollution and exploring new lines of action through greater efficiency and by promoting new technologies for the rapidly developing global market, as well as by reducing energy consumption and securing a diverse and cheap energy mix.

2. EXPECTED FINAL ENERGY CONSUMPTION 2010-2020

The estimates for the gross final energy consumption of the Republic of Bulgaria for the period 2010-2020 are arranged by types of energy consumed, produced from conventional and renewable sources (Table 1), and follow two development scenarios:

- a “reference scenario”, taking into account the energy efficiency and energy saving measures in force before 2009;
- an “additional energy efficiency scenario”, taking into account the future measures to be adopted after 2009 in order to improve the efficiency of energy consumption.

In 2005, the gross final consumption of energy calculated on the basis of data from the 2005 Energy Balances of the National Statistical Institute (NSI) of the Republic of Bulgaria was 10 314 ktoe. Energy for heating and cooling purposes made the largest contribution (44.1 %) to gross final consumption of energy, followed by consumption of electricity (30.3 %) and energy for transport (25.6 %). The estimates in both scenarios are based on the assumption that this pattern will not undergo any substantial changes in the period up to 2020 as compared to the base year 2005.

In the reference scenario, the gross final consumption of energy is expected to reach 13 263 ktoe or, in other words, to experience an increase of nearly 29 % as compared to the base year 2005. These indicators undergo much smaller changes in the additional energy efficiency scenario, which assumes an increase in gross final consumption of energy up to 10 738 ktoe or, in other words, an increase of only 4 %. The significant difference between the two scenarios is largely due to the large-scale implementation of additional energy end-use efficiency measures in all economic sectors such as industry, transport, households, services and agriculture in accordance with the country’s commitments in relation to the implementation of Directive 2006/32/EC. The additional measures also aim at improving the efficiency of the conversion process and reducing the technological costs and losses arising from energy transmission and distribution. With the implementation of all these energy efficiency measures in the period up to 2020, the additional energy efficiency scenario assumes that the binding national target with regard to the production and consumption of energy from renewable sources will be achieved with 404 ktoe of renewable energy less.

The comparison of the estimates in the two scenarios for the period up to 2020 leads to the following conclusions:

The implementation of additional energy efficiency measures in the period up to 2020 means in practice saving 2 525 ktoe of fuels and energy. The most significant reduction can be observed in heating and cooling, reaching about 25 % (1 555 ktoe), due to the package of energy efficiency measures applied in the industry, services and building sector. The reduction in the transport sector amounts to about 15 % (521 ktoe) and, given the steadily increasing demand trends in the sector, such a level of consumption can only be achieved through modernisation of the vehicle fleet, expansion of the use of rail transport and balanced development of the different types of transport. As regards electricity, the reduction amounts to at least 12 % (449 ktoe) and results from the increased conversion efficiency.

The two forecast scenarios have been set out in section 2 of this document, while all the other parts of the NREAP are based only on the additional energy efficiency scenario.

In accordance with Article 5(6) of Directive 2009/28/EC, for the purpose of measuring compliance with the 2020 target and the interim trajectory, the amount of energy consumed in aviation is to be considered to be no more than 6.18 % of the Member State's gross final energy consumption. Within the period 2005-2008, the amount of energy consumed in aviation was within the range of 1.9-2.4 % of Bulgaria's gross final energy consumption in the transport sector. These figures are significantly below the limit of 6.18 % laid down in the template for national renewable energy action plans and, therefore, no adjustments are needed. The estimates set out below are based on the assumption that this trend will continue until 2020.

Table 1

Expected gross final energy consumption by types of energy in the Republic of Bulgaria for the period 2010-2020 taking into account the effects of energy efficiency and energy saving measures, ktoe

	2005	2010		2011		2012		2013		2014	
	base year	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario
heating and cooling	4	4	4	4	4	5	4	5	4	5	4
electricity	3	3	3	3	3	3	3	3	3	3	3
transport as in Article 3(4)(•)	2	2	2	2	2	2	2	2	2	2	2
Gross final energy	**10 314**	**10 671**	**10 191**	**10 744**	**10 132**	**11 037**	**10 221**	**11 393**	**10 282**	**11 726**	**10 313**

consumption											

	2005	**2010**		**2011**		**2012**		**2013**		**2014**	
	base year	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario
heating and cooling	4 543	4 851	4 492	4 854	4 413	5 036	4 462	5 258	4 509	5 461	4 538
electricity	3 129	3 130	3 130	3 174	3 164	3 218	3 182	3 263	3 181	3 309	3 175
transport as in Article 3(4)(•)	2 642	2 830	2 776	2 857	2 846	2 928	2 872	3 021	2 888	3 110	2 895
Gross final energy consumption	**10 314**	**10 811**	**10 398**	**10 885**	**10 423**	**11 182**	**10 516**	**11 542**	**10 578**	**11 880**	**10 608**

Table 1 (cont'd)

Expected gross final energy consumption by types of energy in the Republic of Bulgaria for the period 2010-2020 taking into account the effects of energy efficiency and energy saving measures, ktoe

	2015		2016		2017		2018		2019		2020	
	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario	reference scenario	additional energy efficiency scenario
heating and cooling	5 640	4 539	5 765	4 494	5 898	4 557	6 008	4 611	6 105	4 626	6 193	4 638
electricity	3 355	3 171	3 402	3 163	3 450	3 155	3 498	3 148	3 547	3 144	3 597	3 148
transport as in Article 3(4)(•)	3 191	2 898	3 252	2 900	3 315	2 914	3 372	2 929	3 423	2 941	3 473	2 952
Gross final energy consumption	**12 186**	**10 608**	**12 419**	**10 557**	**12 663**	**10 626**	**12 878**	**10 688**	**13 075**	**10 711**	**13 263**	**10 738**

3. RENEWABLE ENERGY TARGETS AND TRAJECTORIES

3.1. National overall target

The assessment of the existing technical potential for renewable energy that can be exploited in Bulgaria in the period up to 2020 was made on the basis of some starting assumptions about the integrated development of Bulgaria's economy. The preparation of this assessment was based on the following key assumptions:

- GDP growth rate in the period up to 2020 consistent with the projections of the Ministry of Finance;
- a forecast of the end usage of fuels and energy for the period 2010-2020 in the transport sector, put forward by the Ministry of Transport, Information Technologies and Communications;
- reduced volume of investments in the industry, and in particular in the energy sector, in the period up to 2011 due to the global financial crisis;
- increased investor appetite for renewable energy in the period 2012-2015 due to the obligatory purchase of the electricity produced from renewable sources at preferential prices;
- weak investor interest in renewable energy after 31 December 2015 due to the expiry of the period of obligatory purchase of the electricity produced from renewable sources at preferential prices;
- trends in the development of the efficiency of technologies using renewable energy sources;
- trends in the marginal costs of technologies using renewable energy sources;
- forecast oil prices for the period 2010-2020 and their impact on the prices of petroleum-derived fuels leading to the increased (decreased) market competitiveness of liquid biofuels;
- forecast oil and natural gas prices for the period 2010-2020 and their impact on the cost of agricultural production constituting the feedstock basis for solid biomass, biogas and biofuels.

Bulgaria's binding national target for the share of energy from renewable sources in the gross final consumption of energy in 2020 (in accordance with Annex I, Part • of Directive 2009/28/EC) is 16 %. Expressed in terms of quantity of energy in the additional energy efficiency scenario, this target corresponds to 1 718 ktoe of energy from renewable sources.

At the end of December 2009, Bulgaria submitted a forecast document concerning the production of renewable energy in accordance with which the technical potential for production of energy from renewable sources is around 4 500 ktoe. The distribution between the various types of sources is uneven with hydropower (~31 %) and biomass (~36 %) having the highest shares. The country's geographical location predetermines the marginal share of wind energy (~7.5 %) and wave and tidal energy. At the same time, the country has substantial forest resources and well-developed agriculture — sources both of solid biomass, biogas and biofuels. As at 2008, Bulgaria made full use of its hydropower potential through HPPs and, partly, its solid biomass potential, which was used primarily for heating in households and in public buildings. Electricity generation from wind and photovoltaic power plants is rapidly developing, as well as the use of solar energy for hot water purposes in the residential and services sector.

Studies have shown that the country's existing technical potential for production of energy from renewable sources is sufficient to ensure the achievement of the binding national target of a 16 % share of energy from renewable sources in the gross final consumption of energy in 2020.

Table 2 shows the achievement of the national overall target of a 16 % share of energy from renewable sources under the additional energy efficiency scenario. The share of energy from renewable sources indicated for 2005 corresponds to the share of the Republic of Bulgaria set out in Annex I to Directive 2009/28/EC.

Table 2

Binding national target for the share of energy from renewable sources in gross final consumption of energy in 2005 and 2020 (with figures transcribed from Annex I, Part • to Directive 2009/28/EC) in the additional energy efficiency scenario

A. Share of energy from renewable sources in gross final consumption of energy in 2005 (S_{2005}) (%)	9.4
B. Target of energy from renewable sources in gross final consumption of energy in 2020 (S_{2020}) (%)	16.0

C. Expected gross adjusted consumption of energy in 2020 (from Table 1, last cell) (ktoe)	10 738
D. Expected amount of energy from renewable sources corresponding to the 2020 target (calculated as B x C) (ktoe)	1 718

3.2. Sectoral targets and trajectories

This section outlines the sectoral targets and trajectories developed in accordance with the template for national renewable energy action plans. The estimated shares of energy from renewable sources in the different sectors have been determined on the basis of common indicators and criteria and assumptions about the specific development of each RES type.

Table 3

National 2020 target and estimated trajectory of energy from renewable sources in heating and cooling, electricity and transport in the reference scenario, (%)

	2005	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
RES - H&C	15.9	16.5	17.3	17.9	18.5	19.8	20.8	21.9	22.0	22.3	23.0	23.8
RES - E	8.4	10.6	12.1	13.4	15.0	16.7	18.6	19.0	20.1	20.4	20.6	20.8
RES - T	0.1	1.3	1.8	2.5	3.3	4.5	5.8	7.1	8.4	9.4	10.1	10.8
Overall RES share	**9.6**	**10.1**	**10.7**	**10.7**	**11.4**	**11.4**	**12.4**	**12.4**	**13.7**	**13.7**	**14.8**	**16.0**
Of which from cooperation mechanism	0	0	0	0	0	0	0	0	0	0	0	0
Surplus for cooperation mechanism	0	0.6	0.8	1.6	1.9	3.3	3.6	4.6	4.0	4.4	3.8	3.2

As Part B of Annex I to the Directive	**2010**	**2011-2012**	**2013-2014**	**2015-2016**	**2017-2018**	**2019**	**2020**
	S_{2010}	S_{2005} + 20 % (S_{2020}-S_{2005})	S_{2005} + 30 % (S_{2020}-S_{2005})	S_{2005} + 45 % (S_{2020}-S_{2005})	S_{2005} + 65 % (S_{2020}-S_{2005})	S_{2019}	S_{2020}
RES minimum trajectory (%)	10.1	10.7	11.4	12.4	13.7	14.8	16.0
RES minimum trajectory (ktoe)	1 025	1 122	1 205	1 309	1 459	1 590	1718

Table 4a

Calculation table for the renewable energy contribution of each sector to final energy consumption, (ktoe)

		2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(A)	Expected gross final consumption of RES for heating and cooling	724	741	765	799	833	900	943	983	1 003	1 028	1 065	1 103
(B)	Expected gross final consumption of electricity from RES	264	330	381	425	478	530	590	601	633	641	647	654
(•)	Expected final consumption of energy from RES in transport	3	36	51	71	95	130	166	202	239	265	284	302
(D)	**Expected total RES consumption**	**991**	**1 107**	**1 197**	**1 296**	**1 406**	**1 560**	**1 699**	**1 786**	**1 875**	**1 934**	**1 996**	**2 059**
(E)	Expected transfer of RES to other Member States	0	61	80	168	202	353	386	481	420	471	411	341

(F)	Expected transfer of RES from other Member States and 3rd countries	0	0	0	0	0	0	0	0	0	0	0	0
(G)	**Expected RES consumption adjusted for target (D)-(E)+(F)**	**991**	**1 046**	**1 117**	**1 128**	**1 204**	**1 207**	**1 313**	**1 305**	**1 455**	**1 463**	**1 585**	**1 718**

Table 4b

Calculation table for the renewable energy in transport share, (ktoe)

		2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(C)	Expected RES consumption in transport	3	36	51	71	95	130	166	202	239	265	284	302
(H)	Expected RES electricity in road transport	0	0	0	0	0	0	1	2	3	6	6	8
(I)	Expected consumption of biofuels from wastes, residues, non-food cellulosic and ligno-cellulosic material in transport	0	0	0	0	0	0	0	0	1	2	3	4
(J)	Expected RES contribution to transport for the RES-T target: (C) + (2,5 - 1) x (H) + (2 - 1) x (I)	3	36	51	71	95	130	168	205	244	276	296	318

		2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(C)	Expected RES consumption in transport	0	30	51	67	81	100	115	127	150	164	178	195
(H)	Expected RES electricity in road transport	0	0	0	0	0	0	0	0	0	3	3	3
(I)	Expected consumption of biofuels from wastes, residues, non-food cellulosic and ligno-cellulosic material in transport	0	0	0	0	0	0	0	0	1	2	3	4
(J)	Expected RES contribution to transport for the RES-T target: (C) + (2,5 - 1) x (H) + (2 - 1) x (I)	0	30	51	67	81	100	115	127	151	171	186	204

4. MEASURES FOR ACHIEVING THE TARGETS

4.1. Overview of all policies and measures to promote the use of energy from renewable sources

The Republic of Bulgaria has taken steps to implement in its national energy policy the requirements of Community law relating to the common rules for the creation and development of the internal energy market and the promotion of the production and consumption of electricity from renewable sources. The country mainly uses hydropower for electricity generation and biomass for heating.

Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market has been transposed into the Bulgarian legislation by the Renewable and Alternative Energy Sources and Biofuels Act and its respective regulations. After analysing the possible incentive mechanisms and reviewing the good practices put in place in other Member States, a feed-in tariff system has been adopted, which provides greater certainty to investors and, as EU experience shows, delivers much faster results.

The feed-in tariff system creates the conditions for the promotion of electricity produced from renewable sources, while tariff rates take into account the type of technology and efficiency of generating equipment.

The Renewable and Alternative Energy Sources and Biofuels Act also provides for other incentives such as:

- obligatory connection to the network of the transmission or distribution companies;
- payment only of the direct costs of connection to the electricity transmission or distribution networks;
- long-term power purchase agreements (25 years with respect to electricity produced from geothermal and solar energy and 15 years with respect to electricity produced from hydropower plants of up to 10 MW installed capacity and electricity produced from other types of renewable sources);
- obligatory purchase of the electricity produced from renewable sources.

A number of incentives for the use of biofuels in the transport sector have also been defined:

- compulsory blending of biofuels with mineral oil derivatives;
- reduced rate of excise duty for biofuel blends of a specified percentage.

As a result of these measures, interest in renewable sources has grown and new plants have been constructed – small hydropower plants, individual wind turbines, and wind and solar photovoltaic farms.

The draft ZEVI will continue this support through feed-in tariffs and other mechanisms such as:

- guaranteed access to energy generated from renewable sources to transmission and distribution networks;
- guaranteed transmission and distribution of electricity generated from renewable resources;
- the construction of the necessary infrastructure and capacities for regulating the electrical energy system (EES);
- priority in the distribution of electricity from renewable sources;
- re-purchase of electricity from renewable sources.

The range of sectors the draft ZEVI covers has been expanded. In addition to electricity generation and transport, sectors for which the current ZVAEIB directed incentive mechanisms, the aims and mechanisms of the new act will also cover the heating and cooling sectors.

The measures for promoting the use of energy from renewable sources that are now in force in Bulgaria have been set out in Table 5.

4.1.1.Existing measures

Table 5

Specific measures to fulfil the requirements under Articles 13, 14, 16 and Articles 17 to 21 of Directive 2009/28/EC

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
1. Feed-in tariffs for electricity produced from renewable sources (FiT)	Financial	Energy generated (ktoe)	Investors	Existing	With respect to new projects, the measure will end in 2015. Duration of the agreement: 25 years in respect of solar and geothermal energy and 15 years in respect of energy from other renewable sources
2. Obligatory and priority connection of producers of electricity from renewable sources to the grid	Regulatory	Energy generated (ktoe)	Investors	Existing	No specific time limit

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
3. Payment only of the direct costs of connection to the grid	Regulatory	Installed capacity (MW/year)	Investors	Existing	No specific time limit
4. Long-term power purchase agreements with regard to electricity produced from renewable sources	Regulatory	Energy generated (ktoe)	Investors	Existing	15/25 years
5. Obligatory purchase of electricity produced from renewable sources, except for HPPs of over 10 MW installed capacity	Regulatory	Energy generated (ktoe)	Investors	Existing	15/25 years
6. Penalty payments in the event of curtailment of production due to the network operator's fault[1]	Financial	Energy generated (ktoe)	Investors	Existing	15/25 years

[1] The electricity system operator is required to give priority to the operation and load of installations using renewable energy sources. In the process of operational management, in order to maintain the operational security of the system or prevent overload of grid components, the electricity system operator or the distribution system operators may limit, including shut down, the operation of facilities generating electricity from RES. In such cases, the electricity network operators are not liable to pay penalties or compensation for loss of earnings.

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
7. Compensation mechanism for the costs of the Public Supplier and Public Retailers of purchasing electricity from renewable sources at preferential prices	Regulatory	Energy generated (ktoe)	Networks, investors, users	Existing	15/25 years
8. Licensing procedures for producers of electricity from renewable sources of over 5 MW installed capacity	Regulatory	Energy generated (ktoe)	Producers	Existing	15/25 years
9. Guarantees of origin	Regulatory	Energy generated	Investors	Existing	No specific time limit

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
		(ktoe)			
10. Obligations for persons placing on the market petroleum-derived liquid fuels for transport purposes to offer fuels for diesel and petrol engines blended with biofuels in the percentage terms laid down in the ZVAEIB and now in the ZEVI	Financial	Biofuel production and use (ktoe)	Investors, traders and public administration	Existing	In force from 2007; last amended by the ZVAEIB: 1 March 2010[2]
11. Reduced rate of excise duty for biofuel blends of a specified percentage	Financial	Biofuel production and use (ktoe)	Investors, traders and public administration	Existing	November 2009 to November 2011[3]
12. The authority responsible for supervising the quality of pure biofuels and biofuel blends has been designated	Administrative	Use of biofuels for transport	Distributors and end users	Existing	2007

[2] Renewable and Alternative Energy Sources and Biofuels Act (last amended: SG No 102 of 22 December 2009).

[3] State aid decision No N 607/2008 - Bulgaria: Tax reduction for biofuels, 23 November 2009.

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
13. Testing equipment for pure biofuels provided to the State Agency for Metrology and Technical Surveillance	Administrative	Use of biofuels for transport	Distributors, end users and public administration	Existing	End of 2009
14. Energy Efficiency and Renewable Energy Credit Line ('EERECL')	Financial	Energy generated (ktoe)	Investors and (industrial) end users	Existing	The facility expires in 2011. It may be extended.
15. Energy Efficiency Facility of the European Investment Bank and the KIDS Fund	Financial	Energy generated from RES	Investors	Existing	No specific time limit
16. Enterprise for the Management of Environmental Protection Activities	Financial	Electricity generated from small HPPs	Investors	Existing	No specific time limit
17. Operational Programme "Development of the Competitiveness of the Bulgarian Economy" 2007-2013	Financial	Electricity generated from RS	Investors	Existing	Start date: 2010

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
18. Rural Development Programme 2007-2013	Financial	Energy generated from R#S	Investors	Existing	Start date: 2010
19. OP “Regional Development”	Financial	Generation and consumption of energy from RS	Investors, the population	Existing	Start date: 2010
20. Application of the measures provided for in the Investment Promotion Act (‘ZNI’) and its implementing regulation, where appropriate	Administrative, Financial	Improving the business environment	Investors	Existing	Start date: 2008

4.1.2.Planned measures

The legal and regulatory framework in place in the Republic of Bulgaria for the promotion of electricity produced from renewable sources has given a strong impetus to initial investments but, in order to achieve further development, a substantial extension of the measures is required in order to remove the existing administrative, technical and financial barriers.

The analysis of the existing framework shows that it needs to be improved and developed along the following lines in order to rectify some deficiencies and to extend its scope in accordance with Directive 2009/28/EC:

- ensuring coordination for the implementation of the action plan between all public authorities involved and streamlining administrative procedures, designating a single implementing authority which is to monitor the process of implementation of the national plan and propose measures aimed at improving the legal framework and simplifying the administrative system;
- developing an appropriate information system and expanding the existing database on the production and consumption of energy from renewable sources in relation to the implementation of the plan, carrying out research and spatial referencing of the renewable energy potential, as well as identifying the opportunities for its utilisation through the development of a geographical information system, taking into account the weather conditions and expected changes, the plans for development of the transmission and distribution networks, the identified environmental, urban and technical constraints, etc.;
- introducing requirements for producers of electricity from renewable sources relating to the secure operation of the electricity transmission and distribution networks and addressing the need for introducing new technologies in relation to the construction of intelligent networks, control capacities, advanced storage and communication systems;
- attracting potential investors in the construction of energy generating installations using renewable sources by providing information and setting up databases, containing information on the investors, the conditions for connection to the transmission and distribution networks, the stage of development and construction of the sites, the available technologies, the suppliers of equipment as well as any

other relevant information;

- improving the conditions and expanding the funding opportunities for projects relating to the construction of new installations and expansion of the network;
- improving the regulatory framework with a view to implementing incentives for the introduction of new management technologies for the energy system and advanced development of the electricity transmission and distribution networks to accommodate new installations;
- adjusting the legal and regulatory framework with a view to achieving the targets at less cost by encouraging consumers, where possible, to:

a) use renewable sources for heating and hot water purposes (much cheaper than electricity);

b) use electricity, heating and cooling produced by small-scale installations at the place of consumption in order to reduce the losses from the conversion, transmission and distribution of electricity;

c) manage demand (and use electric cars) in order to facilitate regulation and reduce the need of storing electricity and constructing spare and control capacities;

d) stimulate competition between different technologies producing heating and cooling from renewable sources;

- improving the mechanisms for the promotion of the use of biofuels — including second-generation biofuels — complying with the sustainability criteria and taking into account the specificities of the process from the production of feedstock to the final consumption of biofuels in the transport sector.

The measures and the rationale behind them are set out in the tables below, broken down by categories:

1. Institutional
2. Electricity integration measures
3. Financial
4. Construction
5. Soft
6. Buildings

7. Distributed energy generation
8. Biofuels

Table 5 (Annex 1)

Institutional and information measures

Name and reference of the measure	Type of measure[4]	Expected result[5]	Targeted group and/or activity[6]	Existing or planned	Start and end dates of the measure
1. Setting up an Agency for Sustainable Energy Development	Administrative	Installed capacity, energy generated, energy consumed, behavioural change	Investors, energy companies, end users, planning authorities, associations and branch organisations, installers' organisations	Planned	2011
A specialised national body — the Agency for Sustainable Energy Development ('ASED') — will be set up as successor to the Energy Efficiency Agency for the purposes of monitoring and reporting on the implementation of the NREAP. The Agency will avail itself of the services of the already existing regional energy efficiency entities and will further develop their administrative capacity. The ASED will provide assistance in the development of municipal programmes, the streamlining of administrative procedures in the municipalities and the raising of public awareness of the advantages of introducing					

[4] Indicates whether the measure is (predominantly) regulatory, financial, administrative or soft (i.e. information campaign).
[5] The expected result includes behavioural change, installed capacity (MW; t/year), energy generated (ktoe).
[6] Who are the targeted persons: investors, end users, public administration, architects, suppliers of equipment, installers, etc. or what is the targeted activity/sector: industry, transport, end users, etc.

Name and reference of the measure	Type of measure[4]	Expected result[5]	Targeted group and/or activity[6]	Existing or planned	Start and end dates of the measure
energy from renewable sources in households and small and medium-sized enterprises and the use of biofuels in private and public transport, etc. The setting up of the Agency is provided for in the forthcoming amendment to the Renewable Energy Act.					
2. Setting up an inter-ministerial council at political level to coordinate the policy on the promotion of renewable energy	Administrative	Developing policies and legislative actions to promote renewable energy	The Ministers/Deputy Ministers of the MEET, MEW, MAF, MRDPW, MTITC	Planned	2011
The inter-ministerial council will establish the policy framework for the strategic implementation and development of energy from renewable sources in Bulgaria and initiate legislative actions within the competences of individual ministries. These activities will focus on the NREAP and will ensure its implementation.					
3. Setting up an advisory group to support the implementation of the NREAP	Soft	Installed capacity, energy generated, behavioural change, introducing high-efficiency technologies	Investors, energy companies, end users, planning authorities, associations and branch organisations, installers' organisations	Planned	2011

Name and reference of the measure	Type of measure[4]	Expected result[5]	Targeted group and/or activity[6]	Existing or planned	Start and end dates of the measure
The advisory group will help to remove barriers to the development of energy from renewable sources, improve the horizontal coordination of measures relating to the production and consumption of energy from renewable sources, provide information on requirements to stakeholders, etc. The group will carry out its activities in a transparent manner by conducting public hearings and will be composed of representatives of energy companies and of nationally recognised non-governmental organisations having the necessary experience and expertise in the field of renewables. In addition, the advisory group will assist the Agency for Sustainable Energy Development in the implementation and monitoring of the NREAP.					
4. Developing a geographical information system ('GIS') for Bulgaria	Soft	Installed capacity, energy generated	Investors, planning authorities, energy companies, end users	Planned	2011 onwards
Bulgaria's geographical characteristics and weather conditions determine the distribution of the renewable energy potential over the country's territory. The assessment and subsequent analysis of these territorial resources should take into account the environmental, social and even geopolitical constraints on their optimal use. The development of energy from renewable sources will be promoted by means of technologies requiring low investment and operating costs that have reached the level of "technical maturity" and high efficiency in the process of transformation of renewable resources into energy generated. The use of					

Name and reference of the measure	Type of measure[4]	Expected result[5]	Targeted group and/or activity[6]	Existing or planned	Start and end dates of the measure
such technologies will require the least possible cost to the public and the price of energy from renewable sources will be comparable to the price of energy for end users. One of the first tasks of the Agency for Sustainable Energy Development will be the development of a national public information system, which will show by means of a geographical information system of the renewable sources in Bulgaria the technical potential for production of renewable energy broken down by regions. The system will help investors by providing information on the areas with restrictions such as environmentally sensitive locations, national parks, protected areas (Natura 2000 areas, Ramsar sites, wetlands, protected species, etc.). Separate layers will show the associated infrastructure for the production of electricity and for the transmission and distribution of natural gas. The system will be regularly updated with information on the new energy generation capacities planned and points of connection to the grid. The national public information system will exchange data with the information system of the electricity system operator and will provide information on the possible capacities that can be connected, the points of connection, the existing bottlenecks or those arising out of investor interest and the emerging risks for the electricity system. The national public information system will help to remove the existing administrative barriers and streamline the authorisation, licensing, environmental impact assessment and environmental assessment procedures. The number of appealed procedures will be effectively reduced by including the plans for energy generation from renewable sources in local and regional spatial planning.					
5. Methodological guidelines for	Administrative	Investment process,	Investors, planning	Planned	2011 onwards

Name and reference of the measure	Type of measure[4]	Expected result[5]	Targeted group and/or activity[6]	Existing or planned	Start and end dates of the measure
the stages of the investment process in renewable sources by types of sources		installed capacity, behavioural change	authorities, end users		
The methodological guidelines proposed are necessary for ensuring transparency, information and facilitating the process of developing renewable energy projects. The guidelines will provide information on the legal framework in compliance with which projects should be developed and implemented, an exhaustive list of the necessary authorisations, the authorisation bodies, the time limits within which a decision should be taken, the documents to be submitted by the investor in order to obtain the relevant authorisation, as well as any other information relating to the transmission and distribution networks for electricity, heat or natural gas. These methodological guidelines and information regarding investment intentions will be provided by the Agency for Sustainable Energy Development in real time. In order to facilitate access for investors from other Member States, this information will be provided in one or more of the working languages of the European Union.					
6. Bringing the concluded preliminary connection agreements into line with the requirements of the new	Administrative	Installed capacity, behavioural change	Investors, planning authorities	Planned	2011

Name and reference of the measure	Type of measure[4]	Expected result[5]	Targeted group and/or activity[6]	Existing or planned	Start and end dates of the measure
Renewable Energy Act					
By the middle of 2010, preliminary agreements for more than 2 500 MW of installed renewable energy capacity have been concluded by the network companies, which are expected to be put into service by 2015. They may have a significant impact on the management and operational reliability of the grid and the quality of supply. Measures will include a timetable for bringing those projects where there are no connection agreements into line with the requirements to be laid down by the new Renewable Energy Act. These amendments will focus primarily on the duration of agreements and the documents required for the conclusion thereof. The purpose is to achieve a smooth development of the electricity transmission and distribution networks and connection of electricity generating installations in strict compliance with the sustainability criteria and the requirements for safe operation of the system.					
7. One-stop shops	Administrative	New installed capacity (MW/year)	Investors, end users	Proposed	2015 onwards
The authorisation procedure for the implementation of renewable energy projects will be considerably simplified if administrative services are provided at one-stop shops. Thus, procedures and administrative requirements will be aligned and standardised, as will the exchange of information between the different national and local authorities.					

Name and reference of the measure	Type of measure[4]	Expected result[5]	Targeted group and/or activity[6]	Existing or planned	Start and end dates of the measure
The process of implementing the “one-stop shop” model is not yet complete. With its final completion and entry into service, better services for investors will be ensured and the duration of the procedures relating to the construction of energy generating installations using renewable sources will be reduced. The Agency for Sustainable Energy Development will be responsible for the administrative management of its territorial entities and the exchange of information in order to take into account the specific requirements at regional and central level. The Ministry for Regional Development and Public Works and the Ministry of Economy, Energy and Tourism will streamline the administrative procedures for authorisation, certification and licensing. The fees for services to be paid by users, investors, planners, contractors, builders, architects, etc. will be made public.					
8. Enhancing the administrative competence and capacity of officials responsible for authorisation and licensing	Administrative	Behavioural change	Authorisation bodies (all levels)	Planned	2011 onwards
The administrative competence and capacity of officials determines to a large extent the efficiency of the overall system of deployment of the use of renewable sources. It includes aspects such as assessment of the risks, analysis of the costs and benefits, environmental assessments, etc., which would enable informed decision-making within a clearly specified time frame. The competence of officials at the local level needs to be particularly addressed					

Name and reference of the measure	Type of measure[4]	Expected result[5]	Targeted group and/or activity[6]	Existing or planned	Start and end dates of the measure
because of the limited financial and human resources at this level. The Republic of Bulgaria will take the necessary initiatives to train, inform and enhance the administrative and technical capacity at all levels of administration, leading to more efficient (more rapid and technically more reliable) authorisation decisions, which will improve the decision-making process and reduce the risks for investors involved in the project. The State and municipal authorities will cooperate with recognised non-governmental organisations and associations active in the sphere of renewable energy in order to benefit from their experience and expertise with a view to improving the operations of administrative bodies at national and local level and enhancing interaction with the public sector.					
9. Financing renewable energy and energy efficiency projects	Financial	Installed capacity, energy generated and consumed, emissions savings	Investors, end users	Planned	2011-2012
The Green Investment Scheme ('GIS') is expected to generate funds to finance various measures to combat climate change. The scheme is expected to start operating in 2011. Subject to international emissions trading under Article 17 of the Kyoto Protocol are the surpluses of Assigned Amount Units (AAUs) available to countries. The funds generated from the sale of AAUs are required to "become green", i.e. to be spent on financing renewable energy					

Name and reference of the measure	Type of measure[4]	Expected result[5]	Targeted group and/or activity[6]	Existing or planned	Start and end dates of the measure
and energy efficiency projects as well as other activities leading to emission reductions. The Republic of Bulgaria has set up the necessary legal framework for participation in the international emissions trading scheme through the national Green Investment Scheme, designated the competent authorities, established the administrative structure and is currently preparing the procedures for submitting applications and the rules governing the financing of projects.					
10. Developing rules and using financial resources from the Emissions Trading Scheme ('ETS')	Financial	Installed capacity, energy generated and consumed, emissions savings	Investors, end users	Planned	2013-2020
The EU Emissions Trading Scheme ('EU ETS') will provide financing for various measures to combat climate change. It is expected to start operating in 2013. By 2013, the Republic of Bulgaria will set up the administrative structure, designate the competent authorities, and draw up the rules on allocation and the procedures for using the ETS resources.					

The additional measures outlined in the following sections aim to allocate the responsibilities in the development of energy from renewable sources between investors and owners of the electricity transmission and distribution networks in order to achieve coherent development and ease the financial burden on consumers.

Table 5 (Annex 2)

Measures to integrate electricity produced from renewable sources

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
11. Streamlining the procedures for issuing authorisations and signing connection agreements	Regulatory	Installed capacity, energy generated	Electricity companies, investors	Proposed	2011 onwards
The Republic of Bulgaria will review and improve the legal framework with a view to harmonising the authorisation, certification and licensing procedures at national and municipal level. A mechanism will be set up to ensure that potential investors that have expressed an interest and have demonstrated their financial capability will be able to implement the projects. The mechanism will include *inter alia* advance payment of the connection costs, which will depend on the capacity of the future installation, obligations for the owners of the transmission and distribution networks to optimise, expand and construct					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
new branches of the electricity transmission and distribution networks and allocation of the responsibilities between the administrative bodies involved in the investment process.					
12. Support for the construction of new transmission and distribution grid infrastructure in relation to the connection of new producers of energy from renewable sources – status of national infrastructure facilities	Administrative and regulatory	New installed capacity (MW/year)	Investors, end users	Proposed	2011 onwards
The authorisation and administrative procedures for the construction of national infrastructure facilities fall within the scope of the Spatial Planning Act ('ZUT') and the Energy Act ('ZE'). The Energy Act lays down a special procedure for obtaining building permits where the construction or the expansion of a site and/or linear energy facilities and electricity generation equipment is to be carried out on State-owned or municipal land. In such cases, the competent authorities are obliged to create in favour of the operator, against payment, a right to build on the land without initiating a tendering or competitive procedure. Where construction is to take place on private land, the energy company must obtain in advance property rights or permission to build on the land. In case					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
of refusal or failure to act for reasons beyond the control of the energy company, the land may be expropriated in favour of the State under the terms and procedure of the State Property Act ('ZDS'). Under the ZDS, privately owned land may be alienated only when such land is intended for the construction of national infrastructure facilities. In such cases, alienation will take place by decision of the Council of Ministers. In order to promote investments in renewable sources, the new facilities and network infrastructure of the transmission and distribution companies in areas having a high potential for development of energy from renewable sources will be granted the status of national infrastructure facilities. The implementation of this procedure will accelerate the investment process and will reduce its costs.					
13. Introducing competition between renewable energy technologies	Regulatory	Installed capacity, energy generated	Electricity companies, investors	Planned	2012 onwards
Competition between different renewable energy technologies has practically been introduced through the system of feed-in tariffs. It is a transparent and market-oriented mechanism. The purchase prices of electricity are regularly updated and revised in accordance with the efficiency of renewable energy technologies, investor appetite, prices of generating facilities, etc. The flexibility of the price-setting mechanism allows for an adequate response to developments in the renewable energy sector.					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
In the Republic of Bulgaria, by reason of the economic conditions, consumer protection is a priority and the implementation of more efficient and cheaper technologies will ensure the achievement of this priority.					
14. Support for the development of intelligent networks and storage facilities	Regulatory	Installed capacity (more efficient integration)	Network owners, investors, end users	Planned	2012 onwards
The implementation of the Smart Grid concept is indispensable for the efficient management of connected producers and consumers who are unpredictable in terms of the electric power that is produced and released into the network or that is received and consumed from the network. Production and consumption metering, power flow management and voltage control, energy storage and congestion management are key components of intelligent networks, which will ensure efficient distribution of energy and a significant reduction of network losses. The Republic of Bulgaria intends to set as a priority the construction of intelligent networks and storage facilities. The owners of the electricity transmission and distribution networks will be encouraged to construct and develop intelligent networks, storage and control facilities by recognising their costs related to the development and implementation of such projects.					
15. Exploiting the demand-side	Regulatory	Installed capacity (more	Scientific community, industry	Planned	2012 onwards

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
management and congestion response options		efficient integration)			

The owners of the electricity transmission and distribution networks focus and will continue to focus their efforts on reducing the amount of non-generated energy (lost output) from renewable sources as a result of transmission capacity limitations.

Increasing the output from renewable sources entails difficulties for the energy system management. In order to safeguard the security and quality management of the electricity system, additional measures will be necessary, such as:

- construction of control capacities;
- construction of storage capacities;
- optimising, expanding and constructing new network branches;
- implementing remote control systems for renewable energy capacities, etc.

Demand-side management options such as reducing or increasing the load or energy storage may be fully exploited through the development of an appropriate tariff system, the conclusion of contracts between system operators and consumers and the implementation of appropriate automatic systems.

The State Energy and Water Regulatory Commission will draw up rules for demand-side management and congestion response and set up an appropriate

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
mechanism for allocation of the management costs. The optimal solution for the utilisation of the potential of consumption is the creation of a “day-ahead” and “intra-day” market, in which the prices are set in real time. The Republic of Bulgaria will encourage the creation of these electricity markets in agreement with its neighbouring countries.					

Table 5 (Annex 3)

Support for the construction of installations using renewable sources

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
16. Code of conduct/operating procedures for installers	Soft	Behavioural change	Installers, suppliers of equipment, end users	Planned	2011-2013

In order to help create confidence in installers, individuals and companies will be encouraged to become members of professional bodies or associations as well as to draw up a voluntary code of conduct or operating procedures in relation to the provision of services associated with the installation of energy generating equipment from renewable sources.

The code/procedures may include requirements for persons providing installation services, requirements for compliance with the standards for the equipment offered by suppliers, technical safety requirements, dispute resolution mechanisms, unfair competition practices, the setting up of managing and supervisory bodies, etc.

The professional bodies or associations:

- will keep an updated list of qualified installers;
- will be able to remove from the list installers who have been found guilty of serious and/or repeated failure to comply with the

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
code/procedures; - may solve disputes between installers and end users, if necessary, etc. In case of complaints from end users, the managing body responsible for supervising compliance with the code/procedures will cooperate with users and installers in order to determine the extent of non-compliance and take follow-up measures with a view to preventing infringements and protecting consumers. In case it is found that a person providing installation services in relation to energy generating equipment from renewable sources has caused damages to a customer, corrective action will be taken. In the event of serious and/or repeated non-compliance, the managing body responsible for compliance with the code/procedures may remove the organisation from the list of members. The whole process will be implemented and controlled through the establishment of a professional body or association, which is to regulate the relations between the participating installers' organisations, establish the conditions for certification and training of experts, keep an updated list of persons having the required expertise, etc.					
17. Requirements for obtaining installer qualifications	Administrative	Behavioural change, energy generated	Installers' organisations, end users, investors, authorisation bodies, financial	Planned	2012 onwards

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
			organisations		

By 31 December 2012 at the latest, the Republic of Bulgaria will implement a qualification scheme for installers, in accordance with Article 14(3) and Annex IV to Directive 2009/28/EC. The scheme components will focus on the installation of:

- biomass boilers and stoves;
- heat pumps;
- shallow geothermal systems;
- solar photovoltaic systems;
- solar thermal systems;
- wind power systems.

The Ministry of Economy, Energy and Tourism ('MEET') in cooperation with the Ministry of Education, Youth and Science will establish a qualifications framework, which will be in compliance with the requirements of the EU Renewables Directive and the national educational and qualifications system.

Installer qualifications for renewable energy equipment will be obtained in accordance with the Professional Education and Training Act.

The national training requirements for obtaining installer qualifications and the period of validity of the relevant certificates will be laid down in an ordinance

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
of the Minister of Education, Youth and Science and the Minister of Economy, Energy and Tourism. The institutions entitled to carry out training leading to vocational qualifications in accordance with the Professional Education and Training Act will be required to submit each year to the Agency for Sustainable Energy Development ('ASED') a list of the persons that have obtained the qualifications to carry out the activities referred to in paragraph 1. The professional qualifications of persons who are nationals of EU Member States will be recognised in accordance with the Recognition of Professional Qualifications Act (promulgated: SG No 13 of 2008). The MEET will liaise with the Ministry of Labour and Social Policy, NGOs and industrial organisations with a view to involving a wide circle of stakeholders in the process of preliminary approval of any qualification scheme. The ASED will provide methodological guidance and information to training institutions concerning the recent developments in the EU and national legislation and the need to implement additional requirements in respect of qualification schemes and trainees. Bulgaria has already joined the common certification and accreditation system for installers of small-scale renewable energy systems in the European Union, which is expected to be implemented after 2011. Its development is supported by the QualiCert project of the Intelligent Energy – Europe programme of the European Union.					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
18. List of qualified installers	Regulatory	Behavioural change, energy generated	Installers' organisations, end users, investors, authorisation bodies, financial organisations	Planned	2012-2013

The Agency for Sustainable Energy Development will set up, keep and update a national information system of the potential for production and consumption of energy from renewable sources in Bulgaria. This system will provide information on the national targets for generation and consumption of energy from renewable sources and report on the implementation of the National Renewable Energy Action Plan. It will also:

- provide information on the qualification schemes for installers of biomass boilers and stoves, heat pumps, shallow geothermal systems, solar photovoltaic, solar thermal systems and wind energy systems;
- contain a list of qualified or certified installers of biomass boilers and stoves, heat pumps, shallow geothermal systems, solar photovoltaic, solar thermal systems and wind energy systems;
- contain a list of suppliers of equipment producing electricity, heating and cooling from renewable sources;
- contain information on the costs and energy efficiency of equipment and systems for the production and consumption of electricity, heating and cooling from renewable sources;

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
◆ contain information on net profits provided by suppliers of equipment and systems or by the competent national authorities.					
19. Applying or using the method of cost-benefit analysis	General, financial, regulatory		Investors, end users, planning authorities	Proposed	2012-2013
The Ministry of Economy, Energy and Tourism, the Ministry for Health, the State Energy and Water Regulatory Commission, the Agency for Sustainable Energy Development and other relevant institutions and organisations will develop and implement methods for internalisation of external costs. External costs such as, for example, increased morbidity as a consequence of environmental pollution, increased insurance premiums as a result of extreme climatic conditions, costs of decommissioning and storage of nuclear wastes or reduced fertility are difficult to determine but constitute a heavy burden on society. The impact of energy technologies on climate change is determined by the amount of carbon dioxide emitted by energy installations. As a result of the numerous studies, the remaining components of external costs have also been adequately assessed. The economic benefits of renewable energy cannot be assessed without including them in economic comparisons. A comparison should also be made between the different types of renewable energy. A simplified methodology will be developed, which will include external costs in economic assessments.					

Table 5 (Annex 4)

Dissemination of information

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
20. Public information campaign promoting the use of renewable sources	General	Behavioural change	Installers' organisations, end users, investors, authorisation bodies, financial organisations	Planned	2012 onwards
The Agency for Sustainable Energy Development will carry on a continuous information campaign on the implementation of the NREAP. All possible channels for informing consumers directly concerned with the protection of the environment will be used. The information campaign will create a transparent environment for the renewable energy market and explain the benefits of using energy from renewable sources for lighting, heating and cooling purposes, as well as the benefits of reducing greenhouse gas emissions from transport. The campaign will also provide information on important consumer issues such as: ◆ the purchase price of green energy, which will be examined not only from the point of view of the higher price of electricity for final customers as a result of the higher purchase price of renewable energy but also from the point of view of the • • $_2$ emission savings contributing to the achievement of a positive environmental effect and reduced morbidity as a consequence of air and water pollution from					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure

the use of fossil fuels for the production of electricity;

- the inexhaustibility of renewable sources;
- the high level of competitiveness reached in the manufacture of goods and provision of services by using energy from renewable sources in technological processes;
- the contribution of the Republic of Bulgaria to the achievement of the common European energy policy target — a low-carbon economy — and the expected revenues from the sales of renewable energy.

The general and specialised information will be made available to the State and municipal authorities, producers, energy companies, contractors, various organisations, companies and end users.

Information on capital and operating expenses, advantages, disadvantages, developments, alternatives, maintenance requirements, etc. will also be made available. The various aspects of renewable sources will also be addressed, such as:

- their impact on energy security;
- their use as a non-expensive local resource and the degree of energy independence of individual consumers;
- the quality of energy generated;
- the possible use of renewable sources in the construction of new buildings;

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
◆ the possible use of renewable sources in major renovations of existing buildings; ◆ the changing prices of fossil fuels; ◆ their impact on the environment. A large part of the awareness-raising and information activities will be carried out with the support of the private sector and NGOs.					
21. List of energy generation facilities from renewable sources	Information	Behavioural change	Investors, end users, planning authorities	Planned	2011 onwards
The Republic of Bulgaria will draw up and keep a list of energy generation facilities from renewable sources, which will include facilities complying with the technical standards at EU and national level. This will increase awareness and consumer confidence in renewable energy technologies and prevent possible market failures due to the actual or suspected poor quality of equipment. This is particularly important for individual renewable energy systems. The list will be drawn up and kept up to date by the State Agency for Metrology and Technical Surveillance ('SAMTS') and the Agency for Sustainable Energy Development ('ASED') with the participation of business and non-governmental organisations. The list will be publicly available to interest parties on the Internet.					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
The SAMTS and ASED will exercise monitoring and provide information without delay on the implementation of new European and national standards for equipment and will offer new technical specifications.					
22. Translation of the national legislation	Information	Behavioural change	Investors	Planned	2011 onwards
In order to raise awareness of the rules governing the domestic and external energy market, the production of energy from renewable sources and the operation and supply of equipment and facilities, as well as to foster cross-border cooperation and investment, the Republic of Bulgaria will take steps to update and make available the national legislation, including the strategies, policies, laws and regulations, in one or more of the working languages of the European Union – English, French or German.					
23. List containing detailed and up-to-date information on investor appetite and the state of administrative and authorisation procedures	Information	New installed capacity (MW/year)	Investors, end users	Proposed	2011-2013
In order to facilitate the investment process and accelerate procedures for the construction and connection of renewable energy installations, national					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
rules will be revised in order to bring them into line with the provisions of Directive 2009/28/EC and Directive 2009/72/EC. A list of the authorisations granted and the connection agreements concluded in respect of renewable energy installations will be established, broken down by regions and types of networks. The list will provide information on the time limits of decision-making procedures, the concluded preliminary and final agreements for connection to the network, the reasons for refused connections, the support schemes used, the calls for tender issued for the connection work, etc. In this way, civilian control over the public administration will be strengthened and investors will receive comprehensive information on the investor interest expressed. The list will be drawn up and kept by the State Energy and Water Regulatory Commission, which, pursuant to its powers, is entitled to request commercial companies to make available information. Stakeholders will be able to adequately assess market developments, the adequacy of administrative acts adopted, the duration of procedures, etc. This will also improve administrative services and investors will have sufficient information in order to avoid making wrong investment decisions.					

Table 5 (Annex 5)

Promoting the use of renewable energy in buildings

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
24. Transposing into the Bulgarian legislation the requirements of the amended Directive 2002/91/EC, Directive 2009/28/EC, Directive 2009/29/EC and Directive 2009/30/EC.	Regulatory	Installed capacity, energy generated	Construction project organisations, planning authorities	Planned	2012 onwards
The amended Directive 2002/91/EC has introduced more stringent energy performance requirements for existing buildings and subjected renovation work to a technical and economic study of whether the investment costs can be recovered for the remaining lifecycle of the building. The Directive requires that, by 2020, all new buildings should be nearly-zero energy buildings. This requirement imposes serious obligations on the public administration and construction sector. The Republic of Bulgaria will transpose into its national legislation the provisions of the Directive by making modifications to the building design methods, the technologies for production of construction materials and the building methods, by applying energy efficiency measures and promoting the wide-					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
spread use of renewable energy in buildings, etc. It will strive to implement these measures before 2018. The requirements of Directive 2009/28/EC, Directive 2009/29/EC and Directive 2009/30/EC are currently being transposed into the national legislation by the Renewable Energy Act ('ZEVI'), the Clean Ambient Air Act ('ZChAV') and the Environmental Protection Act ('ZOOS').					
25. Substituting fossil fuels and electricity for heating in public buildings by biofuels and renewable energy	Regulatory and financial	Energy generated (ktoe)	Energy suppliers, municipalities	Planned	2011 onwards
The Republic of Bulgaria has a considerable potential for improving its energy efficiency by switching from using electricity for heating purposes – the least efficient and most widespread practice – to using central or individual heating systems. Fossil fuels – fuel oil or naphtha – may also be replaced by renewable energy, which will have a positive impact in economic and environmental terms. The use of biomass for heating purposes by means of modern high-efficiency boilers and stoves, hot water heating through the use of solar thermal systems, heat pumps and shallow geothermal systems are the modern options that will be encouraged. The national and local authorities will develop and ensure the implementation of long-term and short-term programmes, which will include: 1. an assessment of the existing and estimated potential of the resource for production of renewable energy in the territory of the municipality;					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
2. a feasibility study of the construction of renewable energy facilities or installations producing biofuels and bioliquids for the transport sector on uncultivated land that is public or private municipal property and identification of appropriate measures for the utilisation of such land; 3. a feasibility study of the cultivation of energy crops and the use of the residues and waste thereof for the production of biofuels and bioliquids on uncultivated land and identification of appropriate measures for the utilisation of such land; 4. a feasibility study of the cultivation of plant and forest species serving as raw feedstock and the use of the residues and waste thereof for the production of heating and/or electricity on uncultivated land and identification of appropriate measures for the utilisation of such land; 5. measures promoting the use of energy from renewable sources and energy efficiency measures in the implementation of projects for the reconstruction, major renovation or refurbishment of buildings that are municipal property or buildings that are co-owned by the State and the municipality; 6. measures promoting the use of energy from renewable sources in the construction and reconstruction of street lighting systems in the territory of the municipality; 7. measures promoting the use of energy from renewable sources in the construction and reconstruction of park, decorative and façade lighting systems in the territory of the municipality; 8. measures for the replacement of public transport vehicles using conventional fuels by vehicles using biofuels and/or renewable fuels; 9. measures supporting the construction of installations producing heating from renewable sources or of a heat transmission network in the territory of					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
the municipality, in respect of which a licence for heat transmission has been obtained; 10. a feasibility study of the use of heating produced from renewable sources and the obtaining of a licence for the construction of a plant producing heating from renewable sources and a heat transmission network in the territory of the municipality; 11. a feasibility study of the construction of energy generation facilities from renewable sources on the roofs of buildings that are municipal property or buildings that are co-owned by the State and the municipality; 12. support schemes for projects for the production and consumption of electricity, heating and cooling from renewable sources, the production and consumption of gas from renewable sources and the production and consumption of biofuels and renewable fuels for the transport sector; 13. support schemes for projects for the implementation of individual systems for consumption of electricity, heating and cooling from renewable sources; 14. developing and/or updating the master and detailed master plans in connection with the execution of civil engineering works for the implementation of projects referred to in it. 6, 7, 8, 9 and 10; 15. information and awareness-raising campaigns for the general public on the support measures, practical benefits and specificities of the development and use of energy from renewable sources; 16. other measures relating to the production and consumption of electricity, heating and cooling from renewable sources, the production and consumption of gas from renewable sources and the production and consumption of biofuels and renewable fuels for the transport sector.					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
After consultation with the municipalities and other relevant public institutions, which are owners or users of buildings, the Agency for Sustainable Energy Development will draw up a programme for the gradual replacement of electricity and fossil fuels for heating and hot water purposes and, by 2020, all public buildings will be heated by means of biomass to the fullest extent possible.					
26. Obligatory use of renewable energy in new buildings	Legislative	Energy generated (ktoe)	End users	Planned	2012 onwards
Biomass is a significant component of the heating energy mix in Bulgaria. As a result of price increases, a large proportion of the population relies on biomass (wood, in particular) for heating and, to a lesser extent, hot water purposes. The most widely used appliances are stoves and fireplaces with very high losses. Heating appliances and water heaters are most commonly selected on the basis of their purchase price and this often results in neglecting efficiency considerations. In order to improve energy consumption, the Bulgarian legislation relating to the use of renewable energy for heating and cooling purposes will be revised and an obligation to use energy efficient technologies in new buildings will be laid down. The owners of new buildings will be required to choose one of the following heat sources:					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
- individual biomass boilers and stoves; - solar photovoltaic systems; - solar thermal systems; - heat pumps; - shallow geothermal systems; - local heating and/or combined cycle systems. The conditions relating to these obligations will be elaborated in detail in the national legislation concerning the requirements for the design of new buildings and the refurbishment and renovation of existing buildings. Buildings, in which it will not be possible to implement individual renewable energy systems, will be choose among other climate protection measures such as insulation of the building above the standards, connection to heat distribution networks or facilities for combined heat and power generation or connection to natural gas networks.					
27. Financing projects through the Energy Efficiency and Renewable	Financial	Energy generated (ktoe)	End users	Planned	2011 onwards

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
Energy Fund					

The owners of buildings are required under the Energy Efficiency Act ('ZEE'), when reconstructing, renovating or refurbishing existing buildings, to implement measures for the reduction of their energy consumption. At the same time, the Act requires that investment projects for existing and new buildings should include a feasibility study of the use of energy from renewable sources. The process of renovation and certification of buildings has a high potential for development but it is still progressing slowly because of the difficulties encountered in obtaining financing.

The Republic of Bulgaria will continue to use financial resources from the Energy Efficiency Fund and will include among its functions the financing of renewable energy projects. In its capacity as an Energy Efficiency and Renewable Energy Fund ('EEREF'), it will directly finance or provide guarantees to support owners of buildings. The mission of the Fund will be to provide financing for the simultaneous implementation of energy efficiency and renewable energy measures with a proven potential. The expected effects of the measures implemented will bring economic, financial, environmental and thermal comfort to owners of buildings and end users. To this end, financial resources from various sponsors will be used such as the KIDS Fund, the State budget, the Emissions Trading Scheme, the National Green Investment Scheme, the European Bank for Reconstruction and Development and other financial institutions.

Table 5 (Annex 6)

Promoting distributed energy generation

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
28. Promoting the use of individual renewable energy systems	Financial	New installed capacity (MW/year)	Investors, end users, planning authorities	Proposed	2011 onwards

Promoting the use of individual renewable energy systems is a reliable way of achieving the low-carbon targets at low public costs. Individual systems will also be encouraged through additional incentives such as:

1. No assessment will be required of the renewable energy potential of the territory in which the following will be constructed and put into service:
   - energy facilities generating electricity from renewable sources of up to 30 kW installed capacity on roofs and façade structures of buildings and on land within urban areas;
   - energy facilities of small and medium-sized enterprises generating electricity from renewable sources on roofs and façade structures and on land within industrial areas of up to 1 MW installed capacity;
   - energy facilities or installations producing heating and/or cooling from renewable sources of up to 100 kW installed capacity within urban and industrial areas.

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
2. A support scheme will be implemented for the construction of roof and façade photovoltaic systems on private, public and industrial buildings, including a simplified administrative procedure for legalisation and connection to the distribution network. 3. The fee to be paid by owners of individual systems for connection to the distribution network will only include the costs actually incurred. The benefits from the construction of individual systems include the following: reduced or deferred investment costs for network development, reduced energy losses, improved voltage regulation in the network and reduced transmission and distribution losses.					

Table 5 (Annex 7)

Heat generation

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
29. Support scheme for the production of heating and cooling from RES in the industry	Financial, regulatory	Behavioural change, installed capacity (MW; t/year), energy generated (ktoe)	Investors, end users, planning authorities	Proposed	2011 onwards
The production of energy for low temperature processes (heating, cooling, drying, etc.) is not supported by the existing regulatory framework. The Ministry of Economy, Energy and Tourism and the State Energy and Water Regulatory Commission will develop a support scheme for the use of renewable energy in the industry, while the basic requirement for providing support will be obligatory capture and recovery of the heat emitted in the process of cooling coupled with energy efficiency measures.					
30. Support scheme for the production of heating from RES in residential and public buildings	Financial, regulatory	Behavioural change, installed capacity (MW; t/year), energy generated (ktoe)	Investors, end users, planning authorities	Proposed	2011 onwards

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure

The Republic of Bulgaria will stimulate the market for heating and cooling energy through appropriate legislative measures. Mandatory minimum levels will be established, specifying that at least 15 % of the total amount of heating and cooling required by the building should be produced from renewable sources through the implementation of:

- central heating systems using biomass or geothermal energy;
- individual biomass installations with a conversion efficiency of at least 85 % for residential and commercial buildings and at least 70 % for industrial buildings;
- solar thermal systems;
- heat pumps and shallow geothermal systems.

A study will be carried out of the possible options to integrate energy generation facilities from renewable sources in conventional heating/cooling systems — the so-called “hybrid” systems — and of the appropriate support schemes. Reduced consumption of energy produced from conventional fuels in buildings will also be encouraged through energy efficiency measures and the efficient use of facilities generating heating and cooling from renewable sources.

The support scheme will promote the use of high-efficiency energy generation facilities by linking standards and minimum efficiency levels, for example, to financial incentives.

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
The buildings owned and managed by the State and municipalities will become the main driving force for the use of heating and/or cooling from renewable sources. The Republic of Bulgaria will carefully analyse and, if possible, offer additional tax or financial incentives to owners of buildings that construct and put into operation facilities generating heating and cooling from renewable sources.					
31. Financial incentives for the use of local heating systems	Financial	Energy generated (ktoe)	Investors	Planned	2013 onwards
Local heating systems for multi-unit dwellings or apartment blocks are a good alternative to individual heating systems using renewable sources, for example, biomass. They have the advantage of utilising modern facilities for the incineration of wood chips or pellets and automatic feeding and control systems without disturbing the indoor thermal comfort. The Republic of Bulgaria will develop and implement in its legislative framework support schemes for local heating systems in residential and public buildings, which may include, but are not limited to, grants for the purchase of facilities generating energy from renewable sources, low-interest loans, etc.					
32. Tax incentives for investments in energy generation from	Financial	Energy generated (ktoe)	End users	Existing	2011 onwards

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
renewable sources for household purposes					
The Republic of Bulgaria has laid down in its legislation tax incentives for owners of buildings who have constructed and put into operation facilities generating energy from renewable sources. The legislative framework will be analysed with a view to identifying other possible tax incentives for the purchase of household appliances using renewable energy, for example, in which case the price of the equipment (or part thereof) might be recognised as expenses and the income tax reduced accordingly.					
33. Setting up assessment procedures requiring the compulsory marking of biomass incineration equipment	Regulatory, financial	Energy generated (ktoe)	Energy suppliers	Planned	2011 onwards
In line with Directive 2009/28/EC, the Republic of Bulgaria will implement the requirement that any biomass incineration equipment should comply with a minimum conversion efficiency level. Producers of biomass incineration equipment will be required to evaluate and provide data on the operating efficiency of their equipment obtained under certain test conditions. The branch chambers or associations will coordinate compliance with the standards and technical safety requirements concerning the equipment offered					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
by suppliers and the requirements concerning persons providing installation services. Equipment that does not comply with the relevant requirements or the existing European and national standards and technical specifications will not be eligible for support. The sale and/or supply thereof will be subject to penalties.					
34. Gradual increase of the share of biofuels in the “energy benefits” programme	Regulatory, financial	Energy generated (ktoe)	Energy suppliers	Planned	2011 onwards
Traditionally, social benefits for energy purposes are paid to low-income families in the country during the heating season in order to ensure basic heat supply. The method of granting the aid favours at present the use of coal and other fossil fuels. The Ministry of Economy, Energy and Tourism, in collaboration with the Ministry of Labour and Social Policy, will develop a programme for switching to individual systems for energy generation from renewable sources — for example, biomass — which will include both heating equipment and fuels. In this way, more efficient technologies will be implemented for low-income families, which will reduce the amount of fuel used, the amount of the aid and the primary energy per unit of useful heat delivered.					

Table 5 (Annex 8)

Production of biofuels

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
35. Developing a programme for accelerated switchover to biofuels for the public and municipal transport sector	Regulatory, financial	Energy generated (ktoe)	Energy suppliers	Planned	2011 onwards
The Republic of Bulgaria will promote the production of biofuels and will require the State and municipal administrations to set an example of good practices by applying energy efficiency and renewable energy measures in transport. When publishing calls for expression of interest for the supply of vehicles, the respective municipality will request offers for vehicles with engines adjusted to use biofuel blends and pure biofuels. This will allow the smooth switchover of the public transport sector from conventional fuels to biofuel blends and pure biofuels. The uptake of blended and pure biofuels in the public transport sector will be consistent with the financial capabilities and plans of the municipalities, the financial stability of the carriers and the budget of State institutions. This requirement will be laid down in the rules of operation of the relevant authorities.					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
In the event of a substantial difference in the prices of conventional fuels and biofuels, after analysing the economic and environmental benefits of the use of biofuels, a support scheme for carriers may be implemented.					
36. Quality control system for biofuels	Regulatory, financial	Energy generated (ktoe)	Energy suppliers	Planned	2010 onwards
The Republic of Bulgaria has laid down in its legislation the rate of increase of the minimum percentage of biodiesel and bioethanol in diesel and petrol fuels. Due to the nature of the use of biofuel blends, it is necessary to ensure strict monitoring of the compliance with the percentage content of blends, compliance with the standards for petrol and diesel fuels and with the quality requirements for biofuels. In order to ensure the implementation of the biofuels programme, the SAMTS has the power to impose penalties on suppliers who do not submit in respect of each batch of biofuels or biofuel blends a declaration of conformity with the quality requirements and whose fuels do not comply with the national standards. Controls are carried out in tax and excise warehouses, at the premises of distributors and retailers.					
37. Obliging distributors and retailers of petroleum-derived	Regulatory	Energy generated (ktoe)	Energy suppliers	Planned	2015 onwards

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
liquid fuels to keep pumps that sell pure biofuels					
Distributors and retailers of petroleum-derived liquid fuels will be required to keep pumps that sell pure biofuels and inform consumers by labelling the respective pumps.					
38. Programme for the promotion and introduction of electric cars	General	Installed capacity (more efficient integration)	Scientific community, industry	Planned	2012 onwards
Electric cars may support the development of the renewable energy sector in Bulgaria by enabling energy to be stored in their batteries. In addition, the increase in the number of electric cars imposes additional tasks on network operators and, along with the individual electricity generation systems from renewable sources, requires the construction and development of smart grids. As yet, the Republic of Bulgaria does not produce electric cars and does not have a programme involving the use of electric cars or considering the possibilities for their presence on the market. Various activities are carried out in relation to the promotion of electric cars, for example, the Intelligent Energy – Europe programme. It is possible to convert standard cars and other vehicles but there is no well developed charging network which is to ensure the long run of electric cars.					

Name and reference of the measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
The Republic of Bulgaria will develop a programme on the possible introduction of electric cars in the State, municipal and private sector, considering also the construction of charging stations for electric cars when new or existing car parks are constructed or reconstructed in urban and industrial areas and the construction of charging infrastructure for electric vehicles outside settlements, and will seek to participate in European pilot and demonstration programmes.					

4.2. Specific measures to fulfil the requirements under Articles 13, 14, 16 and Articles 17 to 21 of Directive 2009/28/EC

4.2.1. Administrative procedures and spatial planning (Article 13(1) of Directive 2009/28/EC)

(a) List of existing national and, if applicable, regional legislation concerning authorisation, certification and licensing procedures and spatial planning applied to plants and associated transmission and distribution network infrastructure:

1. Energy Act

- Ordinance No 6 of 9 June 2004 on the connection of electricity producers and consumers to the electricity transmission and distribution networks;
- Ordinance No 3 of 2004 on the set-up of electrical installations and electricity lines;
- Ordinance No 8 of 9 June 2004 on the conditions and procedure for pursuing the activities of electricity system and distribution network operators and the activities of operational duty personnel of electrical facilities;
- Ordinance No 9 of 9 June 2004 on the technical operation of power plants and networks;
- Ordinance No 16-334 of 2007 on heat supply;
- Ordinance on licensing the activities in the energy sector;
- Distribution Grid Code adopted by SEWRC decision;
- Grid Code;
- Rules on the conditions and procedure for access to the electricity transmission and distribution networks;
- Ordinance No 14 of 15 June 2005 laying down the technical rules and norms for the design, construction and use of sites and facilities for electricity generation, transformation, transmission and distribution;
- Ordinance No 15 of 28 July 2005 laying down the technical rules and norms for the design, construction and use of sites and facilities for heat generation, transformation, transmission and distribution.

2. Renewable and Alternative Energy Sources and Biofuels Act

- Ordinance on issuing guarantees of origin of electricity produced from renewable energy sources (promulgated: SG No 10 of 6 February 2009).

3. Spatial Planning Act

- Ordinance No 1 of 30 July 2003 on the nomenclature of the types of construction works;
- Ordinance No 4 of 14 August 2003 on the design, construction and operation of electrical installations in buildings;
- Ordinance No 4 of 21 May 2001 on the scope and content of investment projects;
- Ordinance No 8 of 14 June 2001 on the scope and content of development schemes and plans;
- Ordinance No 2 of 31 July 2003 on bringing into service construction works in the Republic of Bulgaria and on the minimum warranty periods for finished construction works, facilities and construction sites;
- Ordinance No 7 of 2004 on energy efficiency, heat storage and energy saving in buildings;
- Ordinance No 3 of 31 July 2003 on drawing up acts and reports during construction;
- Ordinance No 5 of 28 December 2006 on technical data sheets of constructions;
- Ordinance No 7 of 22 December 2003 laying down rules and norms for the spatial development of the separate types of territories and planning areas.

4. Environmental Protection Act

- Ordinance on the conditions and procedure for issuing integrated permits (SG No 80 of 9 October 2009);
- Ordinance on the conditions and procedure for carrying out environmental impact assessments (SG No 80 of 9 October 2009);
- Ordinance on the conditions and procedure for carrying out environmental assessments of plans and programmes (SG No 3 of 2006).

5. Clean Ambient Air Act

- Ordinance on the quality requirements for liquid fuels, the conditions, procedure and method of their control

6. Water Act

7. Fisheries and Aquaculture Act

8. Soils Act

9. Agricultural Land Protection Act

10. Forests Act

11. Biological Diversity Act

12. Agricultural Land Ownership and Use Act

(b) Responsible Ministry(/ies)/authority(/ies) and their competences in the field:

1. Ministry of Economy, Energy and Tourism

The Ministry of Economy, Energy and Tourism ('MEET') is responsible for implementing the policy on the promotion of the production and use of energy from renewable and alternative sources and the production and use of biofuels and other renewable fuels for transport.

The Minister of Economy, Energy and Tourism is responsible for:

- drafting the National Renewable Energy Action Plan, updating it and submitting it to the Council of Ministers for approval.
- preparing NREAP reports and submitting them to the European Commission;
- submitting draft agreements on joint schemes and projects and statistical transfers to the Council of Ministers for approval;
- organising and managing the planning and execution of joint projects;
- submitting national schemes to support the use of renewable energy in conjunction with the Minister of Finance;
- supervising the issue, transfer and exchange of energy origin guarantees;
- interacting with the executive authorities, industry organisations and interested non-commercial entities with regard to state policy for encouraging the generation and consumption of renewable electricity, heat and cooling energy, the production and

use of gas from renewable sources, and the production and use of biofuels and renewable energy in transport;

- supplying the European institutions with information required under community law;
- performing Bulgaria's commitment to international cooperation on renewable sources and biofuels;
- drafting and submitting secondary legislation to the Council of Ministers for approval.

2. State Energy and Water Regulatory Commission

The State Energy and Water Regulatory Commission carries out the functions of an independent energy and water regulator. The main responsibilities of the regulator laid down in the Energy Act are:

- issuing and supervising compliance with licences pertaining to the electricity, heating and natural gas sector;
- regulating the prices of electricity, heat and natural gas (including those produced from renewable sources and cogeneration);
- laying down rules for the connection to the electricity and natural gas networks;
- issuing guarantees of origin for electricity produced from renewable sources;
- recognising guarantees of origin issued by other competent authorities of Member States;
- setting feed-in tariff rates each year for electricity produced from renewable sources, except for energy generated by HPPs of more than 10 MW installed capacity.

3. Other ministries

Other ministries competent in the field are the, Ministry for Agriculture and Food ('MAF'), Ministry of Transport, Information Technology and Communications ('MTITC') and the Ministry for Regional Development and Public Works ('MRDPW') and the Ministry of the Environment and Waters ('MEW').

The Ministry for Agriculture and Food ('MAF') is responsible for land use and the rules for conversion of agricultural land and forest stock land. These activities are closely related to the production and use of biomass. Under Ordinance No 25 of 29 July 2008, the MAF is also

responsible for managing the implementation of the Rural Development Programme for 2007-2013. It provides financing for: the construction or rehabilitation of installations for electricity and/or heat generation from renewable sources in municipal and public service buildings; construction of distribution networks for biofuels or electricity/heat produced from biomass or other renewable sources; investments to improve the energy efficiency of municipal or public service buildings; construction or reconstruction of cultural facilities, theatres, libraries, sports and leisure facilities to youth, centres for social services (crèches, kindergartens), centres for adults and people with disabilities, etc.

The MTITC and MEET jointly coordinate the targets for the use of biofuels in the transport sector, develop national long-term and short-term programmes for the promotion of the use of biofuels for transport and supervise their implementation.

The Ministry for Regional Development and Public Works ('MRDPW') lays down rules for the provision of sites and routes and the construction of facilities, issues permits and supervises implementation. It is responsible for introducing improvements in the building sector, including the energy performance of buildings and the use of renewable sources. In addition, it has been designated as the Managing Authority of the OP "Regional Development", which finances the implementation of energy efficiency measures and the utilisation of the renewable energy potential.

The Ministry of the Environment and Waters has two important functions relating to the use of renewable sources, as follows:

- Its regional entities ('RIEW') take decisions determining whether projects would require environmental impact assessments and environmental assessments, the Minister of the Environment and Waters being solely responsible for approving the environmental impact assessment.
- It issues water usage permits. Under the provisions of the Water Act, the use of water and water facilities includes water abstraction and operation of water facilities. Water abstraction includes the extraction of water from water facilities and/or its diversion, as well as water power utilisation. No permit under this Act is required for the transformation of water power into electricity without diverting it from the water courses through the use of turbines of up to 20 kW installed capacity. Where the nature of the activity in respect of which a permit is required includes both water abstraction and operation of water facilities, an integrated permit is issued,

containing the conditions for water abstraction and operation of the water facility. The permit for water abstraction/operation of the water facility is issued by the Director of the relevant Basin Directorate or by the Minister of the Environment and Waters where it relates to the dams set out in Annex 1[7], the transfer of water between river basin districts, the inland maritime waters, the territorial sea and the Danube, except where they are used for water transport purposes.

(c) Revision foreseen with the view to take appropriate steps as described by Article 13(1) of Directive 2009/28/EC by:

The draft ZEVI provides for the formation of a new administrative structure, the Agency for Sustainable Energy Development (ASED). Its function will be to implement state renewable energy policy and to optimise administrative procedures for developing renewable energy. The ASED executive director's functions shall be:

- to participate in developing and updating the NREAP, in cooperation with the executive authorities, including the mayors of municipalities;
- to organise the implementation of measures under the NREAP, in cooperation with interested parties, and to assist in drawing up and implementing municipal programmes promoting the use of renewable energy and biofuels;
- to arrange assessments of existing and forecasts of the potential for various types of renewable energy generation sources throughout the country;
- to provide the Minister of the Economy, Energy and Tourism with any information that may be necessary to fulfil the NREAP;
- to organise the formation and maintenance of the National Information System on the capacity, production and use of renewable energy, to monitor the updating of the data and that local mayors maintain the system;
- to organise the formation and maintenance of the system for issuing guarantees of the origin of energy generated from renewable sources;
- to issue producers of electricity, heat and cooling energy from renewable sources with guarantees of energy origin, and to transfer or revoke such guarantees;

[7] It is not clear from the original to which Annex the author refers. [*Translator's note*]

- to organise planned statistical transfers of certain quantities of renewable energy from Bulgaria to other EU Member States or to Bulgaria from other EU Member States;
- to cooperate with the executive authorities, industry organisations and interested non-commercial organisations in performing activities and measures for promoting the production and use of electricity, heat and cooling energy from renewable sources, the production and use of gas from renewable sources and the production and use of biofuels and renewable energy in transport;
- to organise in popularising measures to promote the production and use of electricity, heat and cooling energy from renewable sources, the production and use of gas from renewable sources and the production and use of biofuels and renewable energy in transport;
- to assist the executive authorities and local government in performing their obligations under this Act;
- to organise information and awareness campaigns on support measures, the benefits and practicalities of developing and using electricity, heat and cooling energy from renewable sources, the production and use of gas from renewable sources, and the production and use of biofuels and renewable energy in transport.

When the NREAP draft has been adopted, the necessary regulatory framework will be drafted.

In parallel with this, rules concerning the authorisation, certification and licensing procedures for the development of energy from renewable sources are also being developed and adopted:

- the Spatial Planning Act is being revised with regard to the authorisation and administrative procedures for the construction of small-scale renewable energy systems;
- the Agricultural Land Protection Act is being revised with regard to the procedures for designation of the status of land and the right of use in connection with the construction of systems aimed at utilising the renewable energy potential. The purpose is to avoid some of problems that have been identified up to now in relation to the intended construction of wind and photovoltaic power plants on agricultural

land, for which a change in land use and its reassignment to non-agricultural uses is required and which makes it impossible to subsequently use such land for agricultural purposes.

The draft ZEVI introduces amendments to the Spatial Planning Act in connection with facilitating procedures for installing renewable electricity, heat and/or cooling installations whose total installed capacity is up to 30 kW on existing buildings in urbanised areas, including their roofs and facades, or the land on which they are built.

Concerning the use of geothermal energy, the draft ZEVI incorporates streamlined procedures where individual heating and/or cooling systems with a total installed capacity of up to 50kW are installed for own use, by introducing amendments to the Water Act

In relation to the construction of HPPs, the draft amendment to the Water Act provides for the simplification and streamlining of authorisation procedures:

- The number of cases where permits for the operation of water facilities are required is reduced. In case of construction or reconstruction of facilities that cross but do not affect the water facility, maintenance of the conductivity of river beds, construction of leisure, water-sports and monitoring facilities, the authorisation procedure is replaced by simple written notification to the competent authorities. A uniform procedure is put in place for the issue of groundwater abstraction permits and permits for the input of pollutants into groundwater (through new or existing facilities). A clear-cut three-stage procedure for the issue of surface water abstraction permits is established (for the processes of design, construction and operation). The documents required for the issue of permits are clearly defined, including those required at the separate stages of the procedure.
- The authorisation procedures are decentralised: except for permits for the operation of complex and important dams, all other permits for operation of water facilities are to be issued by the relevant basin directorates, while those for the use of the Danube River for clearance of silt deposits – by the Agency for the Exploration and Maintenance of the Danube River. A part of the mineral water deposits, which are the exclusive property of the State, are to be managed by the municipality in the territory of which they are located.
- The time limits for decision-making for the public administration are shortened, while the time limits for applicants to provide further information in relation to the

documents submitted for the issue of permits are extended.

When submitting applications for the issue of a surface water abstraction permit, the following documents need to be included with the application at the design stage:

- a feasibility study drawn up in accordance with the requirements of the Spatial Planning Act, containing hydrological details and water balance studies demonstrating the availability of the requested quantity of water in the water facility;
- a comparative assessment of the energy benefits and environmental damages where the request relates to the hydropower sector.

For the issue of permits for surface water abstraction through water systems and facilities, a document of title or entry into service of the facilities issued in accordance with the requirements of the Spatial Planning Act and a water balance demonstrating the availability of the requested quantity of water in the water facility also need to be included with the application at the exploitation stage.

Surface water abstraction for electricity generation will not be permitted:

- in the case of cascaded construction of derivational and run-of-river hydropower plants;
- where the average multiannual water quantity in the river is less than 100 l/sec;
- at less than 500 m before and after a surface water monitoring point;
- where the river is located within the designated areas of conservation of the natural habitats or the species' habitats;
- where there are restrictions and prohibitions in the river basin management plans.

Amendments to the Agricultural Land Protection Act are also foreseen for the purposes of regulating the rules governing the reassignment of agricultural land to non-agricultural uses, including the construction of installations using renewable sources, routes and sites for the electricity system.

To transpose the provisions of the Directive on the conservation of wild birds and the Council Directive on the conservation of natural habitats, measures prohibiting the construction of renewable energy installations in protected areas falling within the Europe-wide Natura 2000 ecological network have been introduced. These measures have been implemented by the orders

designating the areas of conservation and by the four river basin management plans drawn up in accordance with Chapter Six of the Environmental Protection Act.

In respect of the two strategic documents developed by the MEET in accordance with the Environmental Protection Act ('ZOOS') and the Biological Diversity Act ('ZBR') — the 2020 National Energy Strategy and the National Renewable Energy Action Plan — an environmental assessment and an assessment of the compatibility of the National Energy Strategy with the subject matter and purposes of protecting the areas of conservation under the Habitats Directive and the Birds Directive falling within the Natura 2000 network are to be prepared.

An environmental impact assessment of the action plan has been made. The findings and recommendations of the environmental assessment and the assessment of the compatibility of the National Renewable Energy Action Plan will be specified further in this document.

(d) Summary of the existing and planned measures at regional/local levels (where relevant)

Under the now effective Renewable and Alternative Energy Sources and Biofuels Act:

- **Provincial governors:**

1. ensure that the national policy on the promotion of the production and consumption of energy from renewable and alternative energy sources and the production and use of biofuels and other renewable fuels for transport is implemented in the territory of the province;
2. coordinate the activities related to the implementation of the policy on the promotion of the production and consumption of energy from renewable and alternative energy sources and the production and use of biofuels and other renewable fuels for transport between the municipalities in the province;
3. submit to the Minister of Economy, Energy and Tourism information on the implementation of the programmes in the territory of the province;
4. see to the updating and maintenance of the public information system on the territory of the province.

- **Mayors of municipalities:**

1. develop and submit to the municipal councils for adoption municipal long-term and short-term programmes for the promotion of the use of renewable and

alternative energy sources and the consumption of biofuels and other renewable fuels for transport and supervise their implementation;

2. develop and implement schemes to promote the use of renewable and alternative energy sources and biofuels in accordance with the specific requirements of the municipality;

3. organise information campaigns for the general public in accordance with the national programmes for the promotion of the use of renewable and alternative energy sources and biofuels for transport;

4. submit to the provincial governors information on the implementation of the programmes referred to in it. 1;

5. see to the updating and maintenance of the public information system on the territory of the municipality.

The draft ZEVI provides for the preservation and further expansion of the authorities of provincial governors and municipal mayors, including:

1. to determine and issue opinions on applications clearly and within transparent timescales;

2. not to give rise to discrimination among interested parties;

3. to make allowance for the specific nature of various renewable energy technologies;

4. to set clear and transparent charges, if any, for administrative services based on actual administrative service costs;

5. to provide simplified procedures for issuing permits for projects for individual renewable electricity, heat and cooling energy generation and consumption systems, where appropriate;

6. to provide fast-track procedures for the planning, design and construction of the electricity grid infrastructure

(e) Are there unnecessary obstacles or non-proportionate requirements detected related to authorisation, certification and licensing procedures applied to plants and associated transmission and distribution network infrastructure for the production of

electricity, heating or cooling from renewable sources, and to the process of transformation of biomass into biofuels or other energy products? If so, what are they?

Yes, there are obstacles and these are as follows:

- the authorisation procedures, including those in respect of spatial planning, are not clearly coordinated and defined and are not transparent with respect to the decision-making process for applications for the coordination of projects and building permits;
- there is no public register and it is not always clear what information is necessary for the processing of applications for authorisations, certificates and licences for installations generating electricity from renewable sources and for providing support to applicants;
- the procedures for obtaining authorisations for the design and construction of small-scale and decentralised facilities for the production of electricity from renewable sources are not simplified yet. This, however, as was noted above, relates to solar systems;
- the Local Government and Local Administration Act entitles municipalities to adopt their own ordinances and guidelines. As a result, investment projects also need to satisfy the requirements of such 'local' regulations, which differ from one municipality to another

To remedy these obstacles, the ZEVI incorporates specific measures to enhance the coordination of administrative procedures and to improve their transparency and efficiency.

In addition to the measures in points (c) and (d), the ZEVI incorporates:

A new approach to the coordination and harmonisation of procedures in the connection of renewable electricity providers, by introducing the following main steps preceding the connection process:

- Planning the development of the transmission and distribution networks, and coordinating the intended investments of the network operators for the connection of renewable generating facilities, by connection zones and voltage levels;
- Approving the anticipated maximum capacity that can be made available for connection to renewable electricity generating facilities to the transmission and distribution system by the SEWRC, after coordination with the Minister for the Economy, Energy and Tourism.

To ensure transparency, there will be a requirement to make information available to the public, including publication of the following on the websites of relevant institutions:

- The forecast maximum capacity that can be put forward for connection to the transmission and distribution networks of producers of renewable electricity, by connection zones and voltage levels (by the SEWRC);
- the short-term and long-term programmes of municipalities;
- the opinions and full information on the connection procedures of producers (by electricity distribution and transmission network operators);
- the connection tariffs for renewable gas facilities (gas transmission and distribution network operators)

The draft ZEVI provides facilitated procedures for renewable electricity, heat and/or cooling installations whose total installed capacity is up to 30 kW on existing buildings in urbanised areas, including their roofs and facades, or the land on which they are built, and with a total installed capacity of up to 1 kW for buildings in industrial areas

(f) What level of administration (local, regional and national) is responsible for authorising, certifying and licensing renewable energy installations and for spatial planning? (If it depends on the type of installation, please specify.) If more than one level is involved, how is coordination between the different levels managed? How will coordination between different responsible authorities be improved in the future?

The central, regional and local administration are involved in different stages of the project development process, as follows:

Procedures

- Assessment of the potential of the respective renewable source;
- Acquisition of property rights over land or creation of a right in rem (a right to build) over it in favour of the company. The acquisition of property rights over land is not in itself an administrative procedure. The acquisition of property rights over land in the case of converting it to another type of land use falls within the competence of the central administration and, in the case of land below 50 daa[8] – within the competence of the regional agricultural offices.

[8] The decare is equal to 1000 square metres. [*Translator's note]*

The next stage may be called the stage of permits and contracts and includes:

- Preparation of an investment intention – at this stage, various types of notifications are required to be submitted: to the municipality and to the Regional Inspectorate for the Environment and Waters (Ministry of the Environment and Waters) in order to determine the procedure required under Chapter V• of the Environmental Protection Act ('ZOOS'): for environmental assessment, assessment of the compatibility and/or environmental impact assessment;
- Environmental impact assessment – decisions are issued by the Regional Inspectorates for the Environment and Waters ('RIEW') in consultation with the Ministry for Health;
- Conversion to another type of land use and approval of a detailed master plan;
- Obtaining a permit for design;
- Development and coordination of the investment project;
- Obtaining an opinion from the transmission/distribution company and conclusion of a preliminary connection agreement;
- Approval of the investment project and obtaining a building permit from the municipality;
- Conclusion of a final agreement for connection to the network with the relevant electricity distribution company/NEK;
- Building permits – municipal administration;
- Authorisations for placing in service – issued by the regional directorates for national construction supervision ('RDNCS').

Certification procedures

- Guarantees of origin of electricity produced from renewable energy sources – State Energy and Water Regulatory Commission (central administration);

Licensing procedures

- Licences for electricity generation from renewable sources:
  - for power plants of less than 5 MW capacity – simple notification procedure;
  - for power plants of more than 5 MW capacity – SEWRC (central

administration).

The general link as regards various administrative procedures comes about when producers sign preliminary connection agreements and at the final stage when connection agreements are signed based on a particular required set of documents. This makes it possible to monitor the extent to which the process of acquiring the relevant permits at the intermediate and final stages is complete.

Coordination between authorisation procedures will be improved in 2 basic ways:

- The Agency for Sustainable Energy Development ('ASED') will carry out activities related to the coordination of procedures and information. The purpose is to improve the business environment by providing the necessary information and assistance to investors throughout the entire implementation of investment projects, including the authorisation process. In this way, coordination and links with the regional authorities (including the municipal administration), which may have specific local requirements, are expected to be improved;
- Steps will be taken to develop and issue guidelines for investors in renewable energy projects in Bulgaria, including in particular a comprehensive overview of the authorisation procedures to be developed. These guidelines will also be made available in one or more of the working languages of the European Union.

(g) How is it ensured that comprehensive information on the processing of authorisation, certification and licensing applications and on assistance to applicants made available? What information and assistance is available to potential applicants for new renewable energy installations on their applications?

Information on the processing of applications is provided mainly by written communication with applicants for the purposes of clarifying the procedures applicable to their investment proposals. Under the Access to Public Information Act, full access is granted to anyone that has submitted a request to the relevant institution. In addition, some of the procedures and applications are published on the websites of the government departments and companies.

As yet, there is no integrated system for provision of information other than that under the Access to Public Information Act.

In order to encourage the development and use of renewable sources, and in accordance with Article 13 of Directive 2009/28/EC, the current ZVAEIB and the draft ZEVI envisage the

establishment of a National Information System showing the capacity, production and use of energy from renewable sources. The system will make information available to all persons and institutions with an interest in renewables: local and central government authorities, producers, operators, investors, owners, suppliers, auditors, distributors, scientific and research organisations, etc. The system is planned to contain the following information:

- national targets for the production and use of energy from renewable sources, in total and by sector;
- NREAP progress reports;
- new installation construction and commissioning procedures;
- a list of installers;
- a list of auditors
- measures to stimulate the production and use of energy from renewable sources;
- the net benefits, energy consumption and energy efficiency of equipment and the systems for the production and use of energy from renewable sources;
- seminars, conferences and other events related to the production and use of energy from renewable sources;
- information and awareness campaigns;
- the authorisation, certificate and license application processing procedures,
- the production and use of energy from renewable sources;
- projects financed by the Energy Efficiency and Renewable Sources Fund
- other information;

(h) How is horizontal coordination facilitated between different administrative bodies, responsible for the different parts of the permit? How many procedural steps are needed to receive the final authorisation/licence/permit? Is there a one-stop shop for coordinating all steps? Are timetables for processing applications communicated in advance? What is the average time for obtaining a decision for the application?

The national legislation ensures horizontal coordination. The relevant rules and regulations refer to related acts. They also specify the responsible bodies.

Coordination between administrative bodies is conducted by correspondence. There is no one-stop shop at this stage; however, measures to introduce one are planned.

The rules of procedure of the different administrative bodies also include indicative timetables for processing applications. Time limits differ according to the complexity of the administrative procedure.

An important factor in improving coordination is also increasing administrative capacity, which will minimise the impact of subjectivity when conducting procedures.

The number of procedural steps needed to complete the necessary administrative procedures is 20 at the most. It should be noted that not all steps need to be completed in each case, so it is difficult to determine the average time for obtaining a decision for the application. It varies widely and may take 6 months to 1 year or more.

(i) Do authorisation procedures take into account the specificities of the different renewable energy technologies? If so, please describe how. If they do not, do you envisage taking them into account in the future?

The procedure for obtaining a building permit takes into account the specificities of the different technologies. For example, no building permit is required for the construction of solar collectors for hot water, whereas such a permit is required for the construction of photovoltaic installations of the same capacity.

In addition, under the Spatial Planning Act procedures take into account technical capacity. When issuing building permits, renewable energy installations are classed under one of the following three categories:

- 1st category – of over 100 MW installed capacity;
- 2nd category – of 25 to 100 MW installed capacity;
- 3rd category – of less than 25 MW installed capacity.

Renewable energy power plants of over 5 MW installed capacity are subject to licensing by the SEWRC, can be connected to the transmission network and, thus, meet more requirements as compared to power plants of less than 5 MW installed capacity, which are most often connected to the distribution network.

(j) Are there specific procedures, for example simple notification, for small-scale, decentralised installations (such as solar panels on buildings or biomass boilers in

buildings)? If so, what are the procedural steps? Are the rules publicly available to citizens? Where are they published? Is the introduction of simplified notification procedures planned in the future? If so, for which types of installation/system? (Is net metering possible?)

There are still no specific, simplified procedures for small-scale, decentralised installations. The construction of any energy facility is subject to the same statutory procedure.

At present, no building permit is required for solar hot water collectors.

Under the draft ZEVI, the provision of connection capacity for energy facilities of up to 30kW on the roofs and facades of buildings and the land belonging to them within urbanised territories, and in industrial zones of up to 1 MW would be exempt from the standard procedure

The draft ZEVI also envisages amendments to the Spatial Planning Act to simplify the procedures for investing in renewable electricity, heat and/or cooling energy generators of up to 30 kW on existing buildings in urbanised areas, including the roofs and facades, and on the land belonging to the buildings.

Net metering is possible and is implemented in practice.

(k) Where are the fees associated with applications for authorisation/licences/permits for new installations published? Are they related to the administrative costs of granting such permits? Is there any plan to revise these fees?

The fees collected for the issue of necessary permits for the construction and operation of new installations and for the expansion of existing ones are strictly regulated and are related to the administrative costs of granting such permits.

As regards environmental permits, the Tariff of Fees collected by the Ministry of the Environment and Waters is applicable. In respect of other permits, the fees are collected in accordance with the relevant rules and regulations: for reassignment of land, the Tariff of Fees collected for reassignment of agricultural land (adopted by Decree No 112 of the Council of Ministers of 31 May 2002; promulgated: SG No 56 of 7 June 2002; amended: SG No 10 of 6 February 2004, No 75 of 12 September 2006, No 95 of 4 November 2008) is applicable; for building permits, the fees collected are determined by decision of the local municipal councils.

The Biological Diversity Act and the Ordinance on assessing the compatibility of plans, programmes and investment proposals with the subject matter and objectives of Natura 2000

areas are currently being revised, which could lead to a change in the amount of the fee for assessing compatibility.

(l) Is official guidance available to local and regional administrative bodies on planning, designing, building and refurbishing industrial and residential areas to install equipments and systems using renewable energy sources in electricity and heating and cooling, including in district heating and cooling? If such official guidance is not available or insufficient, how and when will this need be addressed?

National strategies, programmes and plans have been developed in relation to the planning, design, construction and refurbishment of industrial and residential areas, as follows:

- First National Energy Efficiency Action Plan 2008-2010, adopted by decision of the Council of Ministers on 4 October 2007;
- National Long-term Programme for the Promotion of the Use of Renewable Energy Sources 2005-2015, MEET/EEA, December 2005;
- National Long-term Programme for the Promotion of the Use of Biomass 2008-2020;
- National Programme for the Renovation of Residential Buildings in the Republic of Bulgaria adopted by decision of the Council of Ministers on 20 January 2005;
- Financing Strategy for Building Insulation to Improve Energy Efficiency and Programme for its Implementation, adopted by decision of the Council of Ministers on 14 July 2005.

The Energy Efficiency Act recommends the use of renewable energy in residential buildings, but this recommendation is not a mandatory provision:

"*Article 15*

(1) Each investment project for construction of a new building or reconstruction, major renovation or refurbishment of an existing building must comply with the energy efficiency requirements provided for in this Act.

(2) Investment projects for new buildings referred to in paragraph 1 with a total floor area of over 1000 sq. m. must accommodate the use of:

1. decentralised systems for the production and consumption of energy from renewable sources;

2. installations for combined heat and power generation;

3. central or local heating and cooling systems;

4. heat pumps."

In respect of each investment project under Article 15 of the Energy Efficiency Act, the authorities referred to in the Spatial Planning Act make an assessment of the conformity of the project with the requirements of the Energy Efficiency Act. This assessment is carried out by companies authorised by the Energy Efficiency Agency to carry out energy efficiency audits of buildings. No building permit for new buildings can be obtained without a conformity assessment.

The Energy Efficiency Act has introduced mandatory energy audits of energy consumers that are producers of goods and services having an annual energy consumption of over 3000 MWh and owners of buildings with a total floor coverage of over 1000 m^2.

The audits aim to determine the potential for reducing energy costs and to propose technical-economic and environmentally sound measures.

The audits end with the preparation of a report and summary of the measures proposed to improve energy performance. The report contains: a detailed description of the building; an analysis and evaluation of the current state of the technical systems, including the energy supply management system, energy mix and energy use baseline for the main energy carriers; a comparison of the specific energy consumption indicators with the benchmark indicators and an evaluation of the potential for reducing energy costs; a detailed description of the measures identified to reduce energy costs and the expected payback period; a detailed feasibility study of the individual measures selected and the combinations thereof; and the proposed sequence of implementing the measures.

The audits are carried out in accordance with a uniform model. They must also identify the possibilities for the use of renewable energy sources with a view to reducing the use of conventional energy sources and carbon emissions.

Upon transposing into the Bulgarian legislation the amended Directive 2002/91/EC (the EPBD) and Directive 2009/28/EC, arrangements will be implemented to increase the use of renewable energy sources in buildings. Minimum levels for the use of energy from renewable sources in new buildings and in existing buildings that are subject to major renovation are planned to be introduced.

(m) Are there specific trainings for case handlers of authorisation, certification and licensing procedures of renewable energy installations?

At present, there are no mandatory standard trainings for case handlers.

At the start of the calendar year, each institution adopts an annual plan for mandatory and specialised training for its officials, which is revised as appropriate.

4.2.2. Technical specifications (Article 13(2) of Directive 2009/28/EC)

(•) To benefit from support schemes do renewable energy technologies need to meet certain quality standards? If so, which installations and what quality standards? Are there national, regional standards that go beyond European standards?

As yet, facilities do not need to meet any quality standards in order to benefit from support schemes. At the same time, there are many national standards (developed on the basis of the European norms, etc.) for renewable energy technologies but none of them is linked to eligibility for support schemes. There are only requirements regarding the type of equipment for which funding is provided through aid schemes and these are laid down in the definitions of the eligible activities under the relevant assistance programmes.

Several standards have been introduced concerning the characteristics of solid biofuels – in particular their moisture content, ash content, lower calorific value, etc. – but they are not linked to eligibility for support schemes.

The requirement under Article 13(6) of Directive 2009/28/EC regarding biomass, in accordance with which Member States are required to promote conversion technologies that achieve a conversion efficiency of at least 85 % for residential and commercial applications and at least 70 % for industrial applications is not yet implemented in the Bulgarian legislation.

4.2.3. Buildings (Article 13(3) of Directive 2009/28/EC)

(a) Reference to existing national and regional legislation (if any) and summary of local legislation concerning the increase of the share of energy from renewable sources in the building sector:

The use of renewable energy technologies in buildings is promoted through the system of tax incentives for owners of buildings provided for in the Local Taxes and Levies Act and the relevant regulations. The now effective incentive system provides that a building that has been granted a class A or B energy performance certificate be exempted from property tax for a longer period of time if renewable energy technologies are used in the building. For the time being, this incentive scheme does not include requirements concerning the share of energy from renewable sources.

The Energy Efficiency Act includes a requirement to take into account the possibilities for the use of energy from renewable sources in new and existing buildings that are subject to renovation, as follows:

"Article 15

(1) Each investment project for construction of a new building or reconstruction, major renovation or refurbishment of an existing building must comply with the energy efficiency requirements provided for in this Act.

(2) Investment projects for new buildings referred to in paragraph 1 with a total floor area of over 1000 sq. m. must accommodate the use of:

1. decentralised systems for the production and consumption of energy from renewable sources;

2. installations for combined heat and power generation;

3. central and local heating and cooling systems;

4. heat pumps."

The provisions quoted above do not comply with the requirements for buildings (Article 13(4) of Directive 2009/28/EC). Upon transposing Directive 2009/28/EC, minimum levels for the use of energy from renewable sources in new buildings and in existing buildings that are subject to renovation are planned to be introduced. In addition, the public sector may decide to take part in the implementation of demonstration projects serving as a shining example of good practice.

The Local Government and Local Administration Act entitles local authorities to adopt their own rules, regulations, instructions, decisions, strategies, forecasts, programmes and plans for development of the municipality, drawn up on the basis of the EU policies for the development of local communities.

(b) Responsible Ministry(/ies)/authority(/ies):

Responsible ministries are the Ministry of Economy, Energy and Tourism ('MEET') and the Ministry for Regional Development and Public Works ('MRDPW') and the municipalities.

(c) Revision of rules, if any, planned by:

The requirement for owners of new and renovated buildings to introduce the use of renewable energy installations in buildings is envisaged to be implemented while harmonising the

national legislation with Directive 2009/28/EC and Directive 2010/31/EC on the energy performance of buildings.

The draft ZEVI introduces minimum requirements for the share of renewable energy to be used in the total energy requirements of new and reconstructed existing buildings, in accordance with the deadlines set out in Directive 2009/28/EC:

- from 1 January 2012 for public buildings;
- from 31 December 2014 for all other buildings.

An assessment and review of existing legislation that needs to be updated to conform with the Buildings Directive is currently underway. The new requirements will be implemented in accordance with the transposition deadlines of Article 28 of Directive 2010/31/EC.

(d) Summary of the existing and planned measures at regional/local levels:

Under the Renewable and Alternative Energy Sources and Biofuels Act ('ZVAEIB'), **provincial governors:**

1. ensure that the national policy on the promotion of the production and consumption of energy from renewable and alternative energy sources and the production and use of biofuels and other renewable fuels for transport is implemented in the territory of the province;
2. coordinate the activities related to the implementation of the policy on the promotion of the production and consumption of energy from renewable and alternative energy sources and the production and use of biofuels and other renewable fuels for transport between the municipalities in the province;
3. submit to the Minister of Economy, Energy and Tourism information on the implementation of the programmes under Article 7(1) in the territory of the province;
4. see to the updating and maintenance of the public information system on the territory of the province.

Under the ZVAEIB, **mayors of municipalities:**

1. develop and submit to the municipal councils for adoption municipal long-term and short-term programmes for the promotion of the use of renewable and alternative energy sources and the consumption of biofuels and other renewable

fuels for transport and supervise their implementation;

2. develop and implement schemes for the promotion of the use of renewable and alternative energy sources and biofuels in accordance with the specific requirements of the municipality;

3. organise information campaigns for the general public in accordance with the national programmes for the promotion of the use of renewable and alternative energy sources and biofuels for transport;

4. submit to the provincial governors information on the implementation of the programmes referred to in it. 1;

5. see to the updating and maintenance of the public information system on the territory of the municipality.

While harmonising the national legislation with the provisions of Directive 2009/28/EC, the following obligations for the promotion of the production and use of renewable energy are planned to be imposed on local authorities:

Provincial governors must:

1. ensure that the national policy on the promotion of the production and consumption of electricity, heating and cooling from renewable sources, the production and consumption of gas from renewable sources and the production and consumption of biofuels and renewable fuels in the transport sector is implemented in the territory of the province;

2. coordinate the activities related to the promotion of the production and use of electricity, heating and cooling from renewable sources, the production and consumption of gas from renewable sources and the production and use of biofuels and renewable fuels in the transport sector between the municipalities in the province;

3. submit to the Executive Director of the Agency for Sustainable Energy Development information on the implementation of the long-term and short-term programmes for the promotion of the use of energy from renewable sources and biofuels and the municipal support schemes in the municipalities within the territory of the province;

4. see to the updating and maintenance of the national information system

regarding the potential for production and use of energy from renewable sources within the territory of the province;

5. propose amendments to rules and regulations adopted by the municipal councils, where the authorisation, certification and licensing procedures including spatial planning do not comply with the requirements of the renewable energy policy;

6. challenge through legal proceedings the rules and regulations referred to in it. 5 adopted by the municipal councils where they do not comply with the requirements of the renewable energy policy.

Municipal councils must adopt long-term and short-term programmes for the promotion of the use of renewable energy and biofuels and municipal support schemes.

Mayors of municipalities must develop and submit to the municipal councils for adoption long-term and short-term programmes, which must include:

1. an assessment of the existing and estimated potential of the resource for production of renewable energy in the territory of the municipality;

2. a feasibility study of the construction of renewable energy facilities or installations producing biofuels and bioliquids for the transport sector on uncultivated land that is public or private municipal property and identification of appropriate measures for the utilisation of such land;

3. a feasibility study of the cultivation of energy crops and the use of the residues and waste thereof for the production of biofuels and bioliquids on uncultivated land and identification of appropriate measures for the utilisation of such land;

4. a feasibility study of the cultivation of plant and forest species serving as raw feedstock and the use of the residues and waste thereof for the production of heating and/or electricity on uncultivated land and identification of appropriate measures for the utilisation of such land;

5. measures promoting the use of energy from renewable sources and energy efficiency measures in the implementation of projects for the reconstruction, major renovation or refurbishment of buildings that are municipal property or buildings that are co-owned by the State and the municipality;

6. measures promoting the use of energy from renewable sources in the construction and reconstruction of street lighting systems in the territory of the

municipality;

7. measures promoting the use of energy from renewable sources in the construction and reconstruction of park, decorative and façade lighting systems in the territory of the municipality;

8. measures for the replacement of public transport vehicles using conventional fuels by vehicles using biofuels and/or renewable fuels;

9. measures supporting the construction of installations producing heating from renewable sources or of a heat transmission network in the territory of the municipality, in respect of which a licence for heat transmission has been obtained;

10. a feasibility study of the use of heating produced from renewable sources and the obtaining of a licence for the construction of a plant producing heating from renewable sources and a heat transmission network in the territory of the municipality;

11. a feasibility study of the construction of energy generation facilities from renewable sources on the roofs of buildings that are municipal property or buildings that are co-owned by the State and the municipality;

12. support schemes for projects for the production and consumption of electricity, heating and cooling from renewable sources, the production and consumption of gas from renewable sources and the production and consumption of biofuels and renewable fuels for the transport sector;

13. support schemes for projects for the implementation of individual systems for consumption of electricity, heating and cooling from renewable sources;

14. developing and/or updating the master and detailed master plans in connection with the execution of civil engineering works for the implementation of projects referred to in it. 6, 7 and 8;

15. information and awareness-raising campaigns for the general public on the support measures, practical benefits and specificities of the development and use of energy from renewable sources;

16. other measures relating to the production and consumption of electricity, heating and cooling from renewable sources, the production and consumption of gas

from renewable sources and the production and use of biofuels and renewable fuels for transport.

(e) Are there minimum levels for the use of renewable energy in building regulations and codes? In which geographical areas and what are these requirements? (Please summarise.) In particular, what measures have been built into these codes to ensure the share of renewable energy used in the building sector will increase? What are the future plans related to these requirements/measures?

There are no minimum levels for the use of renewable energy laid down in buildings regulations. Such obligations will be established after the transposition into the national legislation of the requirements of Directive 2002/91/EC[9].

Under the Local Taxes and Levies Act, buildings put into use before 1 January 2005 that have been granted a class A energy performance certificate are exempted from property tax for a period of 7 or 10 years. The longer period of tax exemption applies to buildings that, along with energy efficiency measures, have also implemented measures for the use of renewable energy. The period of tax exemption in respect of buildings that have been granted a class B certificate is 3 or 5 years, respectively, depending on the use of renewable energy.

No minimum share of renewable energy is required in connection with this fiscal measure.

The future plans relate only to the required mandatory minimum levels for the use of renewable energy in new and renovated buildings, although at this stage the mandatory use requirement is not implemented.

No mandatory requirements have been laid down in respect of existing buildings; numerous measures, however, have been put in place, which will positively affect this sector, especially through the more efficient conversion of biomass.

The measures to increase the use of energy from renewable sources in the building stock are described in 4.2.1(l) and 4.2.3(i) with regard to the requirements for mandatory energy efficiency audits under the Energy Efficiency Act.

(f) What is the projected increase of renewable energy use in buildings until 2020? (If possible differentiating between residential — 'single-unit' and 'multiple unit', commercial, public and industrial.) (To answer this question you may use a table as Table 6 below. Data

[9] Perhaps, the author means the revised Directive 2002/91/EC. *[Translator's note]*

could be given yearly, or for selected years. Both heating and cooling and electricity consumption from renewable energy sources should be included.)

The building sector in Bulgaria does not figure as a separate sector in the final energy consumption. For this reason, there are no historic and projected data relating to its energy consumption and the line "Total" in the table below cannot be completed.

Table 6

Estimated share of renewable energy in the building sector, %

	2005	2010	2015	2020
Residential	32	34	36	38
Commercial	4	6	8	10
Public	4	6	8	10
Industrial	1	1	1	1
Total				

In the energy balances, the consumption of residential buildings is included in the "Households" sector and the table above shows the share of renewable energy used in the heating of these buildings as compared to the consumption of that sector.

In the energy balances, the consumption of commercial and public buildings is included in the "Services" sector and the table above shows the share of renewable energy used in the heating of these buildings as compared to the consumption of that sector.

Industrial buildings are not included in the building sector but are treated as part of industrial systems. In the energy balances, the consumption of industrial buildings is included in the "Industry" sector and the table above shows the share of renewable energy used in the heating of these buildings as compared to the total consumption of that sector. In line with the expert assessments, the consumption of industrial buildings is assumed to be 10 % of the total consumption of industry. The estimate is based on historic and projected data derived through energy efficiency indicators for the household, services and industry sector.

(g) Have obligations for minimum levels of renewable energy in new and newly refurbished buildings been considered in national policy? If so, what are these levels? If not, how will the appropriateness of this policy option be explored by 2015?

Under the Energy Efficiency Act, new buildings must accommodate the use of decentralised systems for the production and consumption of energy from renewable sources but, as yet, no minimum levels for the use of renewable energy have been laid down in the legislation.

Obligations for minimum levels of renewable energy in new and newly refurbished buildings are planned to be introduced in accordance with the requirements of Directive 2009/28/EC.

(h) Please describe plans for ensuring the exemplary role of public buildings at national, regional and local level by using renewable energy installations or becoming zero energy buildings from 2012 onwards? (Please take into account the requirements under the EPBD).

As yet, no plans for ensuring the exemplary role of public buildings have been developed but there are some preliminary ideas about zero energy buildings. The measures planned, however, will take into account the cost effectiveness of the implementation of renewable energy installations in public buildings in order to demonstrate the benefits of these measures to the general public.

The imposition of an obligation for public buildings, which currently use electricity and fuel/gas oil for heating, to switch to renewable sources (in particular biomass) is currently being considered. At this stage, however, this obligation has not been elaborated in detail and no timetable has been fixed for the implementation of this measure.

At present, due to the promotion of corporate social responsibility and the policy on climate change, the number of individual organisations that have taken steps on their own initiative to introduce and implement renewable energy technologies in buildings, making public this initiative, is increasing.

Increased energy efficiency and improved energy performance of buildings that are municipal or public property is required under the Energy Efficiency Act developed on the basis of Directive 2006/32/EC of the European Parliament and of the Council on energy end-use efficiency and energy services and Directive 2002/91/EC of the European Parliament and of the Council on the energy performance of buildings.

The Act has introduced requirements for mandatory energy auditing and energy performance certification of public and municipal buildings with a total floor area of over 1 000 m^2.

The Energy Efficiency Agency keeps lists of the names of obligated persons under the Energy Efficiency Act and the values of individual energy savings targets set for them, including information on:

- the allocation of energy savings targets to buildings of over 1 000 m^2 which are public property;
- the allocation of energy savings targets to buildings of over 1 000 m^2 which are municipal property.

The results will be given in annual reports under the three-year National Energy Efficiency Action Plan.

(i) How are energy efficient renewable energy technologies in buildings promoted? (Such measures may concern biomass boilers, heat pumps and solar thermal equipment fulfilling eco-label requirements or other standards developed at national or Community level (cf. text of Article 13(6))).

- The use of renewable energy technologies in buildings is promoted through the system of tax incentives for owners of buildings. The now effective incentive scheme provides that a building that has been granted a class A or B energy performance certificate be exempted from property tax for a longer period of time if renewable energy technologies are used in the building. For the time being, this incentive scheme does not include requirements regarding the energy efficiency of renewable energy installations and the share of energy from renewable sources. That is why, it is necessary to improve the system.
- Since 2004, the EBRD Residential Energy Efficiency Credit Line ('REECL') facility provides loans and grants up to 30 % for the collective implementation of energy efficiency measures in buildings. The measures include the following:
  - installation of biomass boilers;
  - installation of solar panels;
  - installation of heat pump systems.

The facility ceased operating in January 2010, although it is expected that the facility will be renewed in the future and that further disbursement of funds will follow.

The Energy Efficiency Act has introduced:

- **mandatory energy audits of buildings of over 1 000 sq. m.**

In compliance with the requirements of the Energy Efficiency Act, any building already in use with a total floor area of over 1 000 sq. m. as well as any other building already in use, which is public and/or municipal property, with a total floor area of over 1 000 sq. m. is subject to mandatory energy auditing and certification.

The owners of such buildings are required to implement the energy efficiency measures prescribed by the energy audit within three years of the date of acceptance of the audit results.

Audits aim to identify the possibilities for reducing energy costs and to propose cost-effective and environmentally sound measures in existing buildings. They end with the preparation of a report and summary of the measures proposed to improve the energy performance indicators.

The owners of buildings subject to mandatory certification are required to implement the energy efficiency measures prescribed by the audit within three years of the date of acceptance of the audit results.

- **mandatory energy audits of industrial systems**

Energy audits of industrial systems aim to identify the specific possibilities for reducing the energy consumption of industrial systems and to recommend measures to improve energy efficiency.

Any industrial system the annual energy consumption of which exceeds 3000 MWh is subject to mandatory energy auditing. The audit is carried out at least once every three years.

The owners of industrial systems referred to in paragraph 2 are required to implement the measures prescribed by the energy audit within two years of the date of acceptance of the audit results.

- **provision of energy services**

Energy services aim to combine the supply of energy with energy efficient technology and/or with action, which may include the operation, maintenance and control necessary to deliver the service and lead to verifiable and measurable or estimable energy efficiency improvement and/or primary energy savings.

- **energy performance certificates of buildings**

The energy performance certificate of a building must at least contain the following information: the value of the integrated energy performance of the building and the reference

value, including the specific annual energy consumption expressed in kWh/m^2 in primary or consumed energy, the total annual energy consumption expressed in MWh in primary or consumed energy, the C• $_2$ emission savings, the classification of the building and the respective class of energy consumption of the building, the heated area, the total space heated, the geometric and thermal characteristics of the building envelope and an assessment of its state, the energy sources, the annual energy consumption of the heating, air-conditioning and hot water supply systems, the measures to improve the energy performance of the building and an assessment of their feasibility.

The energy performance certificate is drawn up in order to assess and establish the conformity of the energy performance of the building with the statutory energy efficiency requirements and the current state of energy consumption of the building.

Energy performance certificates of new buildings are drawn up prior to their entry into service. Energy performance certificates of existing buildings are drawn up by natural or legal persons complying with the requirements of the Energy Efficiency Act ('ZEE') on the basis of the information contained in the report (summary) on the audit of the building carried out by them. According to their energy consumption, buildings are classified into classes A (most efficient) to G (least efficient).

These measures have been laid down in the First National Energy Efficiency Action Plan 2008-2010 drawn up in accordance with Directive 2006/32/EC of the European Parliament and of the Council on energy end-use efficiency and energy services.

The measures included in the plan are reported upon submission of the report on the implementation of the Energy Efficiency Action Plan to the European Commission.

4.2.4. Information provisions (Articles 14(1), 14(2) and 14(4) of Directive 2009/28/EC)

(•) Reference to existing national and/or regional legislation (if any) concerning information requirements according to Article 14 of Directive 2009/28/EC:

Ordinance No 16-28 of 22 January 2008 on the contents, conditions, procedure and manner of the provision of information on produced, purchased and sold quantities of energy from renewable and alternative energy sources, and produced, purchased and sold quantities of biofuels.

- **As regards Article 14(1) of Directive 2009/28/EC:**

At this stage, there is no centralised platform for the provision of this type of information; however, the provision of information is envisaged to be one of the tasks of the Agency for Sustainable Energy Development ('ASED'), which will be established under the draft ZEVI.

It is a well-established practice to make the relevant legislation concerning support measures available in the Bulgarian language on the websites of the competent ministries/authorities, as well as to provide a translation into the English language of the key documents. Under the Ordinance on regulating the prices of electric power, the State Energy and Water Regulatory Commission ('SEWRC') is required to publish on its website the approved prices of electric power. Pursuant to the Energy Act, the SEWRC is also required to publish the approved prices of electric power in its annual bulletin.

It describes the measures in support of electricity generation from renewable sources (feed-in tariffs, obligatory purchase and connection to the network, etc.) and biofuels (reduced or zero rate of excise duty). The Excise Duties and Tax Warehouses Act containing information on the applicable excise duty rates is also publicly available on the Internet.

- **As regards Article 14(2) of Directive 2009/28/EC:**

For the time being, no information on the net benefits, cost and energy efficiency of equipment and systems for the use of heating, cooling and electricity from renewable energy sources is made available on a centralised basis. This obligation will be laid down as one of the main tasks of the ASED, the functions and powers of which are currently being outlined in the draft ZEVI.

At present, such information can be obtained through the system for energy labelling of equipment. The suppliers, manufacturers and the representative organisations of the industry must make this information publicly available.

- **As regards Article 14(4) of Directive 2009/28/EC:**

At this stage, no certification schemes or qualification schemes for installers of different types of renewable energy equipment have been implemented in practice. With the introduction of the certification measures referred to in it. 4.2.5., however, a public register of certified contractors will be published and kept on the website of the managing agency. Installers will also be encouraged to make available the certification scheme on their websites and in publications.

(b) Responsible body/(ies) for dissemination of information at national/regional/local levels:

The responsible body at national level is the Ministry of Economy, Energy and Tourism ('MEET'). The Minister of Economy, Energy and Tourism implements the national policy on the promotion of the production and consumption of electricity, heating and/or cooling from renewable sources, as well as the production and consumption of energy from renewable sources in the transport sector. In addition, he organises information and awareness raising campaigns for the measures promoting the production and use of energy from renewable sources.

The SEWRC is responsible for disseminating information concerning electricity and heating energy prices.

The ASED, which will be established as part of the Ministry of Economy, Economy and Tourism under the draft ZEVI is expected to play a key role in information campaigns at all levels.

Under the draft ZEVI, the Minister of Economy, Energy and Tourism will liaise with the governmental and local authorities in relation to the implementation of the national policy on the promotion of the production and consumption of renewable energy.

The ministries designated as managing authorities of the various operational programmes and other financial support schemes, including the Operational Programme "Competitiveness", OP "Regional Development", the Enterprise for the Management of Environmental Protection Activities and the Rural Development Programme have waged a nationwide campaign promoting the terms and conditions for applying under the respective programmes.

The ministries and institutions referred to above keep on their websites detailed information in this regard.

Representatives of the ministries and other competent authorities constantly take part in various media campaigns, round-table discussions, interviews, workshops, meetings with the industry, etc. in order to present the policy and address the priority areas in the relevant fields.

(c) Summary of the existing and planned measures at regional/local levels (where relevant):

The draft ZEVI requires provincial governors to see to the updating and maintenance of the public information system concerning the available resources for renewable energy and the producers of biofuels and energy from renewable sources in the territory of the province.

The Act also requires mayors of municipalities to develop municipal long-term and short-term programmes for the promotion of the use of renewable energy sources; develop and implement schemes for the promotion of the use of renewable energy sources in accordance with

the specific requirements of the municipality; organise information campaigns for the general public; see to the updating and maintenance of the public information system concerning the available resources for renewable energy and the producers of biofuels and energy from renewable sources in the territory of the municipality.

(d) Please indicate how information is made available on supporting measures for using renewable energy sources in electricity, heating and cooling and in transport to all relevant actors (consumers, builders, installers, architects, suppliers of relevant equipment and vehicles). Who is responsible for the adequacy and the publishing of this information? Are there specific information resources for the different target groups, such as end consumers, builders, property managers, property agents, installers, architects, farmers, suppliers of equipment using renewable energy sources, public administration? Are there information campaigns or permanent information centres in the present, or planned in the future?

Information on the prices of electric power (i.e. feed-in tariffs for electricity produced from renewable sources) is published on the website of the State Energy and Water Regulatory Commission ('SEWRC'). The SEWRC has the obligation to set feed-in tariffs by 31 March each year.

There are no special procedures for publishing information on supporting measures for using RES for the production of heating/cooling and biofuels.

The SEWRC is responsible for the adequacy of the information on feed-in tariff rates for electricity.

As yet, there is no specific information on supporting measures for producing energy from RES geared towards the different target groups, such as end consumers, builders, property managers, property agents, installers, architects, farmers, suppliers of equipment using renewable energy sources and the public administration. Information campaigns are carried out occasionally (by organising events and using the mass media, etc.) but there are no statutory provisions with regard to these campaigns.

The Agency for Sustainable Energy Development will have a key role in the establishment of an information platform and will act as a coordinator in the provision of information on renewable energy sources to all stakeholders in Bulgaria.

(e) Who is responsible for publishing information on the net benefits, costs and energy efficiency of equipment and systems using renewable energy sources for heating, cooling and electricity (Supplier of the equipment or system, public body or someone else?)

At this stage, there is no centralised platform for the provision of information on the net benefits, costs and energy efficiency of equipment and systems using renewable energy sources. The provision of information, however, is envisaged to be one of the tasks of the ASED.

For the time being, such information can be obtained through the system for energy labelling of equipment. The suppliers, producers and the representative organisations of the industry are required to make such information publicly available.

(f) How is guidance for planners and architects provided to help them to properly consider the optimal combination of renewable energy sources, high efficiency technologies and district heating and cooling when planning, designing, building and renovating industrial or residential areas? Who is responsible for that?

As yet, no coordinated guidance is provided at governmental level to help such interested parties when designing, building or renovating industrial or residential areas.

The Ministry of Economy, Energy and Tourism has the leading role in this respect and will assign this task to the ASED (in the same way in which the Energy Efficiency Agency performs such a function in relation to energy efficiency measures).

As regards the private sector, industry representative organisations such as the Bulgarian Photovoltaic Association or the National Biofuels Association also provide specific technical guidance to help such users.

(g) Please describe the existing and planned information, awareness raising and training programmes for the citizens on the benefits and practicalities of developing and using renewable sources. What is the role of regional and local actors in the designing and managing these programmes?

Information on the possible use of renewable energy sources is disseminated to the general public through the activities carried out by the Ministry of Economy, Energy and Tourism and the Energy Efficiency Agency, including international projects under the EU programmes.

Information on the benefits and practical applications of renewable energy is also made available by means of numerous information campaigns and forums, and projects under the Operational Programme “Regional Development".

4.2.5. Certification of installers (Article 14(3) of Directive 2009/28/EC)

(•) Reference to existing national and/or regional legislation (if any) concerning certification or equivalent qualification schemes for installers according to Article 14(3) of Directive 2009/28/EC:

So far, no statutory requirements have been laid down regarding the certification/qualification of installers. At present, suppliers themselves arrange for the training of their employees. This requirement has arisen with the entry into force of Directive 2009/28/EC and, more specifically, of Article 14(2) of Directive 2009/28/EC.

The full transposition of Article 14 of the Directive, including the provisions on the training and certification of installers of different types of renewable energy installations, are arranged in the draft ZEVI.

(b) Responsible body/(ies) for setting and authorising certification/qualification schemes by 2012 for installers of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps:

No later than 31 December 2012, the Republic of Bulgaria will implement a qualification scheme for installers, in accordance with Article 14(3) and Annex IV to Directive 2009/28/EC. The scheme components will relate to the installation of:

- biomass boiler and stoves;
- heat pumps;
- shallow geothermal systems;
- solar photovoltaic systems;
- solar thermal systems;
- wind power systems.

The Ministry of Economy, Energy and Tourism (‘MEET’), in cooperation with the Ministry of Education, Youth and Science, will establish a qualifications framework, which will be in compliance with the requirements of the EU Renewables Directive and the national educational

and qualifications system. Installer qualifications for renewable energy equipment will be obtained in accordance with the Professional Education and Training Act.

The national training requirements for obtaining installer qualifications and the period of validity of the relevant certificates will be laid down in an ordinance of the Minister of Education, Youth and Science and the Minister of Economy, Energy and Tourism.

The institutions entitled to carry out training leading to vocational qualifications in accordance with the Professional Education and Training Act will submit each year to the Agency for Sustainable Energy Development ('ASED') a list of the persons that have obtained the qualifications to carry out the above activities.

The MEET will liaise with the Ministry of Labour and Social Policy, NGOs and industrial organisations with a view to involving a wide circle of stakeholders in the process of preliminary approval of any qualification scheme.

The ASED will provide methodological guidance and information to training institutions concerning the recent developments in the Community and national legislation and the need to implement additional requirements in respect of qualification schemes and trainees.

Bulgaria has already joined the common certification and accreditation system for installers of small-scale renewable energy systems in the European Union, which is expected to be implemented after 2011. Its development is supported by the QualiCert project of the Intelligent Energy – Europe programme of the European Union.

(c) Are such certification schemes/qualifications already in place? If so, please, describe.

At present, no such certification schemes are in place.

(d) Is information on these schemes publicly available? Are lists of certified or qualified installers published? If so, where? Are other schemes accepted as equivalent to the national/regional scheme?

So far, there have been no explicit requirements concerning the certification of installers and, for this reason, there is no publicly available information.

On the basis of the measures planned concerning the certification of installers, the Bulgarian scheme is expected to be harmonised to a large degree with the schemes of the other EU Member States. The QualiCert project of the Intelligent Energy – Europe programme of the

European Union is expected to positively affect the development of the Bulgarian scheme and thus to facilitate the mutual recognition of certificates.

(e) Summary of existing and planned measures at regional/local levels (where relevant).

The qualification scheme will be organised at national level. The details will be set down in accordance with the draft ZEVI.

4.2.6. Electricity infrastructure development (Article 16(1) and Article 16(3) to (6) of Directive 2009/28/EC)

Besides the current situation and already existing legislation future actions, planned revisions, responsible bodies for it and expected results have to be described.

(•) Reference to existing national legislation concerning requirements related to the energy grids (Article 16):

- Energy Act (promulgated: SG No 107 of 9 December 2003; amended: SG No 18 of 5 March 2004, No 18 of 25 February 2005, No 95 of 29 November 2005, No 30 of 11 April 2006, No 65 of 11 August 2006, No 74 of 8 September 2006, No 49 of 19 June 2007, No 55 of 6 July 2007, No 59 of 20 July 2007);
- Renewable and Alternative Energy Sources and Biofuels Act (promulgated: SG No 49 of 19 June 2007; amended: SG No 98 of 14 November 2008; in force on 14 November 2008); (Energy from Renewable Sources Act, effective from April 2011)
- Ordinance No 6 of 9 June 2004 on the connection of electricity producers and consumers to the electricity transmission and distribution networks (promulgated: SG No 74 of 24 August 2004; Judgment No 2535 of the Supreme Administrative Court of 2005 – SG No 27 of 29 March 2005);
- Ordinance No 3 on the set-up of electrical installations and electricity lines, issued by the Minister of Energy and Energy Resources (promulgated: SG No 90 of 13 October 2004 and No 91 of 14 October 2004; in force on 15 January 2005; amended: SG No 108 of 19 December 2007);
- Ordinance No 8 of 9 June 2004 on the conditions and procedure for pursuing the activities of electricity system and distribution network operators and the activities of operational duty personnel of electrical facilities and electrical installations of

consumers (promulgated: SG No 79 of 10 September 2004);

- Ordinance on licensing the activities in the energy sector (adopted by Decree No 124 of the Council of Ministers on 10 June 2004; last amended: SG No 93 of 24 November 2009);
- Distribution Grid Code, adopted by decision of the State Energy and Water Regulatory Commission of 18 June 2007, SG No 66 of 2007;
- Grid Code, issued by the SEWRC (promulgated: SG No 67 of 2 August 2004);
- Rules on the conditions and procedure for access to the electricity transmission and distribution networks. State Energy and Water Regulatory Commission (promulgated: SG No 67 of 2 August 2004).

(b) How is it ensured that transmission and distribution grids will be developed with a view to integrating the targeted amount of renewable electricity while maintaining the secure operation of the electricity system? How is this requirement included in the transmission and distribution operators' periodic network planning?

Pursuant to the Renewable and Alternative Energy Sources and Biofuels Act, the production of energy from renewable and alternative energy sources is promoted through the obligatory connection of producers of renewable energy to the electricity system. To this end, the transmission and distribution companies allocate funds in their annual investment and maintenance programmes for network development related to the promotion of electricity produced from renewable sources.

The time limit for connection of energy facilities to the transmission or respective distribution network is laid down in the connection agreement and may not exceed the time period necessary for putting the energy facility into operation and the equipment necessary for connection.

The producer's costs necessary for the connection of the energy facility to the respective network from the property boundary of the producer to the point of connection are borne by the transmission or the respective distribution company. The producer only pays the direct costs incurred by the transmission or distribution company in relation to his connection, as set forth in the relevant ordinance under Article 36(3) of the Energy Act.

The costs of expanding and reinforcing the transmission and/or distribution network in relation to the connection of the energy facility of the producer under Article 13(2) are borne by the

transmission — accordingly, the distribution — company and are not included in the price for connection of producers of electricity from renewable sources.

Under the Energy Act (Article 87), the electricity transmission company and, respectively, the system operator are under obligation to develop the electricity transmission network in compliance with the long-term forecasts and plans for development of the electricity sector. In addition, distribution companies are also required to develop the electricity distribution network (Articles 89 and 90 of the ZE).

The draft ZEVI requires transmission and distribution network operators to determine the capacity for the connection of new SEWRC-approved resources on an annual basis by connection zone and voltage levels. Entities wishing to build a renewable electricity generation facility, to expand an existing power station or increase the capacity of a power station generating electricity from renewable resources have to submit a connection application to the electricity network operator of the relevant zones.

The network operator considers the applications in the order they are received, carries out a study and issues its opinion on the conditions and means of connection.

Distributed power generation is encouraged through simplified procedures for connecting the following energy facilities:

1. Renewable electricity generation facilities whose total installed capacity is up to 30 kW inclusive, installed on existing buildings in urbanised areas, including roofs and facades and on the land belonging to the building;

2. renewable electricity generation with a total installed capacity of up to 1 kW inclusive, installed on the roofs and facades of manufacturing and warehouse buildings and the land belonging to such buildings in industrial areas

To anticipate expected changes in the structure and nature of generating facilities, the electricity system operator has drawn up a ten-year National Electricity System Development Plan in accordance with the requirements of Directive 2009/72/EC concerning common rules for the internal market in electricity and Directive 2009/28/EC on the promotion of the use of energy from renewable sources, the provisions of which are already part of or will be transposed into the following legislation:

- the Energy Act;
- the Grid Code;

- Requirements of the European Network of Transmission System Operators for Electricity ('ENTSO-E').

The Electricity System Development Plan includes:

- information about the main transmission infrastructure, which has to be built or modernised;
- information about any necessary investments which have already been approved;
- information about any new investments for which a decision has already been taken;
- a timetable for all investment projects.

The Plan is based on the following documents:

- a study of the development of electricity demand in Bulgaria and electric load forecast until 2020;
- a study of electricity generating capacities in Bulgaria, including those using renewable energy sources (RES);
- system management options, capacity and energy balance until 2020, indicating the expected power surplus/shortage;
- a study of the load on the electricity transmission system, taking into account the existing electrical loads and generating capacities;
- a transmission system development plan, including the need to construct new interconnectors;
- an estimate of the investments required for the implementation of the proposed transmission system development plan;
- an analysis of electricity consumption.

The forecasts for the development of electricity demand in the Republic of Bulgaria until 2020 are based on statistical information, the macroeconomic projections of the Ministry of Economy, Energy and Tourism and the forecasts of the electricity distribution companies.

The following factors, which influence electricity demand in the country, have been taken into account:

- gross domestic product, structure and energy intensity;

- the population size/number of households;
- the price of electricity;
- the trends in the development of energy efficiency.

A key element of the development plan is the new generating capacities from renewable sources and the implementation of Directive 2009/28/EC, in particular its provisions relating to electricity.

The main problems arising from the connection and operation of wind power plants (WPPs) and photovoltaic power plants (PVPPs) relate to:

- the real-time management of the electricity system without upsetting the intersystem interchange schedules;
- the rapid development of the electricity transmission network in order to connect installations using RES without adversely affecting its security;
- the allocation of financial resources for the development of the transmission network;
- the pre-selection of investors with serious intentions in the field of renewable energy;
- the need for priority acquisition of the land for the construction of power lines and substations.

The implementation of Directive 2009/28/EC and in particular its provisions relating to electricity and the real-time management of the electricity system without disrupting the intersystem interchange schedules is possible if no more than 1 800 MW of WPP installed capacity and 600 MW of PVPP installed capacity are allowed, while the construction of hydropower plants and biomass-fired power plants is encouraged.

After the decommissioning of the large-scale thermal power plants (by 2015) and if no new large-scale conventional generating capacities, including the Belene NPP, have completed construction within this time period, in order to cover the maximum winter-season loads the country may need to import electricity.

The study of the load on the transmission network has been carried out through the development of calculation models for the electricity system of Bulgaria for different limit modes.

The calculation models have also taken into account the electricity transmission networks of the other ENTSO-E countries that influence load flows in Bulgaria.

The development of the electricity transmission network is conditioned by the trends in loads and generating capacities.

The development of 400 kV networks is conditioned by a number of changes in power generation and the national network:

- the shutdown of Units 3 and 4 of the Kozloduy NPP and their replacement by units in the *Maritsa Basin*;
- the commissioning of the new units in the AES Galabovo TPP;
- the Turkish electricity system operator joining the ENTSO-E;
- the realisation of a cross connection to a 400 kV network;
- the improvement of the security of supply to the city of Burgas and Lukoil Neftohim AD;
- the transfer of the electricity produced by WPPs in the north-east of Bulgaria to the interior of the country;
- the improvement of the security and increase in the power exchange with Greece.

Development of the 220 kV network:

In the opinion of NEK and ESO, 220 kV networks should not be further developed, on account of 400 kV and 110 kV networks. Their development is possible only in exceptional cases in order to solve local problems in the transmission network.

The development of 110 kV networks is conditioned by the improvement of the power exchange with the distribution networks, the connection of power plants using renewable energy and conventional sources of up to 200 MW installed capacity, the supply to areas during scheduled maintenance or emergency repairs of the 400 kV and 220 kV networks.

The main strands of development of the electricity transmission network in the future are as follows:

- increased transmission capacity of the 110 kV “Varna-Kavarna-Dobrudzha" ring through new cross connections (Mayak node station – Dobrich substation, Kavarna substation - Varna North substation) and phased rehabilitation of the existing power

lines along the ring;

- in the event of a continuous increase in the output in the north-east of Bulgaria, construction of two new 400/110 kV substations in the region of Vidno and Svoboda;
- improved power supply to the resorts along the southern coast of the Black Sea and connection of new 110 kV substations between the Burgas substation and Lazur substation;
- increased transmission capacity of the 110 kV network in Sofia in relation to the significant increase in load over recent years;
- completion of the 400 kV Koznitsa power line (Plovdiv – Zlatitsa);
- ensuring a second 110 kV power supply network for the town of Oryahovo from the Kozloduy NPP;
- completion of the reconstruction of the Dobrudzha substation and Varna substation;
- construction of new 400 kV power lines between the Plovdiv substation and Maritsa East 3 TPP in parallel to the existing ones;
- construction of a new 400 kV power line from the Galabovo substation for the new capacity to the Burgas substation;
- improved power supply to the city of Ruse;
- improved power supply to the town of Samokov and Borovets.

The National Electricity System Development Plan will be updated in parallel with the annual update of the NREAP, taking into account the available and estimated maximum installed electrical capacity as at the reporting year, which may be connected to the electricity transmission and distribution networks for the following three years, the available and estimated capacity for grid management as at the date of updating the National Renewable Energy Action Plan, the capacities nominated for connection by types of networks and by regions; the favourable opinions for connection issued by networks and by regions, the year they are put into operation and the type of renewable energy source, etc.

(c) What will be the role of intelligent networks, information technology tools and storage facilities? How will their development be ensured?

Achieving the 2020 energy targets is related directly to the capacity of the power networks to integrate generation from intermittent sources. Information and communications technologies will be widely used to manage the network regimes by adjusting individual parameters and elements as generating facilities are upgraded. The smart networks concept has long been a feature of the Bulgarian transmission network, starting from the use of mechanical and analog devices to ensure the full use of existing equipment and to manage the system in case of outages. The control systems of power stations that are important to the system have emergency control algorithms, which serve to maintain the operational stability of individual generating units during outages in the transmission system. Substations incorporate automated equipment for the rapid containment of breakdowns, automatic supply reinstatement during breakdowns and the prevention of fluctuations, including between electricity systems running in parallel.

As the emergency control systems for major power stations and transmission network have been upgraded in recent decades, the Bulgarian systems operator (ESO) has gradually incorporated modules that are an integral part of “intelligent networks”. These are:

- the SCADA/EMS system for real-time management of the Bulgarian national power network;
- a telecommunications infrastructure to provide information management and exchange;
- software to distribute flows and measure the dynamic stability of the electricity system
- a system for operational dispatcher information, forecasting and planning;
- a system of meteorological stations to forecast the load and output of wind and photovoltaic power plants;
- smart metering systems;
- a system allowing effective short- and long-term planning of the operation of the electricity system.

Currently, the Bulgarian transmission system meets the ENTSO-E system operator requirements for power transmission, and representatives of the ESO sit on the Research and Development Plan Committee, which is responsible for the intellectualisation of transmission systems.

On 21 September 2010, the “Bulgarian Electricity Transmission Network Development Plan for 2010-2020” was presented before the SEWRC, adopted in fulfilment of Order No 363/13 September 2010 and approved by the executive directors of ESO EAD and NEK EAD. This plan will ensure the development of the electricity network, including the enlargement of intelligent systems.

Intelligent control systems in the distribution networks are still in the initial stages of development. Particular emphasis is being placed on investigating the possibility of introducing the concept of “micronetworks”, given the presence of numerous small electricity generating systems whose output fluctuates and cannot be controlled. Pilot projects have been set up for such networks, however further studies are needed for their wider l implementation. Pilot project proposals for installing smart metering have also been devised, however they are still at the exploratory stage.

Distribution companies draft 5-year development plans, which also provide for the gradual implementation of smart elements designed to integrate the electricity generated from renewable sources. Given the increasing output from renewable sources, connection standards have been drafted, and the SCADA system will be up and running within 3 years. The plans also envisage:

- introducing uniform exchange information protocols standardised at SET level – European Smart Grids Technology Platform; and
- implementing new dispatching rules in distribution networks, determining the scope of centralised and local network management primarily to improve security of supply.

Further developments will depend on the level of investment in small generation facilities, as well as of the networks’ investment opportunities. The proposals made by the distribution companies are approved by the regulatory authority (SEWRC), which strives to balance the need for investment with the need to keep energy prices at a reasonable level.

Energy accumulation in Bulgaria is centralised. There are significant pumped storage hydropower plant capacities (864 MW generators and 943 MW pumps) which make it possible to regulate/balance the consumption and generation of electrical energy. Simultaneously, with the introduction of distributed generation, distributed accumulation of energy through various technologies will also be developed, including the use of electric vehicles, which have already started to make inroads.

(d) Is the reinforcement of the interconnection capacity with neighbouring countries planned? If so, which interconnectors, for which capacity and by when?

A second interconnector with Greece is planned to be constructed – a 400 kV overhead power line from the Maritsa East substation in Bulgaria to the Nea Santa substation in Greece. The procedure has been launched.

A second interconnector with Serbia is also planned to be constructed – a 400 kV overhead power line from the Vidin substation (or the Kozloduy NPP) to the Bor substation in Serbia. Practical steps to implement this project have not yet been made.

(e) How is the acceleration of grid infrastructure authorisation procedures addressed? What is the current state and average time for getting approval? How will it be improved? (Please refer to current status and legislation, bottlenecks detected and plans to streamline procedure with timeframe of implementation and expected results.)

The now effective national legislation provides for a mechanism promoting the development of the grid infrastructure in order to achieve reliable and secure functioning of the electricity system as a precondition for the priority development of electricity generation from renewable sources. The Energy Act imposes this obligation on the owner of the transmission network (respectively, the network operator). His activities are licensed and he is under an obligation to allocate funds for the network development and comply with the indicator for reliability of electricity supply, which is approved each year by the Minister of Economy, Energy and Tourism (Article 4(1)(4) of the Energy Act). The investment costs necessary for the performance of his activities are subject to approval by the SEWRC. Thus, the regulator is entitled to recognise the costs related to the reinforcement and extension of the network and to compensate him through the prices.

Authorisation and administrative procedures for the construction of facilities and grid infrastructure fall within the scope of the Energy Act and the Spatial Planning Act. The Energy Act provides for a special procedure for obtaining building permits in cases where the construction or expansion of a site and/or linear facilities and electricity generation equipment is to be carried out on State-owned or municipal land. In such cases, the competent State or municipal authority is obliged to create in favour of the person that will operate the energy facility a non-gratuitous right to build on the land without initiating a tendering or competitive procedure.

In cases where the construction of facilities will take place on private land, however, the energy company must obtain in advance non-gratuitous permission to build on the land required for the construction of the facility. In case of refusal or failure to act for reasons beyond the control

of the energy company, the land may be expropriated in favour of the State under the terms and procedure of the State Property Act.

The State Property Act, however, stipulates that privately-owned properties and parts thereof may be alienated only when national infrastructure facilities are intended to be constructed thereon. In such cases, alienation will take place by decision of the Council of Minister on a proposal from the Minister of Regional Development and Public Works and the Minister of Finance. In consideration of the requirement laid down in Article 16(1) of Directive 2009/28/EC, the new Renewable Energy Act provides that facilities and network infrastructure designed to increase electricity production from RS need to obtain the status of national infrastructure facilities. Thus, the implementation of a simplified procedure for the alienation of private property will be made possible.

In order to take full account of all the risks to the environment and their potential cumulative impact and to prevent the splitting of investment projects into separate parts for the purpose of avoiding certain obstacles to their implementation, arising out of the environmental impact assessment procedure for renewable energy facilities, instructions and guidelines have been drawn up for the practical implementation of the procedures for environmental impact assessment and environmental assessment of plans, programmes and investment proposals under Article 81 of the Environmental Protection Act, as well as the procedure for assessment of the compatibility of plans, programmes, projects and investment proposals with the subject matter and purposes of protecting the areas of conservation under Article 31 of the Biological Diversity Act. By letter of the Ministry of the Environment and Waters (ref. 05-08-1024/11.02.2010), these guidelines have been forwarded to the directors of the regional entities.

(f) How is coordination between grid infrastructure approval and other administrative planning procedures ensured?

Where the implementation of the investment intention and/or the accompanying facilities and activities associated with it requires a separate master plan (or, where appropriate, a detailed master plan applicable only to the particular intention) to be drawn up in advance or requires a modification to be made to a master or another higher-level plan (for example, a master plan and/or a detailed master plan having a wider territorial scope than that required for the implementation of the specific intention) in accordance with the procedure laid down in the relevant legislation (the Spatial Planning Act or another act), the environmental impact assessment procedure should follow the hierarchical sequence of the necessary plans, studies and projects.

It should be noted that if, according to the location selected for placing the facilities, it is highly likely that a detailed master plan will have to be drawn up and/or a modification to a master/detailed master plan will have to be made, the procedure for the authorisation, preparation, coordination and approval thereof should be in accordance with the Spatial Planning Act.

Detailed master plans are included in Annex 2 to the Ordinance on environmental assessments and where, by virtue thereof or by virtue of modifications therein, the placing of wind turbines is envisaged on the grounds of Article 2(2)(1) of this Ordinance, these plans should undergo an evaluation of whether an environmental assessment thereof needs to be carried out. If, first of all, a modification needs to be made to the master plan, then in accordance with Article 2(1)(3) of the Ordinance the modification should also undergo such an evaluation.

The relevant legislation, and in particular Article 138(1) of Ordinance No 14/2005 clearly specifies that the siting of facilities outside urban areas should take place on the basis of a detailed master plan in compliance with the projections of the master plan, if any, and the plot plans approved in accordance with the procedure of the Spatial Planning Act.

Approval, administrative and planning procedures regarding the construction of energy facilities having the status of national infrastructure facilities should be carried out with top priority and coordinated with the respective administrations.

(g) Are priority connection rights or reserved connection capacities provided for new installations producing electricity from renewable energy sources?

The regulatory requirements and the practice of energy companies as regards the connection of new generating capacities to the network are organised in accordance with the “first come, first served” principle. The ZVAEIB provides for “priority connection” to the network of producers of electricity from renewable sources. According to the draft ZEVI, it requires network operators to provide development plans (10 year plans for transmission and 5 year plans for distribution) to ensure the secure integration of all generators, particularly those using renewable sources. The Act introduces a procedure for coordinating plans, which will be approved by the Regulator, for the development of generation. No practice has been introduced of “reserving” connection capacity only for producers of electricity from renewable sources.

Plans for the transmission and distribution networks include the capacities eligible for connection by zone and voltage levels, thereby providing investors with advance information on the connection capabilities.

(h) Are any renewable installations ready to come online but not connected due to capacity limitations of the grid? If so, what steps are taken to resolve this and by when is it expected to be solved?

In the north-east of Bulgaria, which is the area with the highest wind energy potential, there are renewable installations which are not allowed to operate at full capacity by the operator due to capacity limitations of the grid infrastructure. A project for reinforcement and expansion of the network is already underway, which is expected to resolve this problem but administrative procedures may take longer than expected.

Investors have expressed a strong interest in the construction of new capacities — up to 2 200 MW in total for the country — but, notwithstanding the signed preliminary connection agreements, the connection process is blocked by reason of the insufficient development of the transmission network, the slow procedures for alienation of property, the long procedures for coordination with the competent authorities, etc.

In this regard, NEK is planning to expand the transmission network by constructing new 400 kV substations and an additional high voltage network in this area.

The coordination procedure incorporated in the draft ZEVI aims to reduce such delays significantly or to make them less likely

(i) Are the rules on cost sharing and bearing of network technical adaptations set up and published by transmission and distribution system operators? If so, where? How is it ensured that these rules are based on objective, transparent and non-discriminatory criteria? Are there special rules for producers located in peripheral regions and regions with low population density? (Cost bearing rules define which part of the costs is covered by the generator wishing to be connected and which part by the transmission or distribution system operator. Cost sharing rules define how the necessary cost should be distributed between subsequently connected producers that all benefit from the same reinforcement or new lines.)

The connection and cost bearing rules for producers of renewable electricity have been laid down in the Renewable and Alternative Energy Sources and Biofuels Act. Under the Act, the obligation for connection of an electricity producer from renewable sources arises for the transmission or, respectively, the distribution company which is located closest to the producer.

In the terms and conditions for connection, the transmission and distribution companies are required to indicate a minimum connection scheme in accordance with which connection should be established at the nearest existing point of the transmission or distribution network and to indicate the estimated costs of connection. The distribution or transmission company is also required to indicate the possible options of connection to the facilities of producers or consumers that are already connected or are in the process of connection.

The costs necessary for the connection of the energy facility of the producer to the respective network up to the property boundary of the producer are borne by the producer.

The costs necessary for the connection of the energy facility of the producer to the respective network from the property boundary of the producer to the point of connection are borne by the transmission or the respective distribution company. The producer only pays for the direct costs incurred by the transmission or distribution company in relation to his connection. The costs of expanding and reinforcing the transmission and/or distribution network in relation to the connection of the energy facility are borne by the transmission — accordingly the distribution — company and are not included in the price for connection of producers of electricity from renewable sources.

The statutory time limit for connection of energy facilities to the transmission or respective distribution network is laid down in the connection agreement and may not exceed the time period the producer needs to commission the power and connection facilities.

In addition, Ordinance No 6 of 9 June 2004 on the connection of electricity producers and consumers to the electricity transmission and distribution networks, adopted by the Ministry of Economy, Energy and Tourism and published in the State Gazette, No 74 of 24 August 2004, lays down the conditions and procedure for:

1. the connection of facilities of electricity consumers and power plants to the transmission or distribution networks;
2. the connection of facilities of distribution companies to the transmission network;
3. changes in the connection of existing facilities and power plants already connected to the electricity networks;
4. the conclusion of connection agreements;
5. the suspension of the connection and power supply to facilities of consumers and the connection of facilities of distribution companies and power plants.

In accordance with Article 54(4) of this Ordinance, the transmission or the respective distribution company is under the obligation to connect any producer of electricity from renewable and alternative sources who satisfies the specific conditions for connection to the network laid down in the Ordinance.

The Ordinance does not define how the necessary costs should be distributed between subsequently connected producers who share the use of upgraded or new power lines.

The Ordinance on regulating the prices of electric power (promulgated: SG No 17 of 2 March 2004) defines how prices for connection to the network are regulated. The prices for connection of producers are individual and include the actual costs incurred for the construction of facilities for connection to the network. If it is necessary to expand and reinforce the transmission or distribution network in order to connect a certain producer (with the exception of renewable energy producers), the price for the connection thereof also includes the costs incurred for such expansion and reinforcement.

(j) Please describe how the costs of connection and technical adaptation are attributed to producers and/or transmission and/or distribution system operators? How are transmission and distribution system operators able to recover these investment costs? Is any modification of these cost bearing rules planned in the future? What changes do you envisage and what results are expected? (There are several options for distributing grid connection costs. Member States are likely to choose one or a combination of these. According to the "deep" connection cost charging the developer of the installation generating electricity from renewable energy sources bears several grid infrastructure related costs (grid connection, grid reinforcement, and extension). Another approach is the "shallow" connection cost charging, meaning that the developer bears only the grid connection cost, but not the costs of reinforcement and extension (this is built into the grid tariffs and paid by the customers). A further variant is when all connection costs are socialised and covered by the grid tariffs.)

The now effective national legislation requires network operators to develop the grid infrastructure in order to achieve reliable and secure functioning of the electricity system as a precondition for the priority development of electricity generation from renewable sources. In accordance with the Energy Act, the owner of the network (respectively, the network operator) is responsible for network development. His activities are licensed and he is under an obligation to make investments in the network development and comply with the indicator for reliability of

electricity supply, which is approved each year by the Minister of Economy, Energy and Tourism (Article 4(1)(4) of the Energy Act). The investment costs necessary for the performance of his activities are subject to approval by the regulator. Thus, the regulator is entitled to recognise the costs related to the reinforcement and extension of the network and to compensate him through the prices.

Connection costs are distributed in accordance with the “shallow" method of cost charging, under which the investor bears only the direct grid connection cost but not the costs of reinforcement and extension of the network (these are built into the tariff for transmission of electricity over the electricity transmission network and are paid by all customers in proportion to their consumption).

(k) Are there rules for sharing the costs between initially and subsequently connected producers? If not, how are the benefits for subsequently connected producers taken into account?

The Ordinance on the conditions and procedure for connection of electricity producers and consumers to the electricity transmission and distribution networks lays down the technical and financial conditions for connection. There is no procedure and specific rules in the Ordinance for sharing the connection costs between users of the network depending on the order in which they have been connected to the network. Accordingly, the benefits for subsequently connected producers are not taken into account.

(l) How will it be ensured that transmission and distribution system operators provide new producers wishing to be connected with the necessary information on costs, a precise timetable for processing their requests and an indicative timetable for their grid connection?

The necessary information on connection costs for new producers of renewable energy, the precise timetable for processing their requests and the indicative timetable for their grid connection can be obtained by investors after filing a request for examining the prospective connection. Facilities are connected to the respective electricity network in compliance with the prescribed conditions and a final connection agreement is concluded between the transmission or the respective distribution company to whose network connection will be established and the investor that has filed a request for connection of the facility.

A study of the prospective connection is carried out after the issue of a design permit. Prior to the preparation of the investment project for construction or reconstruction of the facility or

power plant that is to be connected, a preliminary connection agreement is concluded and, after the approval of the investment project and the issue of a permit for construction of the facility, a final connection agreement is signed. A precise timetable for the execution of the connection works is laid down in the agreements.

The transmission or distribution company constructs the connection facilities at its own expense within the agreed time limits and at the agreed stages and ensure that they are put into operation in accordance with the Spatial Planning Act. Upon request, the person with whom the connection agreement is concluded may undertake to carry out certain construction and installation works related to the connection or the overall construction of the connection facilities with the consent of the transmission or the respective distribution company.

In such cases, the transmission or distribution company exercises supervision in order to ensure that the execution of the construction and installation works is in conformity with the relevant designs and technical specifications and in accordance with the procedure laid down in the connection agreement. Ownership over the constructed connection facilities is transferred for consideration to the transmission or the respective distribution company on the basis of mutually recognised costs.

4.2.7. Electricity network operation (Article 16(2) and Article 16(7) and (8) of Directive 2009/28/EC)

(•) How is the transmission and distribution of electricity from renewable energy sources guaranteed by transmission and distribution system operators? Is priority or guaranteed access ensured?

Under the Energy Act, “transmission” and “distribution” are defined as follows:

- “Electricity transmission and transformation shall be a universal service provided by the electricity system operator”;
- “Electricity distribution shall be a universal service provided by distribution companies, which are owners of the distribution networks within a certain territory and are licensed to carry out electricity distribution within that territory”.

In case of refusal or failure to ensure transmission or distribution, the operator is liable under administrative law by virtue of his licence.

The Energy Act does not provide explicitly for the provision of priority or guaranteed access to producers of electricity from renewable sources. The interpretation of the text, however, leads to the conclusion that such access is granted implicitly to already connected producers since the system operator is under the obligation by virtue of his license to continuously improve and expand the network in order to ensure the transmission of electricity generated to consumers or the market at any time when the resource is available.

In accordance with the definition in the Energy Act, “access” means the right to use the transmission network and/or the distribution networks for electricity transfer against payment of a fee and under the conditions laid down in the relevant ordinances.

Current national legislation stipulates that distribution network operators are responsible for expanding and upgrading of the network. They are required to draft 10-year plans of the possible trends in the generation of electricity from renewable sources and its distribution by zone. Distribution network operators are subject to the same obligation but with 5-year development plans. The construction of renewable electricity generating systems must be coordinated with the development of the networks. Each year, network operators have to determine the capabilities for the connection of new generators by zone. After coordination with the regulator and the MEET, the capacities to be connected are defined.

Access is guaranteed to capacities included in the coordinated list. The Regulator is responsible for overseeing the process.

In case of refusal or failure to ensure access, the operator is liable under administrative law by virtue of his licence.

In addition to the administrative liability of the operator, it is also necessary to introduce a compensation system in the event of failure of the operator to fulfil his obligations. Such clauses have been included in power purchase agreements but this has been done voluntarily, on the initiative of creditor banks, and do not constitute a statutory obligation under the supervision of the SEWRC.

(b) How is it ensured that transmission system operators, when dispatching electricity generating installations give priority to those using renewable energy sources?

Pursuant to the Energy Act, “the electricity system operator controls the distribution of the electric load on the electricity system between power plants in accordance with technical and economic criteria, while ensuring compliance with the concluded power purchase agreements".

The electricity system operator or the operator of the respective distribution network has the right to temporarily suspend or curtail the production of electricity (or the supply of electricity) in the circumstances specified in the Energy Act. These circumstances relate to the maintenance of the proper functioning of the electricity system.

The Energy Act does not explicitly require operators to curtail the production of electricity from renewable sources only as a last resort, after having used all other options. Supervision over the fulfilment of these obligations is exercised on the basis of the licence issued. In addition, commercial contracts provide for compensation for producers of electricity from renewable energy sources in the event of failure of the operator to fulfil his obligations.

The method of calculation of such compensation, however, is not defined in practice.

(c) How are grid- and market-related operational measures taken in order to minimise the curtailment of electricity from renewable energy sources? What kinds of measures are planned and when is implementation expected? (Market and grid design that enable the integration of variable resources could cover measures such as trading closer to real time (changing from day-ahead to intra-day forecasting and rescheduling of generators), aggregation of market areas, ensuring sufficient cross border interconnection capacity and trade, improved cooperation of adjacent system operators, the use of improved communication and control tools, demand-side management and active demand-side participation in the markets (through two-way communication systems – smart metering), increased distributed production and domestic storage (e.g. electric cars) with active management of distribution networks (smart grids).)

As yet, there has been no need nor any cases of curtailment of the production capacity of producers of electricity from renewable energy sources by reason of the secure electricity system management. There have been isolated cases of curtailment of electricity from renewable sources in the north-east of Bulgaria due to capacity limitations and overload of the grid in the region. With the entry of more producers of electricity from renewable sources, however, and due to existing capacity limitations, such problems are likely to occur more frequently. In order to avoid the curtailment of the production from renewable sources, the network operators take the following measures:

- obligatory inclusion of the nominated production capacity of the producer of electricity from renewable sources in the dispatching schedule for production;
- strict compliance with the dispatching schedule in respect of producers of electricity

from renewable sources provided that the security of energy supply is not disrupted;

- bilateral coordination of the time period for preventive maintenance of installations generating energy from renewable sources and network facilities;
- reducing the time period for preventive maintenance and emergency repairs to the technically feasible minimum;
- annual allocation of funds in the investment programme of the network operator for development and reinforcement of the network in areas with high renewable energy potential.

The introduction of the day-ahead market or even the intra-day hour-ahead market approach, active demand-side participation, increased system storage capacities and development of smart grids are being considered. All these measures will minimise the curtailment of electricity from renewable energy sources due to technical reasons.

(d) is the energy regulatory authority informed about these measures? Does it have the competence to monitor and enforce the implementation of these measures?

In the event of restrictions being necessary, the draft ZEVI provides for transmission or distribution network operators to report to the SEWRC annually in cases where the amounts of renewable energy transmitted and distributed have dropped sharply, and on the measures taken to counteract this.

The regulatory authority (SEWRC) has the competence to solve disputes between licensees and, by virtue of its powers, may exercise monitoring.

(e) Are plants generating electricity from renewable energy sources integrated in the electricity market? Could you please describe how? What are their obligations regarding participation in the electricity market?

Power plants generating electricity from renewable energy sources may choose whether to participate in the free electricity market on an equal footing with other participants or take advantage of the feed-in tariffs. Under the feed-in tariff scheme, producers of electricity from renewable sources conclude long-term power purchase agreements for the purchase of the electricity produced at regulated prices and are not responsible for its integration in the market. They do not participate in trading on the free market and are exempted from payment of charges for grid access.

If producers of electricity from renewable sources decide to participate in the electricity market and have supply agreements, the public supplier and, accordingly, end retailers, should purchase the full amount of electricity for which a guarantee has been issued, except for quantities for which the producer has concluded contracts at freely negotiated prices or with which he participates on the balancing market, as well as the quantity of energy produced for his own needs.

(f) What are the rules for charging transmission and distribution tariffs to generators of electricity from renewable energy sources?

Generators of electricity from renewable energy sources that have opted for the feed-in tariff system are exempted from fees for access, transmission and distribution. If they become players on the open market, they are placed on an equal footing with other participants in the market.

4.2.8. Biogas integration into the natural gas network (Article 16(7) and Article 16(9) and (10) of Directive 2009/28/EC)

(•) How is it ensured that the charging of transmission and distribution tariffs does not discriminate against gas from renewable energy sources?

Biogas produced in Bulgaria, mainly by urban waste water treatment plants, is used for own and local needs and is not integrated into the existing natural gas networks. The expansion of biogas production will require that rules for connection of producers to the networks be developed, which will provide for prior laboratory testing and compliance with the relevant technical norms.

The draft Renewable Energy Act provides for the implementation of mechanisms for the promotion of the production and consumption of gas from renewable energy sources.

(b) Has any assessment been carried out on the need to extend the gas network infrastructure to facilitate the integration of gas from renewable sources? What is the result? If not, will there be such an assessment?

No assessment has been carried out yet on the need to extend the gas network infrastructure for the lack of investor appetite. If adequate investor appetite is expressed, the government will commission the preparation of such an assessment.

(c) Are technical rules on network connection and connection tariffs for biogas published? Where are these rules published?

No technical rules and connection tariffs for biogas have been developed yet. If adequate investor appetite is expressed, the government will commission the development of such technical rules and tariffs.

4.2.9. District heating and cooling infrastructure development (Article 16(11) of Directive 2009/28/EC)

(•) Please provide an assessment of the need for new district heating and cooling infrastructure using renewable energy sources and contributing to the 2020 target. Based on this assessment, are there plans to promote such infrastructures in the future? What are the expected contributions of large biomass, solar and geothermal facilities in the district heating and cooling systems?

In the assessments of the Association of District Heating Companies in Bulgaria, by 2020, new installations utilising energy from biomass will be put into operation with a total heating capacity of 99.2 MW. The total heating energy generated by these installations is estimated at 416.6 GWh/year.

No information is available as to whether any district heating company plans to use solar energy or whether any studies have been carried out in this regard.

A large part of the geothermal energy will be used for local heating and a small part – for district heating purposes. Although it is sometimes difficult to distinguish between both types, the new capacities using geothermal sources for district heating required for the achievement of the 2020 target are estimated at 7.5 MW, while the annual production of heating energy is estimated at 25.8 GWh/year.

Heating infrastructure using renewable energy sources (mainly biomass) is constructed in relation to each project. This applies both to new district heating plants and to existing ones in which the use of fossil fuels — gas, coal and petrol — is supplemented by renewable energy sources.

So far, no assessment has been carried out on the need for cooling infrastructure by reason of the insignificant investor interest and outstanding technical issues.

In order to increase the share of renewable energy sources in heating and cooling systems, the following aspects will be key:

- a statutory requirement to use a minimum amount of renewable energy in buildings. This is currently 15 %, which corresponds only to the amount necessary to cover domestic hot water. In the harmonisation process of the new Energy Performance of Buildings Directive, the minimum amount of renewable energy will be increased and include air conditioning. For public buildings this is a mandatory requirement, while for residential buildings appropriate support schemes will be applied to make the investment economically viable.
- The draft ZEVI provides for simplification of planning permission procedures for local and individual heating and cooling systems. In addition, the use of renewable energy for heating and cooling will be promoted through various support schemes:

At present, nine financial aid schemes for these kinds of projects have been published under OP "Regional Development". 237 contracts for a total of BGN 503 million have been signed for repairs, upgrades and energy efficiency measures in public buildings in the educational, social and cultural infrastructure fields. Over 100 buildings have been upgraded because of these projects.

The activities financed are: energy efficiency audits; the introduction of energy efficiency measures, including thermal insulation, replacing windows, local installations and/or connections to heating and gas supply systems; and the installation of facilities based on the use of alternative renewable energy sources.

Under the Indicative Annual Working Programme for 2011, two schemes directly relating to energy efficiency will be published in June 2011 under operation 1.2 "Housing policy", Priority Axis 1, "Sustainable and integrated urban development".

- The use of co-generation systems to heat adjacent buildings are among the measures resulting from the energy efficiency audit of industrial systems with an annual energy consumption of more than 3000 MWh (according to the Energy Efficiency Act)

4.2.10. Biofuels and other bioliquids — sustainability criteria and verification of compliance (Articles 17 to 21 of Directive 2009/28/EC)

(•) How will the sustainability criteria for biofuels and bioliquids be implemented at national level? (Is there legislation planned for implementation? What will be the institutional setup?)

The draft ZEVI incorporates sustainability criteria for biofuels and bioliquids. The Minister of the Environment and Water will be responsible for drafting and implementing mechanisms for reliable and independent audits of the information on the biofuel and bioliquid sustainability criteria submitted by economic operators.

The implementing ordinance of the draft ZEVI will stipulate the national authority responsible for auditing the information regarding compliance with the sustainability criteria. It will formulate the procedures and methods for carrying out audits of the compliance of biofuels and bioliquids with the sustainability criteria, and be responsible for issuing and revoking the sustainability conformity certificates of raw materials, biofuels and bioliquids. The timescale for drafting and adopting the ordinance is 6 months after the adoption of the draft ZEVI.

(b) How will it be ensured that biofuels and bioliquids that are counted towards the national renewable target, towards national renewable energy obligations and/or are eligible for financial support comply with the sustainability criteria set down in Article 17(2) to (5) of Directive 2009/28/EC? (Will there be a national institution/body responsible for monitoring/verifying compliance with the criteria?)

The draft ZEVI will provide for the establishment of a national agency, which will perform the above functions in compliance with the sustainability criteria.

(c) If a national authority/body will monitor the fulfilment of the criteria, does such a national authority/body already exist? If so, please specify. If not, when is it envisaged to be established?

No precise date has been set but the competent authority will be specified in the relevant legislation which is currently being developed for the transposition of Directive 2009/28/EC and Directive 2009/30/EC.

(d) Please provide information on the existence of national law on land zoning and national land register for verifying compliance with Article 17(3) to (5) of Directive 2009/28/EC. How economic operators can access to this information? (Please provide information on the existence of rules and distinction between different land statutes, like biodiversity area, protected area, etc; and on the competent national authority who will monitor this land register and changes in land status.)

The Ministry of the Environment and Waters uses the national land register provided by the Ministry for Agriculture and Food. All protected areas within the meaning of the Protected Areas

Act ('ZZT') are reflected in the map of restituted property on the respective land. The protected zones within the meaning of Article 6 of the Biological Diversity Act will soon be represented in this manner as well.

The competent national authority monitoring the land register and changes in land status is the Ministry for Agriculture and Food, in particular its regional entities.

(e) As far as protected areas are concerned, please provide information under which national, European or international protection regime they are classified.

A national ecological network has been set up in Bulgaria, which includes:

- protected zones which may include protected areas;
- protected areas which do not fall within protected zones.

The categories of protected areas within the meaning of the Protected Areas Act are as follows:

- reserves;
- national parks;
- areas of outstanding natural beauty;
- kept reserves;
- natural parks;
- protected localities.

Protected areas are designated for the maintenance or restoration, at a favourable conservation status, of the natural habitats included in them and the species' habitats in their natural range. Within the meaning of the Biological Diversity Act ('ZBR'), protected areas fall into two types: areas of conservation of wild birds and areas of conservation of natural habitats and wild flora and fauna.

The Biological Diversity Act is based on 2 EU Directives in the environmental field and, in particular, the biodiversity conservation field: Council Directive 92/43/EC on the conservation of natural habitats and of wild fauna and flora and Directive 2009/147/EC on the conservation of wild birds. A number of international conventions have also been used in the development of national legislation.

(f) What is the procedure for changing the status of land? Who monitors and reports at national level on land status changes? How often is the land zoning register updated (monthly, annually, bi-annually, etc.)?

The procedure for reassigning agricultural land to non-agricultural uses is carried out in accordance with Chapter V of the Agricultural Land Protection Act (promulgated: SG No 35 of 24 April 1996; amended: SG No 103/2009) and Chapter V of the Rules for implementing the Agricultural Land Protection Act (adopted by Decree No 240 of the Council of Ministers of 24 September 1996; promulgated: SG No 84 of 4 October 1996; amended: SG No 62/2009) by the Agricultural Land Committee at the Ministry for Agriculture and Food.

Monitoring and reporting at national level is carried out by the Minister for Agriculture and Food.

Changes in the status of forest stock land are carried out in accordance with the Forests Act (promulgated: SG No 125/1994; amended: SG No 103/2009).

Pursuant to Article 2(3) of the Agricultural Land Protection Act, conversion to another type of land use is only allowed as an exception — provided that a proven need exists — and it must follow the procedure and satisfy the conditions of the Agricultural Land Protection Act and its implementing rules.

The procedure for changing the status of agricultural land starts with the filing of an application to the mayor of the municipality where the land is located, requesting a detailed master plan to be commissioned for the change. The following documents are included with the application:

- a document of title;
- a certificate of succession (if necessary);
- a drawing from the Agriculture and Forests Municipal Office (if the land is agricultural land);
- a layout drawing or cadastral map (if the land is located in a settlement that does not have a plan);
- letters of agreement from the electricity distribution company and water supply company;
- a report from the Municipal Road Directorate and Road Transport Control – Traffic

Police if the land is adjacent to a road of the national road network;

- a proposal for modification of the plan in accordance with Article 134(2) of the Spatial Planning Act;
- terms of reference for the design, reflecting the investor intentions, in accordance with Article 124(7) and Article 125 of the Spatial Planning Act;
- a list of the names, addresses and, if possible, telephone numbers of all interested owners;
- an opinion from the Regional Inspectorate for the Environment and Waters;
- a receipt demonstrating the payment of the fee.

Usually, it takes one month before an order is issued by the mayor commissioning the detailed master plan.

The case-file is submitted to the Agriculture and Forests Regional Directorate for designating and approving construction sites, linear facilities routes and sites and including the real property within urban areas and settlements in accordance with Article 30 of the Rules for implementing the Agricultural Land Protection Act if the land does not exceed 5 ha (for land of over 5 ha, the case-file is submitted to the Agricultural Land Committee at the Ministry for Agriculture and Food).

Two case-files are submitted in respect of each site — one original and one copy.

The case-file submitted to the Regional Directorate should include:

- a free-text proposal by the owner for approval of the site or route for construction of facilities on agricultural land;
- an up-to-date drawing of the land;
- a certificate of land irrigation;
- a certificate of land-use category;
- an opinion from the Regional Public Health Protection and Control Inspectorate;
- an opinion from the Regional Inspectorate for the Environment and Waters;
- a draft detailed master plan (‘DMP’) and explanatory notes;
- a report/order, commissioning the DMP for the property;

- a decision on the drawing up of the DMP;
- a document of title;
- a power of attorney where the person submitting the documents is not the owner;
- a certificate of current status where the owner is a legal entity;
- a certificate under Article 17 of the Black Sea Coast Act if the land is adjacent to the coastline.

After the Committee under Article 17 approves the site, the case-file is returned to the municipality so that the mayor can issue an order approving the DMP. The case-file with all accompanying documents is once again submitted to the Agriculture and Forests Regional Directorate for consideration by a second committee and authorisation of the changed status of the agricultural land by the Committee under Article 17. The due fees for changing the status of land should have been paid to obtain the relevant documents. Within 7 days of the entry into force of the decision reassigning agricultural land to non-agricultural uses, the relevant committee forwards a copy thereof to the respective cadastre office where the land is located for making the respective changes in the cadastre. Where, by the decision changing the status, new real estates are formed on the land in accordance with Article 24(3) of the Cadastre and Land Register Act, the cadastre office gives identifiers to the newly formed estates (Article 25 of the Agricultural Land Protection Act in conjunction with Article 52(2) of the Cadastre and Land Register Act). After making changes to the cadastre, upon request of the owner, the land boundaries are marked with permanent marking on the basis of the cadastral data from the respective cadastre office where the land is located (Article 26 of the Agricultural Land Protection Act and Article 42(2) of the Rules for implementing the Agricultural Land Protection Act).

(g) How is compliance with good agro-environmental practices and other cross-compliance requirements (required by Article 17(6) of Directive 2009/28/EC) ensured and verified at national level?

Producers of feedstock for biofuels and bioliquids should maintain the entire territory cultivated for crop production in good condition, complying with:

- the conditions for maintaining the land in good agricultural and environmental condition approved in accordance with the Support for Farmers Act;
- the minimum requirements for fertilisation and use of plant protection products pursuant to Annex 5 and the code of good agricultural practice approved in

accordance with Article 6(1) of Ordinance No 2 of 2007 on the protection of waters against pollution caused by nitrates from agricultural sources;

- the requirements under Article 6(1) and (2) of the Agricultural Land Protection Act and Article 14(1) of the Plant Protection Act;
- the requirements under Article 6(1)(4) of the Agricultural Land Protection Act.
- If high nature-value land, included in the list of physical blocks of agricultural land with a high nature value pursuant to the annex to Order No RD 09-59/02.02.2010 of the Minister for Agriculture and Food, is used for the production of feedstock, the following should be implemented:
- the requirements under Article 46 of the Biological Diversity Act and Article 64(3) of the Hunting and Game Preservation Act;
- the requirements for maintaining grassland with a high nature value in good condition under Articles 41 and 42 of Ordinance No 11 of 6 April 2009 on the conditions and procedure for implementation of Measure 214 “Agri-environmental Payments” of the Rural Development Programme 2007-2013.

(h) Do you intend to help develop voluntary ‘certification’ scheme(s) for biofuel and bioliquid sustainability as described in the second subparagraph of Article 18(4) of Directive 2009/28/EC? If so, how?

This will be laid down in the new Renewable Energy Act along with the setting of binding targets for traders in fuels and in the Clean Ambient Air Act in connection with the transposition of Directive 2009/30/EC with regard to the petrol, diesel fuel and gas oil specifications and the implementation of a mechanism for monitoring and reduction of the levels of emissions of greenhouse gases. The scheme may be based on the schemes laid down in the Energy Efficiency Act for setting individual energy savings targets, issuing certificates for effective energy savings and planned introduction of “white” certificates for energy efficiency measures.

The Ministry of the Environment and Waters will cooperate for the calculation of the impact of greenhouse gas emission savings from the use of biofuels and bioliquids in accordance with Article 19(1) of the Directive.

4.3. Support schemes to promote the use of energy from renewable resources in electricity applied by the Member State or a group of Member States

Regulation

No regulatory framework has been established yet, laying down any targets and obligations.

(a) What is the legal basis for this obligation/target?

(b) Are there any technology-specific targets?

(c) What are the concrete obligations/targets per year (per technology)?

(d) Who has to fulfil the obligation?

(e) What is the consequence of non-fulfilment?

(f) Is there any mechanism to supervise fulfilment?

(g) Is there any mechanism to modify obligations/targets?

Financial support

Feed-in tariffs

(a) What is the name and a short description of the scheme?

Financial support for electricity produced from renewable energy sources is provided in the form of “feed-in tariffs for electricity produced from renewable energy sources”.

The Renewable and Alternative Energy Sources and Biofuels Act lays down feed-in tariffs for electricity produced from renewable energy sources, except for energy produced by hydropower plants of over 10 MW installed capacity and biomass-fired power plants of over 5 MW installed capacity. Feed-in tariff rates [in BGN/MWh] amount to 80 per cent of the average selling price of the Public Supplier or Public Retailers in the previous calendar year plus a surcharge determined by the State Energy and Water Regulatory Commission (‘SEWRC’) in accordance with criteria relating to the technology and type of primary energy source. The surcharge may not be less than 95 per cent or higher than 105 per cent of its amount in the previous calendar year. Each year, the regulator draws up a document setting the feed-in tariffs according to technology and some technical parameters.

(b) Is it a voluntary or obligatory scheme?

Participation in the scheme is voluntary. All producers of electricity from renewable sources prefer to use it, since feed-in tariff rates are higher than the market ones. If a producer chooses not to participate in the scheme, he may participate on an equal footing (without enjoying any privileges) with other producers in the free electricity market.

(c) Who manages the scheme? (Implementing body, monitoring authority)

The scheme is implemented and controlled by the State Energy and Water Regulatory Commission.

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?

The costs related to this scheme are not covered by the budget. They are built into the price for electricity transmission and, in this way, are paid by all consumers in proportion to their consumption.

(e) How is long-term security and reliability addressed by the scheme?

Under the Renewable and Alternative Energy Sources and Biofuels Act, feed-in tariff rates are applied for a period of 25 years in respect of electricity produced from solar and geothermal sources and for a period of 15 years in respect of electricity produced from hydropower plants up to 10 MW and other renewable sources. In addition, long-term security is ensured by the provisions of the Act, in accordance with which the price of electricity may not be changed throughout the entire duration of the electricity purchase agreement.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?

Not later than 31 March each year, the regulator (SEWRC) sets feed-in tariffs. Adjustments fall within the competence of the SEWRC. Gradually, the scope of the scheme has been broadened, covering all main renewable energy sources for electricity production – solar energy, geothermal energy, biomass, wind and hydropower. In addition, the period of application of feed-in tariffs for solar and geothermal installations has been extended from 12 years to 15/25 years. Finally, feed-in tariffs are regularly updated each year.

(g) Does support differ according to technology?

Support differs according to the type of renewable sources and specific technology (cf. the special questions about feed-in tariffs below).

(h) What are the expected impacts in terms of energy production?

No such calculations have been made because no targets and obligations have been laid down in the scheme, but the results show a really strong interest in constructing wind and solar systems.

Taking into account the stagnation in infrastructure construction (power lines, substations, accumulating facilities, back-up facilities, management systems, etc.), the forecast for 2020 is the construction of 1200-1300 MW wind turbines and 300-320 MW solar systems.

In order to assess the costs of promoting renewable energy (through feed-in tariffs), the following boundary conditions are assumed:

- The average cost of electricity produced by the Bulgarian generating system is EUR 35/MWh
- The cost of CO_2 emissions will gradually increase from EUR 15/t in 2010 to EUR 30/t in 2020
- The feed-in tariffs for electricity from hydropower stations and biomass will remain constant throughout the period.
- The feed-in tariffs for energy from wind turbines will fall to 90 % of the 2011 tariffs
- The feed-in tariffs for electricity from photovoltaic systems will fall by up to 65 % of the 2011 tariffs
- CO_2 emissions for the generating system will fall from 0.55 t/MWh to 0.46 t/MWh

Under these conditions, the costs of feed-in tariffs to 2020 will be determined by the following table, which covers only the most significant technologies:

Costs to the consumer of supporting renewable energy for the period 2010-2020 and the energy generated as a result

Technology	GWh	Costs of support[10], k€
Water power plants up to 1 MW	1321	75749

[10] The costs of support for energy generated from water powered plants is calculated as the difference in price compared with coal-fired plants paying CO_2 quotas and the feed-in tariff for the respective technology

Water power plants 1 to 10 MW	6392	141941
Solar systems	2916	887794
Wind turbines	21564	1052850
Solid biomass	3611	315624
Biogas	2360	38490
Total	35803	2042000

The table does not include the costs of integrating producers to the electricity grid – enlargement, reservation, accumulation and management, which can be put at around 10-20 % of the investments in renewable energy, depending on the extent of generation.

(i) Is support conditional on meeting energy efficiency criteria?

Support for renewable energy projects is not conditional on the efficiency of installations. Such criteria have been set in place only in respect of the support scheme for combined heat and power generation, which does not take into account the type of primary fuel used – fossil fuels or renewable sources.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

It is an existing measure laid down in the Renewable and Alternative Energy Sources and Biofuels Act.

The now effective legislative act is SEWRC Decision No TS-018 of 31 March 2010 on setting preferential prices for the sale of electricity produced from renewable energy sources and by hydropower plants of up to 10 MW installed capacity.

(k) Is this a planned scheme? When would it be operational?

The scheme is operational.

After the transposition of Directive 2009/28/EC into the Renewable Energy Act, the preferential prices for the purchase of energy will be laid down as a measure once again. It is envisaged that feed-in tariffs for electricity produced from renewable sources will not change for the period of validity of purchase agreements. Each year, the State Energy and Water Regulatory Commission sets preferential prices for the purchase of electricity, heating and cooling produced from renewable energy sources, except for energy produced by hydropower plants of over 10 MW installed capacity.

(l) What start and end dates (duration) are set for the whole scheme?

Pursuant to the now effective ZVAEIB, the scheme is applicable to all installations that have been put into operation by 31 December 2015.

The period of validity of agreements is 25 years with regard to electricity produced from geothermal and solar energy and 15 years in respect of electricity produced by hydropower plants of up to 10 MW installed capacity and in respect of electricity produced from other types of renewable energy sources. The time limits for obligatory purchase start to run as follows:

- from the date the plant becomes operational, and in the case of plants becoming operational after 31 December 2015, the period will be reduced by the time from that date to the date the plant becomes operational

.(m) Are there maximum or minimum sizes of system which are eligible?

In respect of electricity produced by wind and solar systems, different prices are applied according to capacity, while for geothermal energy, the price is not conditional upon capacity.

In respect of electricity produced from biomass, the maximum is 5 MW of installed capacity.

Hydropower plants of up to 10 MW installed capacity are eligible.

(n) Is it possible for the same project to be supported by more than one support measure? What measures can be cumulated?

The feed-in tariff system is the only financial mechanism supporting electricity production from renewable sources, which has been laid down in the energy legislation. It is possible for investors to take advantage of other financial support schemes implemented by other funds (which are not provided for in the national legislation). There are no restrictions with regard to this.

The preferences offered by the Investment Promotion Act (21) and its implementing regulations are the same for all investors of a certain class and there is no special procedure applicable only to investments in renewable sources. The measures proposed for the promotion of investments aim at creating a more favourable business environment and investment climate, as follows:

- facilitated administrative services;
- construction of connection facilities financed by the national budget – electricity, roads, gas, water, sewerage, railways, communications, etc.

(o) Are there regional/local schemes? If so, please detail using the same criteria.

There are no regional or local schemes other than the national ones.

(p) What is granted by the scheme? (subsidies, capital grants, low interest loans, tax exemption or reduction, tax refunds)

Feed-in tariffs can be considered as a kind of subsidy, which in practice is paid for by the end user.

(q) Who can benefit from this scheme? Is it specified for certain technology(ies)?

Producers of renewable energy, other than energy from hydropower plants, with an installed capacity of more than 10 MW.

(r) Are applications continuously received and granted or are there periodical calls? If periodical, could you please describe the frequency and conditions?

The feed-in tariff is valid for the whole duration of the agreement and new calls or applications are not required.

European Regional Development Fund

(a) What is the name and a short description of the scheme?

The European Regional Development Fund ('ERDF') provides support for renewable energy projects. Around EUR 66.5 million have been earmarked for renewable energy projects for the programming period 2007-2013 (representing 2.1 % of the total ERDF budget allocated for the country). The ERDF finances mainly public (non-profit) organisations. Grants to public organisations amount up to 100 %, while those to private organisations – from 50 to 70 % according to the size of the organisation. Eligible for financing are only renewable energy installations not connected to the grid.

The Fund provides financial support for renewable energy projects under two programmes:

- the Operational Programme "Regional Development" managed by the Ministry for Regional Development and Public Works ('MRDPW');
- the Operational Programme "Development of the Competitiveness" managed by the Ministry of Economy, Energy and Tourism ('MEET').

The Operational Programme "Regional Development" finances public organisations only: municipalities and associations of municipalities, municipal and state-owned companies, public transport companies, health establishments, social and educational institutions, local, regional and national tourist organisations, regional administrations, etc.

Projects promoting the wider use of renewable energy for heating purposes in buildings and transport and the replacement of electricity and natural gas are eligible for financing.

The Operational Programme “Development of the Competitiveness” finances small and medium-sized enterprises and, to a limited extent, large enterprises. Its activities include pre-feasibility studies, technical plans, renovation of buildings with the introduction of renewable energy technologies, combined heat and power generation from renewable sources, etc.

(b) Is it a voluntary or obligatory scheme?

Participation in the scheme is voluntary. Persons wishing to take advantage of this scheme need to file an application for financing.

(c) Who manages the scheme? (Implementing body, monitoring authority)

The scheme is managed by the ministries responsible for implementing the programmes, namely the MEET and MRDPW.

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?

A large proportion of the funding necessary for the implementation of the scheme comes from the EU. The State ensures co-financing for all approved projects.

(e) How is long-term security and reliability addressed by the scheme?

The programming period is relatively long, 2007-2013, and the activities financed comply with the sustainability requirements.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?

The scheme is periodically revised. Feedback is provided by the managing authorities: the MEET, responsible for the “Competitiveness” Programme, and the MRDPW, responsible for the “Regional Development” Programme. Each year, the feedback provided is included in the annual work programme of the respective operational programme.

(g) Does support differ according to technology?

In relative terms, support does not differ according to technology but, in absolute terms, it may differ.

(h) What are the expected impacts in terms of energy production?

Impact indicators have been laid down in the programmes. Impact depends on the level of absorption of funds and the technology selected.

No such forecasts have been made as yet.

The indicator for OP "Development of the Competitiveness of the Bulgarian Economy" is that 10 % of the energy consumed by supported enterprises will be from renewable sources by the end of the programme period.

The following indicators have been set for OP "Regional Development":

- BG161PO001/1.1-09/2010 "Support for the implementation of energy efficiency measures in municipal educational infrastructure in urban agglomerations":

  - energy savings: 57 467.352 MWh

  - reductions in greenhouse gas emissions (CO_2 and equivalent): 22.482 kt/annum on average

- BG161PO001/4.1-03/2010 "Support for the implementation of energy efficiency measures in municipal educational infrastructure of 178 small municipalities"

  - energy savings: 28 313.263 MWh

  - reductions in greenhouse gas emissions (CO_2 and equivalent): 2.851 kt/annum on average

- The following indicator values have been set at programme level:

Indicator	Interim value 2009 kt	Target value 2015 kt
Reductions in greenhouse gas emissions (CO_2 and equivalent)	21	56
Energy savings from the refurbishment of buildings	44 400	119 000

Based on the indicator and the realistic number of supported projects, the electricity generated due to the schemes is expected to reach 10 GWh per annum.

(i) Is support conditional on meeting energy efficiency criteria?

By definition, support for renewable energy sources is not conditional on the efficiency of installations but efficiency will presumably be an important criterion in the selection of projects.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

It is an existing measure.

(k) Is this a planned scheme? When would it be operational?

The scheme is operational.

(l) What start and end dates (duration) are set for the whole scheme?

The current programming period of the ERDF is 2007-2013. Similar financial support is expected to be available for the next programming period as well.

The scheme under the Operational Programme "Competitiveness" is expected to start at the end of 2010.

(m) Are there maximum or minimum sizes of system which are eligible?

There are minimum and maximum sizes. Targets for the use of energy from renewable sources have been set for small and medium-sized enterprises which receive financing under the Programme "Development of the Competitiveness of the Bulgarian Economy".

(n) Is it possible for the same project to be supported by more than one support measure? What measures can be cumulated?

It is possible for investors to take advantage of other financial support schemes.

(o) Are there regional/local schemes? If so, please detail using the same criteria.

There are no regional or local schemes other than the national one.

Joint Implementation Projects

(a) What is the name and a short description of the scheme?

The Kyoto Protocol provides for three market-based mechanisms known as the "Kyoto Protocol mechanisms" or "flexibility mechanisms". These are the joint implementation (JI), clean development and emissions trading (ET) mechanisms. The JI and ET mechanisms are important for our country and it should be noted that activities under the second mechanism have started late and still face certain problems. Bulgaria will not take part in the clean development mechanism, since only developed and developing countries cooperate under it.

The joint implementation of investment projects constitutes one of the three flexibility mechanisms, as set out in Article 6 of the Kyoto Protocol, intended to assist the countries (the

countries included in Annex I) in achieving compliance with their binding greenhouse gas emission targets and their reduction commitments. Any country included in Annex I may invest in projects aimed at reducing emissions in any other such country as an alternative to reducing its own emissions. In this way, any country can reduce the costs of achieving compliance with its own commitments under the Kyoto Protocol through investments in greenhouse gas emission reductions in another country included in Annex I, where such reductions require less costs, and then use the emission reduction credit for the purposes of its own commitments.

The process of obtaining credits for the joint implementation of projects is a complex one. For emission reductions, credits are granted, known as "Emission Reduction Units" ('ERUs'), where one such unit represents the reduction of emissions equal to one tonne of CO_2-equivalent. Any emission reduction units ('ERUs') are subtracted from the pool of assigned amount units ("AAUs") of the host State of the project. Each country included in Annex I has a pre-established quantity of AAUs calculated on the basis of its 1990 emission levels. With the requirement that JI credits be subtracted from the pool of AAUs of the host State of the project, the Kyoto Protocol guarantees that the total amount of emission credits between the Parties included in Annex I will remain unchanged during the first commitment period of the Kyoto Protocol from 2008 to 2012.

The implementation of projects under the JI mechanism follows the steps and stages of realisation, clearly set out in the Kyoto Protocol.

(b) Is it a voluntary or obligatory scheme?

Participation in the scheme is voluntary. Persons wishing to participate need to file an application in accordance with the "Instruction for approval of projects under the JI mechanism procedure".

(c) Who manages the scheme? (Implementing body, monitoring authority)

The Steering Committee responsible for evaluating JI projects is an advisory interdepartmental body set up for the purpose of assisting the Minister of the Environment and Waters in implementing the procedures for approval of projects under the joint implementation mechanism. The Directorate for Climate Change Policy at the Ministry of the Environment and Waters is responsible for the operational management and coordination of the practical implementation of the Instruction.

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?

The financial costs related to the implementation of this scheme are covered mainly by investors.

As noted above, emission reduction units are taken from the pool of assigned amount units of the host State, calculated on the basis of its 1990 emission levels, and the host State is required to reduce its assigned amounts by the respective quantity of ERUs. This is implemented in practice by the Minister of the Environment and Waters, who records the emission reduction units generated on the basis of the report of the verification body in the national register and writes out an order for their issue and transfer into the account specified by the investor. The administrator of the national register in which the greenhouse gas emission allowances issued, held, transferred and withdrawn are reported issues the verified amount of emission reduction units by subtracting the relevant number of units from the amounts assigned to the Republic of Bulgaria under the Kyoto Protocol and registers the transfer of emission reduction units.

(e) How is long-term security and reliability addressed by the scheme?

The scheme is implemented in pursuance of international treaties, memoranda and agreements.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?

The scheme is periodically revised.

(g) Does support differ according to technology?

Support overall differs according to technology and depends on the specificity of the project.

(h) What are the expected impacts in terms of energy production?

Emission reduction units are taken from the pool of assigned amount units of the host State, calculated on the basis of its 1990 emission levels. In the approved plan for allocation of allowances for 2007, these reserve units for the development of joint implementation projects amount to 3 200 000 tonnes of • • $_2$. The list of approved joint implementation projects on the website of the MoEW indicates the following data: up to 2008 – 3 486 000 tonnes of • • $_2$-equivalent, 2008-2012 – 10 328 000 tonnes of • • $_2$-equivalent or a total of 13 814 000 tonnes of • • $_2$-equivalent. No assessment can be made, however, of the impacts in terms of energy production, since projects differ and include gasification, cogeneration, renewable energy sources and energy efficiency.

(i) Is support conditional on meeting energy efficiency criteria?

By definition, support for renewable energy technologies is not conditional on the efficiency of installations but efficiency will presumably be an important criterion in the selection of projects.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

It is an existing measure – the Environmental Protection Act ('ZOOS').

(k) Is this a planned scheme? When would it be operational?

The scheme is operational.

(l) What start and end dates (duration) are set for the whole scheme?

Under the Kyoto Protocol, the end date set for the scheme is 2012.

(m) Are there maximum or minimum sizes of system which are eligible?

There are no minimum or maximum sizes. It is important that the project should satisfy the conditions for the issue of a Letter of Approval by the MoEW.

(n) Is it possible for the same project to be supported by more than one support measure? What measures can be cumulated?

Investors may be supported by more than one support measure.

(o) Are there regional/local schemes? If so, please detail using the same criteria.

There are no regional or local schemes other than the national one.

Financial support for the construction of installations using renewable sources is limited and is provided along several lines: under EU operational programmes, in particular the Operational Programmes "Competitiveness" and "Regional Development" and the Rural Development Programme, as well as under the special credit facilities of the EBRD, the EIB and the Enterprise for the Management of Environmental Protection Activities.

The Energy Efficiency Fund also has limited capacity to support renewable energy projects, provided that these are part of larger energy efficiency projects.

Specific questions for tradable certificates

Pursuant to the Renewable and Alternative Energy Sources and Biofuels Act ('ZVAEIB'), the rules introducing a market mechanism (tradable green certificates) in order to promote the

production of electricity and heating from renewable energy sources should be laid down in a special act. To this end, by 31 December 2011, the Minister of Economy, Energy and Tourism must draw up this draft act introducing a market mechanism for the promotion of the production of electricity and heating from renewable energy sources. Producers using renewable energy sources, who have effective power purchase agreements on the date of adoption of the Act, are free to decide whether to use that market mechanism or the feed-in tariffs system.

No specific steps with regard to the tradable green certificate system have been taken so far.

(a) Is there an obliged share of electricity produced from renewable sources in the total supply?

(b) Who has the obligation?

(c) Are there technology-specific bands?

(d) Which technologies are covered by the scheme?

(e) Is international trade in certificates allowed? What are the conditions?

(f) Is there a floor bottom price?

(g) Is there a penalty for non-fulfilment?

(h) What is the average price for certificates? Is it made public? Where?

(i) What is the trading scheme for certificates?

(j) How long can a plant participate in the scheme?

Specific questions for feed-in fixed tariffs:

(a) What are the conditions to get the fixed tariff?

All installations complying with the technical criteria, which are connected to the grid, may choose whether to apply the fixed tariff or to participate in trading on the free market.

(b) Is there a cap on the total volume of electricity produced per year or of installed capacity that is entitled to the tariff?

There is no cap on the total volume of electricity produced.

The cap of installed capacity is 10 MW for hydropower plants and 5 MW for biomass-fired power plants. In addition, tariff levels differ according to the capacity of the installation. There is no cap on the electricity produced from wind, solar or geothermal sources.

(c) Is it a technology specific scheme? What are the tariff levels for each?

The price depends on the type of renewable source and the size of the system. Each year, the SEWRC sets the feed-in tariffs for energy from renewable sources. As of 31 March 2011, the prices were as follows:

RS types	Feed-in tariff rates for 2011
WPPs with up to 2 250 work hours and of 800 kW or more installed capacity	188.29
WPPs with over 2 250 work hours and of 800 kW or more installed capacity	172.95
WPPs of less than 800 kW installed capacity and asynchronous cage rotor generator	148.58
PVPPs of up to 5 kWp installed capacity	760.48
PVPPs of over 5 kWp installed capacity	699.11
PPs of up to 5 MW installed capacity using forestry waste, etc.	263.23
Combined-cycle PPs of up to 5 MW installed capacity using forestry waste, etc.,	298.84
PPs of up to 5 MW installed capacity using agricultural waste crops	167.53
PPs of up to 5 MW using energy crops	186.48
PPs of up to 150 kW installed capacity indirectly using biomass from vegetable and animal substances	378.04
PPs of 150 kW to 500 kW installed capacity indirectly using biomass from vegetable and animal substances	344.29
PPs of 500 kW to 5 MW installed capacity indirectly using biomass from vegetable and animal substances	271.96
PPs of up to 150 kW installed capacity indirectly using energy from municipal waste	265.91
PPs of 150 kW to 500 kW installed capacity indirectly using energy from municipal waste	255.98
PPs of 500 kW to 5 MW installed capacity indirectly using energy from	246.05

municipal waste	
PPs of up to 150 kW installed capacity indirectly using energy from municipal sewage sludge	150.39
PPs of 150 kW to 500 kW installed capacity indirectly using energy from municipal sewage sludge	136.85
PPs of 500 kW to 5 MW installed capacity indirectly using energy from municipal sewage sludge	120.60
PPs of more than 5 MW installed capacity directly using energy from biomass obtained from fellings, residues from fellings, etc.	218.60
HPPs of less than 10 MW installed capacity	112.48
Micro HPPs of up to 200 kW installed capacity	**222.90**
Low-pressure run-of-river HPPs, diversion HPPs, tailwater HPPs and diversion HPPs with an annual compensating basin and a net head of up to 30 metres and an installed capacity of 200 kW to 10 000 kW	**213.09**
Medium-pressure diversion HPPs, tailwater HPPs and diversion HPPs with an annual compensating basin and a net head of 30-100 metres and an installed capacity of 200 kW to 10 000 kW	**178.68**
High-pressure diversion HPPs, tailwater HPPs and diversion HPPs with an annual compensating basin and a net head of over 100 metres and an installed capacity of 200 kW to 10 000 kW	**171.18**
Tunnel diversions with an annual compensating basin and installed capacity of up to 10 000 kW	**253.48**
Micro HPP with pumps	**112.48**

(d) Are there other criteria differentiating tariffs?

There are no other criteria besides those indicated so far.

(e) For how long is the fixed tariff guaranteed?

The validity periods of feed-in tariffs guaranteed by law are as follows:

- 25 years for electricity produced from solar and geothermal sources;
- 15 years for electricity produced by wind and hydropower plants of up to 10 MW installed capacity and from biomass (solid, liquid and gaseous);

- for the duration of the power purchase agreement if the installation is put into operation before December 2015.

(f) Is there any tariff adjustment foreseen in the scheme?

Adjustments are foreseen each year.

Specific questions for feed-in premiums:

(a) What are the conditions to get the premium?

(b) Is there a cap on the total volume of electricity produced per year or of installed capacity that is entitled to the premium?

(c) Is it an alternative to fixed tariff?

(d) Is it a technology-specific scheme? What are the premium levels for each?

(e) Is there a floor and/or a cap for the premium? Please specify.

(f) For how long is the premium price guaranteed?

(g) Is any tariff adjustment foreseen in the scheme?

Specific questions for tendering:

No such scheme has been adopted yet. It may be introduced after spatial planning maps for the development of renewable sources are drawn up. For the time being, it is impossible to provide answers to the specific questions below; it can only be stated that this process should be consistent with the network development plans.

(a) What is the frequency and size of the tenders?

(b) Which technologies are specified?

(c) Is it integrated with grid development?

4.4. Support schemes to promote the use of energy from renewable resources in heating and cooling applied by the Member State or a group of Member States

Regulation

Obligations related to the use of renewable sources to produce energy are defined in Article 15(2)(1) of the Energy Efficiency Act, which states that any investment project for a new building with a total floor coverage of over 1000 m^2. must comply with the possibilities of using decentralised systems for the use of renewable energy. This requirement is also in the draft ZEVI.

(a) What is the legal basis for this obligation/target?

Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services

(b) Are there any technology-specific targets?

The obligation relates to the implementation of any of the following technologies:

1. decentralised renewable energy production and consumption systems;

2. co-generation plants;

3. central or local heating and cooling systems;

4. thermopumps

(c) What are the concrete obligations/targets per year (per technology)?

There are no concrete targets per year

(d) Who has to fulfil the obligation?

The building investor

(e) What is the consequence of non-fulfilment?

The administrative sanctions under the Energy Efficiency Act provide for:

- a fine of BGN 1000 to 10 000 or a penalty payment of BGN 5 000 to 50 000 for investors who fail to meet their obligation to certify a building project;

- a fine of BGN 500 to 1 500 or a penalty payment of BGN 1 000 to 10 000 for any person failing to meet any other obligations under this Act.

(f) Is there any mechanism to supervise fulfilment?

Yes, the Energy Efficiency Agency is the responsible authority under the Energy Efficiency Act

(g) Is there any mechanism to modify obligations/targets?

By amending the Energy Efficiency Act

Financial support

(a) What is the name and a short description of the scheme?

Financial support for investments in installations using renewable sources for heating and cooling is provided under the following funds and programmes:

- the European Regional Development Fund ('ERDF'), which provides support for renewable energy projects, including for heating and cooling;
- the Energy Efficiency Fund finances investments in energy efficiency and renewable energy;
- the Energy Efficiency and Renewable Energy Credit Line ('EERECL');
- the Energy Efficiency Facility ('EEF') of the European Investment Bank and the Kozloduy International Decommissioning Support Fund ('KIDS Fund').

(b) Is it a voluntary or obligatory scheme?

Participation in the scheme is voluntary. Persons wishing to take advantage of this scheme need to file an application for financing.

(c) Who manages the scheme? (Implementing body, monitoring authority)

- the European Regional Development Fund – financial resources for renewable energy projects are managed by the MEET and MRDPW;
- the Energy Efficiency Fund – financial resources are managed by • General Meeting of the Sponsors — the Government of Austria, the Government of Bulgaria and sponsor companies — which elects a Management Board. The executive management is carried out by a consulting company;
- the Energy Efficiency and Renewable Energy Credit Line – financial resources are managed by the European Bank for Reconstruction and Development and the KIDS Fund;
- the Energy Efficiency Facility – financial resources are managed by the European Investment Bank and the KIDS Fund.

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?

Only a small part of these costs is covered by the budget. Funding is provided mainly by the European Union, the World Bank, the European Bank for Reconstruction and Development and the European Investment Bank.

(e) How is long-term security and reliability addressed by the scheme?

Long-term agreements are concluded (for the entire period of financing) with the respective fund or programme.

(f) Is the scheme periodically revised? What kind of feedback or adjustment mechanism exists? How has the scheme been optimised so far?

The managing authorities can periodically revise the rules.

(g) Does support differ according to technology?

In relative terms, support does not differ according to technology but, in absolute terms, it may differ.

(h) What are the expected impacts in terms of energy production?

No such assessment can be made. Impact depends on the level of absorption of funds and the technology selected.

(i) Is support conditional on meeting energy efficiency criteria?

Some of the funds set down energy efficiency requirements.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

The above financing programmes exist. The Energy Efficiency Fund has been set up pursuant to the Energy Efficiency Act, while the ERDF is based on an agreement with the EU.

(k) Is this a planned scheme? When would it be operational?

The scheme is operational.

(l) What start and end dates (duration) are set for the whole scheme?

The duration of the current programming period of the ERDF is 2007-2013. No end dates are set for the other schemes.

(m) Are there maximum or minimum sizes of system which are eligible?

In most cases, there is a maximum and minimum size of the investment and not of the system.

(n) Is it possible for the same project to be supported by more than one support measure? What measures can be cumulated?

Yes, it is possible.

(o) Are there regional/local schemes? If so, please detail using the same criteria.

Yes, Municipal Energy Efficiency Programmes.

The Energy Efficiency Act obliges local authorities to draw up energy efficiency plans and to fulfil long- and short-term energy efficiency programmes. The funding has to be earmarked from the local authority budgets. Measures include the use of renewable technologies for heating and cooling. Municipal programmes can be updated on an annual basis as the conditions and capacity of the municipality allow. They are required to report to the Energy Efficiency Agency annually on the measures taken to save energy and the amounts of energy saved.

Specific questions

(a) How are the support schemes for electricity from renewable energy sources adapted to encourage the use of CHP from renewable energy sources?

The legislative and regulatory framework supports the use of renewable energy sources for electricity generation and, in addition, supports combined heat and power generation without taking into account the types of energy sources used – fossil fuels or renewable sources. No special scheme has been implemented to support combined generation from renewable sources. Producers of electricity using CHP from renewable energy sources are free to choose one or the other support scheme but not both of them at the same time.

While transposing the requirements of Directive 2009/28/EC into the Bulgarian legislation, a special procedure to encourage the use of CHP from renewable energy sources will be laid down in the ZEVI.

(b) What support schemes are in place to encourage the use of district heating and cooling using renewable energy sources?

Financial resources for such systems can be obtained from the above mentioned European Regional Development Fund, Energy Efficiency Fund, Energy Efficiency and Renewable Energy Credit Line and the Energy Efficiency Facility.

(c) What support schemes are in place to encourage the use of small-scale heating and cooling from renewable energy sources?

Tax incentives: The Local Taxes and Fees Act exempts buildings with ZEE 'A' certificates from tax for 10 years, and buildings with ZEE 'B' certificates from taxes for 5 years, if they use renewable energy technologies for the building itself..

(d) What support schemes are in place to encourage the use of heating and cooling from renewable energy sources in industrial applications?

Support for the use of heating and cooling from renewable energy sources is limited within the framework of special programmes and credit facilities:

- the European Regional Development Fund;
- the Energy Efficiency Fund;
- the Energy Efficiency and Renewable Energy Credit Line;
- the Energy Efficiency Facility.

To support the use of renewable heating and cooling energy, the ZEVI:

- shall oblige the mayors of municipalities to draw up long- and short-term programmes to encourage the use of renewable energy and biofuels. The programmes will also include support schemes for projects to generate and use electricity, heat and cooling energy from renewable sources, including individual systems for the use of heat and cooling energy from renewable sources. These programmes must be reported annually to the Energy Efficiency Agency's successor, the Agency for the Development of Sustainable Resources.
- shall broaden the range of activities supported by the Energy Efficiency Fund, which will be transformed into the Energy Efficiency and Renewables Fund. It will be used to support measures to improve energy efficiency and to promote the production and consumption of renewable energy not covered by the state budget. It will also provide support for heating and cooling energy from renewable sources.

4.5. Support schemes to promote the use of energy from renewable resources in transport applied by the Member State or a group of Member States

Regulation

(a) What is the legal basis for this obligation/target?

The legal basis has been established in the following acts:

- the Renewable and Alternative Energy Sources and Biofuels Act ('ZVAEIB');
- the Excise Duties and Tax Warehouses Act ('ZADS');
- the Clean Ambient Air Act ('ZChAV');
- the Support for Farmers Act ('ZPZP').

(b)Are there any technology-specific targets?

Yes, there are specific targets for liquid fuels for diesel and petrol engines. In accordance with 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 on 15 November 2007, a National Long-term Programme for the Promotion of the Use of Biofuels in Transport 2008-2020 has been adopted. The Programme has set the national indicative targets for the promotion of the use of biofuels in Bulgaria for the period 2008-2020.

(c) What are the concrete obligations/targets per year (per technology)?

The National Long-term Programme for the Promotion of the Use of Biofuels in Transport 2008-2020 sets the following national indicative targets for the consumption of biofuels in the transport sector: 2008 – 2 %, 2009 – 3.50 %, 2010 – 5.75 %, 2015 – 8.00 % and 2020 – 10.00 %.

The amendments to the Renewable and Alternative Energy Sources and Biofuels Act ('ZVAEIB') adopted in 2009 have introduced lower mandatory requirements for the percentage ratio of biofuel components in biofuel blends 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.

Pursuant to the ZVAEIB, suppliers selling liquid fossil fuels to the transport sector are under an obligation to sell the following biofuel blends as of 01 March 2011:

- diesel fuel with a minimum 4 per cent biofuel content by volume;

- diesel fuel with a minimum 2 per cent biofuel content by volume;

The draft ZEVI envisages transport fuel sellers to provide the following blends:

Obligatory biofuel blends for transport under the draft ZEVI, %

Fuel	Date of entry into force of the obligation	Minimum biofuel content
Diesel	1 March 2011	5 % of volume
Diesel	1 March 2012	6 % of volume
Petrol	1 March 2014	2 % of volume
Petrol	1 March 2015	3 % of volume
Petrol	1 September 2015	4 % of volume
Petrol	1 March 2016	5 % of volume
Petrol	1 September 2016	6 % of volume
Petrol	1 March 2017	7 % of volume
Petrol	1 September 2017	8 % of volume
Petrol	1 March 2019	9 % of volume

(d) Who has to fulfil the obligation?

Persons placing on the market petroleum-derived liquid fuels for transport purposes are responsible for the fulfilment of this obligation.

(e) What is the consequence of non-fulfilment?

Pursuant to the Transitional and Final Provisions of the Renewable and Alternative Energy Sources and Biofuels Act:

In establishing infringements, the President of the State Agency for Metrology and Technical Surveillance or officials authorised by him shall have the right to implement the following coercive administrative measures:

- to temporarily suspend the placing on the market and the distribution of liquid fuels, where no declaration of conformity has been submitted or where the submitted declaration does not comply with the statutory requirements, as well as where as a result of the test in a mobile laboratory and the expert evaluation it has been found that the liquid fuel does not meet any of the requirements;
- to prohibit the placing on the market and the distribution of liquid fuels, where as a result of the test in a permanently sited laboratory and the issued findings report, non-compliance has been found;
- to order the withdrawal of liquid fuels from the market and to seal the business premises of retailers, where the test result of the sample on the basis of which non-compliance with the requirements has been found has not been challenged within 7 days of its receipt or, if challenged, has been confirmed by the test result of the control sample.";

` Under the draft ZEVI, when an infringement of the rule on the sale and distribution of biofuels is found, the head of the State Agency for Metrology and Technical Surveillance (SMATS) shall apply the following administrative enforcement measures:

1. to temporarily suspend the sale and supply of liquid fuels on the market and to seal the outlets which have not submitted declarations of conformity, or submitted declarations which do not contain the information required under the law;

2. to prohibit the sale and supply of liquid fuels on the market and to seal the outlets whose fuel has been found not to conform with the legal requirements after testing at a stationary laboratory and the relevant report issued;

3. to order the withdrawal of fuel from the market when the test results from a control sample found not to comply with the law have not been contested within 7 days of its receipt or, if following an appeal, the test results of an arbitration test and a test report confirm these results.

Fines can also be levied in addition to the above sanctions.

(f) Is there any mechanism to supervise fulfilment?

Yes, there is such a mechanism laid down in the Ordinance on the quality requirements for liquid fuels, the conditions, procedure and method of their control issued on the grounds of 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, adopts an ordinance, 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 such fuels, as well as the conditions, procedure and method of quality control of liquid fuels. Fuel quality is controlled by the State Agency for Metrology and Technical Surveillance, in particular by the Directorate-General for Quality Control of Liquid Fuels of the SAMTS.

(g) Is there any mechanism to modify obligations/targets?

Yes, there is – the targets adopted by the Council of Ministers, on a proposal from the Minister of Economy, Energy and Tourism and the Minister of Transport, may be modified depending on the specific conditions; however, the final target — the 10 % share of renewable sources in transport consumption by 2020 — may not be modified.

The draft ZEVI will introduce new obligations on mixing mineral fuels with biocomponents in accordance with Directive 2009/28/EC

Financial support

(a) What is the name and a short description of the scheme?

The name of the scheme is “Tax Reduction for Biofuels” and the following financial incentives are applied to promote the use of biofuels:

- a reduced rate of excise duty for unleaded petrol when bioethanol falling within CN code 2207 20 00 with 4 % to 5 % of volume has been added;
- a reduced rate of excise duty for gas oil when biodiesel falling within CN code 3824 90 99 with 4 % to 5 % of volume has been added.

(b) Is it a voluntary or obligatory scheme?

The scheme is not obligatory as fuel traders may choose voluntarily whether to use the reduced rate of excise duty.

(c) Who manages the scheme? (Implementing body, monitoring authority)

The scheme is managed by the Ministry of Finance.

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?

In total, a reduction of BGN 169.0 million in budget revenue from the excise duty on liquid fuels is envisaged for the two years of implementation of the measure.

(e) How is long-term security and reliability addressed by the scheme?

The scheme is to be expanded and improved.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?

The scheme entered into force on 24 November 2009 following notification to the European Commission. Such notification was necessary in view of the fact that the reduced rates constitute a type of State aid and as such, pursuant to Article 88(3) of the Treaty establishing the European Community, should be applied only after the European Commission takes a favourable decision with regard to their compatibility with the common market.

The reduced rate of excise duty, approved by the 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.

The period after the introduction of the reduced rate of excise duty is too short for its revision. There are no official analyses and reports on the subject.

Comments and discussions with stakeholders concerning the effect of the reduced rates implemented are now under way.

(g) Does support differ according to technology?

Yes, it does because rates of excise duty on diesel and petrol differ:

- for unleaded petrol falling within CN codes 2710 11 31, 2710 11 41, 2710 11 45 and 2710 11 49 when bioethanol falling within CN code 2207 20 00 with 4 % to 5 % of volume has been added – BGN 688 for 1000 l;
- for gas oil falling within CN codes 2710 19 41 to 2710 19 49 when biodiesel falling within CN code 3824 90 with 4 % to 5 % of volume has been added – BGN 596 for

1000 l.

(h) What are the expected impacts in terms of energy production?

The impact of this scheme cannot be assessed separately. The scheme rather facilitates the implementation of the scheme below relating to the compulsory blending of conventional fuels with biofuels and the achievement of the national targets for the share of biofuels in the total consumption of petrol and diesel fuels.

No assessment of the impact of the measure has been made yet.

(i) Is support conditional on meeting energy efficiency criteria?

No, energy efficiency is not taken into consideration in determining support.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

It is an existing measure based on the Renewable and Alternative Energy Sources and Biofuels Act and the Excise Duties and Tax Warehouses Act.

(k) Is this a planned scheme? When would it be operational?

The measure is operational.

(l) What start and end dates (duration) are set for the whole scheme?

The scheme entered into force on 24 November 2009 following its notification to the European Commission for a period of 2 years of the date of approval of the notified scheme and, by decision of the European Commission, it was found to be compatible with the principles of the common market.

(m) Are there maximum or minimum sizes of system which are eligible?

No such sizes have been set.

(n) Is it possible for the same project to be supported by more than one support measure? Which measures can be cumulated?

No, it is not possible.

(o) Are there regional/local schemes? If so, please detail using the same criteria.

No, only the national scheme exists.

Regulatory scheme

(a) What is the name and a short description of the scheme?

Compulsory blending of fossil fuels with biofuels. The scheme provides for the compulsory percentage blending of fossil fuels with biofuels.

(b) Is it a voluntary or obligatory scheme?

It is an obligatory scheme for producers of petroleum-derived liquid fuels and producers of biofuels who have the status of authorised warehouse keepers under the Excise Duties and Tax Warehouses Act.

(c) Who manages the scheme? (Implementing body, monitoring authority)

- The Ministry of Economy, Energy and Tourism
- The State Agency for Metrology and Technical Surveillance

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?

A reduction in budget revenue from excise duty is envisaged.

(e) How is long-term security and reliability addressed by the scheme?

The scheme is to be expanded and improved.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?

In 2009 it was found that the consumption of biofuels in the transport sector in Bulgaria was still insignificant in spite of the statutory requirement introduced on 1 January 2008 relating to the compulsory blending of fossil fuels with biofuels for transport purposes, which was not implemented in practice, and that no progress was actually made towards the achievement of the national indicative target.

The reasons for the non-compliance with the Renewable and Alternative Energy Sources and Biofuels Act as regards the compulsory biofuel component in conventional fuels were complex and it was therefore necessary to take relevant measures in order to address the problems identified and ensure compliance with the blending requirement.

In December 2009, the National Assembly adopted an Act amending the Renewable and Alternative Energy Sources and Biofuels Act (‘ZVAEIB’), introducing the following changes:

- requirements for the phased compulsory blending of petrol and diesel fuels with

biofuels were laid down;

- the phased implementation scheme took into account the need of producers and retailers to acquire the technical capacity for blending and comply with the quality specifications for blended diesel fuels;
- the supervisory authority was clearly designated – the President of the State Agency for Metrology and Technical Surveillance or officials authorised by him;
- coercive administrative measures were introduced, while the amounts of the penalties increased;
- 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 was ensured in order to achieve greater clarity and ensure consistency when determining the obligated persons.

(g) Does support differ according to technology?

Yes, it differs for diesel and petrol.

(h) What are the expected impacts in terms of energy production?

As shown in Table 12

(i) Is support conditional on meeting energy efficiency criteria?

Energy efficiency is not taken into consideration under this support scheme.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

It is an existing measure under the Renewable and Alternative Energy Sources and Biofuels Act**.**

(k) Is this a planned scheme? When would it be operational?

The scheme is operational.

(l) What start and end dates (duration) are set for the whole scheme?

The compulsory blending of conventional fuels with biofuels for use in transport was introduced in 2007 and entered into force on 1 January 2008. There is no fixed end date for compulsory blending.

(m) Are there maximum or minimum sizes of system which are eligible?

Yes, there is a minimum obligatory percentage of biofuels in biofuel blends.

(n) Is it possible for the same project to be supported by more than one support measure? Which measures can be cumulated?

No, it is not possible.

(o) Are there regional/local schemes? If so, please detail using the same criteria.

There are no regional or local schemes. Only the national scheme exists.

(a) What is the name and a short description of the scheme?

The scheme is aimed at supporting producers of energy crops. The scheme enables farmers to receive per hectare supplement payments for the areas under energy crops if they have concluded a contract for the sale of such crops with approved purchasers and/or processors of energy crops. The list of approved processors and purchasers of energy crops is published on the website of the Ministry for Agriculture and Food. The grant amounts to EUR 45 per hectare.

(b) Is it a voluntary or obligatory scheme?

It is a voluntary scheme. Support is granted at the request of the producer.

(c) Who manages the scheme? (Implementing body, monitoring authority)

The Ministry for Agriculture and Food.

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?

In accordance with Ordinance No 9 of 2 May 2007 on the conditions and procedure for providing support to producers of energy crops, farmers receive per hectare payments for the production of energy crops, which are intended for the production of energy products and in respect of which the Minister for Agriculture and Foods has approved representative yields. The aid amounted to € 45/ha[11] in 2009.

No such funds have been allocated for 2010.

(e) How is long-term security and reliability addressed by the scheme?

[11] State Fund for Agriculture: http://www.dfz.bg/bg/direktni-plashtania-na-plosht/shemi-i-merki/podpomagane_proizvoditelite_na_energijni_kulturi/

The conditions and procedure for providing direct payments per hectare of energy crops are in compliance with Council Regulation (EC) No 1782/2003 and Commission Regulation (EC) No 1973/2004. The scheme is to be expanded and improved.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?

The scheme has not been revised or optimised so far.

(g) Does support differ according to technology?

No, support does not differ according to technology.

(h) What are the expected impacts in terms of energy production?

The impact of this scheme cannot be assessed independently. The scheme rather facilitates the implementation of the above scheme relating to the compulsory blending of conventional fuels with biofuels.

(i) Is support conditional on meeting energy efficiency criteria?

Efficiency is not taken into consideration under this or any other scheme.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

It is an existing measure laid down by Ordinance No 9 of 2 May 2007 on the conditions and procedure for providing support to producers of energy crops (promulgated: SG No 37 of 8 May 2007; amended: No 4 of 15 January 2008).

(k) Is this a planned scheme? When would it be operational?

The scheme is operational.

(l) What start and end dates (duration) are set for the whole scheme?

No end date is set for the scheme. It was introduced in 2008.

(m) Are there maximum or minimum sizes of system which are eligible?

No, payments are provided per hectare of areas under energy crops.

(n) Is it possible for the same project to be supported by more than one support measure? Which measures can be cumulated?

No, it is not possible.

(o) Are there regional/local schemes? If so, please detail using the same criteria.

There are no regional or local schemes; there is only a national scheme.

Specific questions for financial support for investment:

(a) What is granted by the scheme? (subsidies, capital grants, low interest loans, tax exemption or reduction, tax refunds)

There is no scheme for financial support for investment.

(b) Who can benefit from this scheme? Is it specified for certain technology(/ies)?

(c) Are applications continuously received and granted or are there periodical calls? If periodical, could you please describe the frequency and conditions?

Additional questions:

(a) What are the concrete obligations/targets per year (per fuel or technology)?

As a supplement to point (c) of the 'Regulation' section, currently the obligations apply to blend fossil fuels with a percentage bio-component as specified by the current ZVAEIB.

The specific percentage components that must be blended in the coming years will be set out in the ZEVI.

The quantitative forecasts are set out in table 12.

(b) Is there differentiation of the support according to fuel types or technologies? Is there any specific support to biofuels which meet the criteria of Article 21(2) of the Directive?

Currently, the scheme makes no differentiation according to technologies with regard to biofuels under the criteria of Article 21(2). The reason is the lack of supply of the next generation of biofuels.

With regard to the requirements of Directive 2009/28/EC, in subsequent periods the scope of existing aid schemes may be extended to include the next generation of biofuels. These biofuels maybe included within the scope of fuels with reduced rates of excise duty.

As far as electricity in the transport sector is concerned, no specific aid schemes have been introduced.

Municipal development programmes include some specific measures to promote the use of renewable energy in the transport sector, including the development of electric transport within their municipalities. This is also part of the mayor's obligations under the ZEVI.

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4.6. Specific measures for the promotion of the use of energy from biomass

4.6.1. Biomass supply: both domestic and trade

Biomass is the most widely used energy resource in Bulgaria – predominantly in the form of firewood combined with coal. The consumption of firewood has increased significantly in recent years as a result of the increased prices of other fuels and electricity. Processed wood fuels — wood chips, pellets and briquettes — are not popular due to their higher prices and the underdeveloped supply system.

Residues from fellings and low-quality wood are mainly used. Biomass waste from agriculture is not used to a great extent and is usually destroyed on the spot.

The use of biogas is at an early stage, despite the available resources.

It should be noted that most of the heating appliances used — stoves and fireplaces — are obsolete and inefficient, with heat losses amounting to 60 - 70 %. Heating by high efficiency boilers for local systems is underdeveloped. The estimates of the Ministry for Agriculture and Food show a potential significant increase in the extraction and utilisation of biomass in Bulgaria from forestry, agriculture and energy crops.

In spite of the assessments made by international experts of the huge potential of biomass for electricity generation in Bulgaria, Bulgarian experts are of the opinion that biomass may be used for electricity generation only in CHP plants. Its use in condense-type power plants is considered to be inexpedient from an environmental, economic and technical point of view.

The table below shows the amount of biomass obtained for energy purposes in 2006 along with the conversion factors:

Table 7: Quantities of energy biomass acquired in 2006

Sector of origin		Amount of domestic resources (t)	Imports, t		Exports, t	Net amount, (t)	Primary energy production (ktoe)
			EU	**Non-EU**	**EU/non-EU**		
(A) Biomass from forestry	*Of which:*	2 527 513	0	0	99 888	2 427 625	759
	(1) Direct supply of wood biomass from forests and other wooded areas for energy generation	2 411 168	0	0	99 888	2 311 280	735
	Optional — if information is available, you could give further details about the amount of feedstock belonging to this category: (•) fellings (b) residues from fellings (tops, branches, bark, stumps) (c) landscape management residues (woody biomass from parks, gardens, tree rows, bushes) (d) other (please indicate types)						

Sector of origin		Amount of domestic resources (t)	Imports, t		Exports, t	Net amount, (t)	Primary energy production (ktoe)
			EU	**Non-EU**	**EU/non-EU**		
	(2) Indirect supply of wood biomass for energy generation	116 345	0	0	0	116 345	24
	Optional — if information is available you could give further details about: (a) residues from sawmilling, wood-working, and the furniture industry (bark, sawdust) (b) by-products of the pulp and paper industry (black liquor, tall oil) (c) processed wood-fuel (d) post-consumer recycled wood (recycled wood for energy generation, household waste wood) (e) others (please define)						
(B) Biomass from agriculture and fisheries	*Of which:*	19 466	0	0	0	19 466	5
	(1) Agricultural crops and fishery products directly provided for energy generation	0	0	0	0	0	0

Sector of origin	Amount of domestic resources (t)	Imports, t		Exports, t	Net amount, (t)	Primary energy production (ktoe)
		EU	**Non-EU**	**EU/non-EU**		
Optional — if information is available you could give further details about: (a) arable crops (cereals, oilseeds, sugar beet, silage maize) (b) plantations (c) short-rotation trees (d) other energy crops (grasses) (e) algae (f) other (please indicate types)						
(2) Agricultural by-products/processed residues and fishery by-products for energy generation	19 466	0	0	0	19 466	5

Sector of origin		Amount of domestic resources (t)	Imports, t		Exports, t	Net amount, (t)	Primary energy production (ktoe)
			EU	**Non-EU**	**EU/non-EU**		
	Optional — if information is available you could give further details about: (a) straw (b) manure (c) animal fat (d) meat and bone meal (e) cake by-products (incl. oilseed and olive oil cake for energy) (f) fruit biomass (including shells and kernels) (g) fishery by-products (h) clippings form vines, olive and fruit trees (i) other (please indicate types)	0	0	0	0	0	0
(C) Biomass from	*Of which:*	369 992	0	0	0	369 992	59

Sector of origin		Amount of domestic resources (t)	Imports, t		Exports, t	Net amount, (t)	Primary energy production (ktoe)
			EU	**Non-EU**	**EU/non-EU**		
waste	(1) The biodegradable fraction of municipal solid waste including biowaste (biodegradable garden and park waste, food and kitchen waste from households, restaurants, cafeterias and retail premises, and other such waste from food processing plants) and landfill gas, m^3	0	0	0	0	0	0
	(2) The biodegradable fraction of industrial waste (including paper, cardboard, pallets)	369 992	0	0	0	369 992	59
	(3) Sewage sludge	0	0	0	0	0	0

Table 7a below shows the estimated amount of biomass energy in use by 2020. The figures refer to the final energy contained in biomass

Table 7a: Estimated biomass domestic supply in 2015 and 2020

Sector of origin		2015		2020	
		Expected amount of domestic resource (kt)	Primary energy production (ktoe)	Expected amount of domestic resource (kt)	Primary energy production (ktoe)
(•) Biomass from forestry	(1) Direct supply of wood biomass from forests and other wooded areas for energy generation	2610	830	2805	892
	(2) Indirect supply of wood biomass for energy generation	115	30	146	38
(B) Biomass from agriculture and fisheries	(1) Agricultural crops and fishery products directly provided for energy generation	417	100	542	130
	(2) Agricultural by-products/processed residues and fishery by-products for energy generation	125	30	163	39

(•) Biomass from waste	(1) Biodegradable fraction of municipal solid waste including biowaste (biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises, and comparable waste from food processing plants) and landfill gas	400	80	550	110
	(2) Biodegradable fraction of industrial waste (including paper, cardboard, pallets)	375	60	500	80
	(3) Sewage sludge	175	4	200	4

The figures in Table 7 are based on data from the National Statistics Institute.

- Item (A) Biomass from forestry, (1) Direct supply of wood biomass from forests and other wooded areas for energy generation. The NSI states wood biomass from forests and other wooded areas for energy in terms of cubic metres (for 2006 8 089 481 m^3). The conversion factor used were: 1 m^3 = 3.806 GJ, 1 GJ = 0.0239 toe and 1 m^3 = 3.5 t.
- The NSI data in Table 7, item (A), Biomass from forestry, (2) Indirect supply of wood biomass for energy generation for 2006 are classified as wood waste. These are calculated as the total of:
- wood biomass used in factory power stations: 3 671 t;
- final energy use in industry, sub-sectors:
  - manufacture of timber material and products, excl. furniture: 78 103 t;
  - manufacture of wood pulp, paper, cardboard and products thereof: 29 925 t;
  - furniture production: 7 646 t.

  The following conversion factors have been used: 1 t = 10.260 GJ and 1 GJ = 0.0239 toe
- Item (B), Biomass from agriculture and fisheries includes wood and plant waste from:
  - Food and drink manufacture: 19 466 t;
- Item (C), Biomass from waste, (2) Biodegradable fraction of industrial waste (including paper, cardboard, pallets) includes other industrial waste from:
  - biomass used in factory power stations: 156 005 GJ;
  - manufacture of timber material and products, excl. furniture: 335 637 GJ;
  - manufacture of wood pulp, paper, cardboard and products thereof: 1987312 GJ.

The individual categories of biomass are converted as follows:

Conversion table

Biomass type	kCal/kg

Direct supply of wood biomass from forests and other wooded areas for energy generation	3180
Indirect supply of wood biomass for energy generation, per ton	2600
Agricultural crops and fishery products directly provided for energy generation	2400
Agricultural by-products/processed residues and fishery by-products for energy generation	2400
Biodegradable fraction of municipal solid waste including biowaste (biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises, and other such waste from food processing plants) and landfill gas	2000
Biodegradable fraction of industrial waste (including paper, cardboard, pallets)	1600
Sewage sludge	200

What is the estimated role of imported biomass up to 2020? Please specify the quantities expected (ktoe) and indicate possible import countries.

The import and export of energy biomass is insignificant and there are no prospects of this changing by 2020.

In addition to the information provided above, could you please describe the current situation of agricultural land used for dedicated energy production as follows:

Table 9

Current agricultural land use for production of crops dedicated to energy in 2006, (ha)

Agricultural land use for production of dedicated energy crops	Surface
1. Land used for short rotation trees (willows, poplars)	0
2. Land used for other energy crops such as grasses (reed canary grass - Phalaris arundinacea, switch grass - Panicum virgatum, Miscanthus), sorghum	0

4.6.2. Measures to increase biomass availability, taking into account other biomass users (agriculture and forest-based sectors)

Mobilisation of new biomass sources

(•) Please specify how much land is degraded.

In the estimates of the Ministry for Agriculture and Food, degraded land is 348 118 ha.

(b) Please specify how much unused arable land there is.

Unused arable land is estimated at 461 142 ha

(c) Are any measures planned to encourage unused arable land, degraded land, etc. to be used for energy purposes?

Measures for growing energy crops are planned under the Rural Development Programme.

(d) Is energy use of certain already available primary material (such as animal manure) planned?

No energy has been produced from animal manure yet but measures are planned under the Rural Development Programme.

(e) Is there any specific policy promoting the production and use of biogas? What type of uses are promoted (local, district heating, biogas grid, natural gas grid integration)?

There are no specific incentives promoting the production and use of biogas, except for its use in combined heat and power generation, in accordance with which the amount of electricity produced is purchased at preferential prices. For the time being, the amount of biogas produced remains insignificant; however, measures are planned under the Rural Development Programme.

(f) What measures are planned to improve forest management techniques in order to maximise the extraction of biomass from the forest in a sustainable way? How will forest management be improved in order to increase future growth? What measures are planned to maximise the extraction of existing biomass that can already be put into practice?

Efforts are being made to improve forest management in order to increase future growth and sustainable reproduction. Certification of State-owned and municipal forests is planned in order to improve forest management techniques.

Impact on other sectors

(a) How will the impact of energy use of biomass on other sectors based on agriculture and forestry be monitored? What are these impacts? (If possible, please provide information also on quantitative effects.) Is the monitoring of these impacts planned in the future?

No assessment of the impact of energy use of biomass on other sectors has been made. Such an assessment will be carried out in the future elaboration and implementation of the sustainable development policy.

The use of biofuels in the agricultural sector has a significant potential as over 82 % of the energy consumption in that sector in 2005 was based on liquid fuels. The use of biofuels in the sector would facilitate its sustainable growth.

(b) What kind of development is expected in other sectors based on agriculture and forest that could have an impact on the energy use? (E.g. could improved efficiency/productivity increase or decrease the amount of by-products available for energy use?)

The increased production of processed biomass, e.g. wood chips, pellets and briquettes, would lead to a decrease in its price for end customers. This would decrease the consumption of firewood as well as the losses of companies selling them.

4.7. Planned use of statistical transfers between Member States and planned participation in joint projects with other Member States and third countries

Under this sub-chapter the expected use of cooperation mechanisms between Member States and Member States and third countries has to be described. This information should draw on that provided in the forecast document referred to in Article 4(3) of the Directive 2009/28/EC.

4.7.1. Procedural aspects

(a) Describe the national procedures (step by step) established or to be established, for arranging a statistical transfer or joint project (including responsible bodies and contact points).

The precise, reliable and timely assessment of production capacities is essential for Bulgaria's ability (or any other Member State) to offer statistical "surplus production" to third countries, taking into account the mandatory share of renewable energy in energy consumption. This requires the setting up of a well coordinated up-to-date register of gross final consumption of energy in all sectors of the economy and reliable follow-up of the implementation of renewable energy projects.

In the electricity generation sector, the gross consumption and production from renewable energy sources is established on the basis of guarantees of origin. As yet, there is no market for guarantees of origin in Bulgaria (e.g. as part of the certified sales of green electricity). Guarantees of origin are issued/registered by the State Energy and Water Regulatory Commission and this mechanism is sufficient to determine the production of renewable energy as part of the gross final consumption of electricity.

It is more difficult to determine the large energy component of biomass in the heating and cooling sector. Given the large share of consumption of wood biomass for heating purposes, the assessment of the share of renewable energy sources in the final energy consumption of that sector will require information on:

- total direct supply of wood biomass (from managed forests);
- total production of biomass from energy crops;
- total supply of biomass from industrial wastes (wood-working and furniture industry, sawmilling, pulp and paper industry, recycled wood);
- total recycled/waste/regenerated biomass;
- an assessment of the gross calorific values of alternative biomass components.

To this end, close coordination needs to be ensured between the Ministry of Economy, Energy and Tourism, the Ministry for Agriculture and Food, the Ministry of Transport, the Ministry for Regional Development and the National Statistical Institute.

Based on the information above, the total energy content of the overall biomass production as compared to the respective total energy content of heating fuels may be determined. Despite the existing large variety of high efficiency combustion technologies, it may be assumed that in a certain application the total useful energy content of biomass would be equal to that of conventional fuels, i.e. biofuels directly replace the same amount of conventional energy.

A national database of all statistical data relating to the energy sources described above will be kept by the National Statistical Institute.

Statistical guarantees of origin will be issued in respect of each 1 MWh (0.00008598 ktoe) produced from renewable energy sources in the transport and heating sectors just like those for electricity produced from renewable energy sources. These guarantees of origin will be available for trading with other Member States.

The Ministry of Economy, Energy and Tourism is planning to open an official dialogue with other Member States which might be interested in securing additional renewable energy supply to meet their national targets. The prospective applicants are Italy, Denmark, Belgium and Luxembourg, each of which is likely to experience deficit in relation to their own binding targets for the share of renewable energy in the total final consumption and may take advantage of statistical transfers.

The institutions responsible for the exchange of information on the implementation of joint projects are the National Statistical Institute, the Agency for Small and Medium-Sized Enterprises, the Ministry for Regional Development and Public Works (service sector buildings), the Energy Efficiency Agency (audit reports of buildings, enterprises and registration of boilers).

(b) Describe the means by which private entities can propose and take part in joint projects either with Member States or third countries.

Such entities may receive financing from a special fund set up for projects yielding guaranteed results.

(c) Give the criteria for determining when statistical transfers or joint projects shall be used.

The implementation of renewable energy projects could be combined with the implementation of energy efficiency measures. In the light of the country's potential for implementing energy efficiency measures, an important criterion when selecting projects eligible for financing could be the participation of enterprises carrying out improvements in their energy efficiency, e.g. energy-intensive enterprises, large buildings and energy traders.

A further advantage could be the existence of an energy audit report containing information on the economic expediency of energy efficiency measures, allowing an assessment to be made whether they should be coupled with renewable energy measures.

(d) What is going to be the mechanism to involve other interested Member States in a joint project?

Contracts with guaranteed results coupled with grant financing for additional measures from the State budget, private investors and the operational programmes might be an appropriate mechanism.

(e) Are you willing to participate in joint projects in other Member States? How much installed capacity/electricity or heat produced per year are you planning to support? How do you plan to provide support schemes for such projects?

At this stage, preparing such projects is extremely difficult due to the complex coordination process. They could be formulated at a later stage, provided there are adequate resources and conditions.

4.7.2. Estimated excess production of renewable energy compared to the indicative trajectory which could be transferred to other Member States

In the most favourable scenario for the development of energy generation from renewable sources, coupled with a vigorous energy efficiency policy, Bulgaria's potential for statistical transfers to other Member States is as shown in Table 9[12].

4.7.3. Estimated potential for joint projects

(a) In which sectors can you offer renewable energy use development in your territory for the purpose of joint projects?

A large number of possibilities exist for the development of renewable energy use projects in Bulgaria. Electricity generation from renewable energy sources finds vigorous support in the national legislation and there are numerous investors from the European Union. A number of projects have already been completed while others are in the process of preparation. There are numerous possibilities for joint projects in this sphere, in the range of several thousand MW.

However, the economic conditions in Bulgaria call for combining the policy promoting renewable energy use with a policy promoting heat generation, which is considerably more efficient from the perspective of primary energy use and requires much less relative investments. The costs of supply and transformation would also be lower since production would be closer to consumption. There are various possibilities:

[12] The author means Table 10. *[Translator's note]*

- combined combustion of fossil fuels and biomass in district heating companies in large cities – such a project is planned for the Sofia district heating company;
- a large-scale programme promoting the use of solar panels for water heating, thus reducing the use of electricity;
- expansion of the production of wood chips by making use of residues from fellings with a view to replacing heat generation installations in the industry and public service buildings;
- manufacture of cars using electricity or alternative fuels.

A prospective project that could attract attention is the substitution of fossil fuels by renewable energy for heating purposes of public service buildings. Liquid fuels are used for heating purposes in a large number of such buildings. The total consumption of light fuel oil of these buildings (schools, kindergartens, municipal administration, etc.) in the past three years amounted to about 60 ktoe. These installations can entirely be replaced by installations using solid biomass, biogas or biofuels, depending on the preferences and resources of the owners.

(b) Has the technology to be developed been specified? How much installed capacity/electricity or heat produced per year?

A suitable residential heating technology is that based on the combustion of solid unprocessed biomass (e.g. wood chips and pellets) in boilers of 0.2 to 1 MW installed capacity. The precise number of possible installations may be determined in the next calendar year after the preparation of the register of hot-water boilers in the territory of Bulgaria, which is currently being prepared.

The greater part of residues from agriculture, food processing industry and fellings can be processed into wood chips and briquettes. At present, these opportunities are not exploited due to the high price of chips and the relatively low price of firewood widely used by households. According to estimates, about a million households in Bulgaria use wood biomass for heating, a large part of which is unprocessed. This market is constantly expanding since households refuse to use the expensive services of central heating companies mainly using natural gas.

(c) How will sites for joint projects be identified? (For example, can local and regional authorities or promoters recommend sites? Or can any project participate regardless its location?)

Municipalities with their own forests having an adequate annual growth to supply the planned capacities are appropriate for the implementation of joint projects. Financing may be provided under guaranteed energy savings contracts and the operational programmes of the European Union.

The owners of forests or large farms and producers of biomass boilers are eligible participants in the construction of wood chips and pellets production facilities.

(d) Are you aware of the potential for joint projects in other Member States or in third countries? (In which sector? How much capacity? What is the planned support? For which technologies?)

In Germany and Austria, there are suitable technologies for the production and energy use of wood biomass. We are not aware of any further details.

(e) Do you have any preference to support certain technologies? If so, which?

We give preference to distributed heat generation technologies - solar, biomass and geothermal. Cogeneration plants at the place where heat is consumed are another preferred technology.

In such cases, the entire cycle from waste biomass processing, transport, supply, combustion through to the sale of energy should be covered.

4.7.4. Estimated demand for renewable energy to be satisfied by means other than domestic production

Table 10 contains information about the estimated quantities of renewable energy, which could be transferred to other Member States under the additional energy efficiency scenario. The quantities indicated therein differ from those set out in the forecast document as a result of the entry into service of a large-scale wind power installation and the constantly increasing consumption in transport.

Table 10

Estimated excess and/or deficit production of renewable energy compared to the indicative trajectory which could be transferred to/from other Member States in Bulgaria, (ktoe)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020

Estimated excess in forecast document	79	77	145	157	345	346	486	427	374	337	290
Estimated excess in NREAP	61	80	168	202	353	386	481	420	471	411	341
Estimated deficit in forecast document	0	0	0	0	0	0	0	0	0	0	0
Estimated deficit in NREAP	0	0	0	0	0	0	0	0	0	0	0

5. ASSESSMENTS

5.1. Total contribution expected of each renewable energy technology to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity, heating and cooling and transport

Table 11 contains information of the contribution (in GWh) of individual renewable energy technologies and their installed capacity to the 2020 target. For the base year 2005, statistical data provided by the National Statistical Institute have been used.

Water, wind and solar power are used for electricity generation in Bulgaria. Water is the most widely used renewable energy source for electricity generation. As the data of the Ministry of Economy, Energy and Transport show, 93.5% of the electricity generated from renewable energy sources in 2009 was produced by hydropower plants. The share of electricity produced by wind power plants is increasing but it is still marginal and amounts to 6.4% of the electricity produced from renewable sources in Bulgaria. The strong dependence of electricity generation on one single renewable source cast doubts on the achievement of the 2020 target and calls for measures to be taken in order to diversify the sources and technologies for producing energy.

Electricity production by hydropower plants strongly depends on the average annual rainfall, which in its turn is influenced by complex climatic factors. Bulgaria has a long-standing tradition in constructing and operating hydropower plants, as a result of which the available technical potential is exploited to a large extent. A considerable increase in installed capacities and energy output may only be achieved by constructing hydropower plants along the Danube River. At the same time, a large part of the hydropower plants in Bulgaria need to be rehabilitated and modernised. In the light of the above, it is not realistic to expect an increase in the energy output of hydropower plants and it will remain within the current limits established on the basis of the now effective legislative framework.

As regards hydropower plants put into service before 2009, the average yearly production for the previous four years (or the years for which information is available) has been used. The 80 MW Tsankov Kamak hydroelectric node is to enter service, and the possibility of implementing the project relating to the construction of the 170 MW Gorna Arda hydroelectric node has also been taken into account.

In the light of the requirements concerning the electricity produced by HPPs laid down in Directive 2009/28/EC, the information set out below includes installed capacities in pumped storage hydropower plants.

Electricity production by solar photovoltaic installations is developing more rapidly over the past few years. Investor appetite is expected to increase over the period 2010-2015, leading to an increase of about 95 %, on average, in installed capacity or 251 MW of installed capacity in 2015. For the period from 2016 to 2020, the construction of such capacities will increase by approx. 4 % per annum. The planned average annual output varies from 1 250 kWh to 1 550 kWh per installed kWp. Electricity production from this type of source is expected to reach 435 GWh (a 6 % share of electricity from renewable sources).

The development of the wind energy sector in Bulgaria takes into account the construction of onshore wind farms. Bulgaria is located in a region with relatively low wind energy potential and it is assumed that installations will operate for 1500 to 1800 full effective hours. Installed capacities and electricity output from this type of plants are expected to increase significantly in 2020 with 34 % of renewable energy being generated by wind power plants.

Electricity production from biomass is expected to reach 865 GWh in 2020.

Biomass is the renewable energy source with the greatest potential in Bulgaria and most varied applications: as feedstock for the production of briquettes, pellets and other solid fuels, as a fuel for combined heat and power generation and for direct combustion for residential heating and hot water purposes. This is the reason why the planned future development of biomass is related to a variety of factors:

- the increased production of briquettes and pellets from wood waste, allowing combustion management automation;
- the gradual replacement of ordinary heating stoves by high efficiency combustion chambers using briquettes and pellets;
- increased timber harvesting up to 7 million solid m^3 per annum by 2020;
- the inclusion of oil price rises and other agricultural costs in cereal prices and not in the price of residues;
- the utilisation of at least 50 % of the straw that has remained unused as at 2008 and at least 90 % of the oil-seed cake, which is a by-product of vegetable oil production;
- the consolidation of animal farms in the next 3 to 5 years, which will allow the

construction of cost-effective biogas installations;

- the introduction of biomass as an alternative fuel for the summer season in district heating plants;
- the promotion of combined heat and power generation from biomass, avoiding the production of electricity only, if possible.

Table 11 contains information on the contribution of renewable energy in heating and cooling. Estimates of both installed capacity and production are given for geothermal, solar, heat pumps and biomass technologies, with a breakdown for the latter category for solid, gaseous and liquid biomass. The contribution from district heating plants using renewable energy sources has been estimated.

The estimate of the renewable energy consumption in the heating and cooling sector has also taken account of the following:

The implementation of solar panels for hot water purposes in households and in the services sector is easy to be achieved. Given the rise in prices of conventional energy sources, solar power is becoming an increasingly attractive option. In relation to the requirements of Directive 2009/28/EC for introducing into national law minimum levels for the use of energy from renewable sources from 2012 onwards, solar panels seem to be among the most appropriate options to achieve the target.

Heat generation from geothermal sources is characterised by regional concentration of the sources and capacity limitations for the transmission of the primary heat carrier over long distances. This makes it particularly appropriate to meet local heat demand.

Table 12 shows the contribution from different technologies to the renewable energy target in the transport sector. Data are indicated for bioethanol, biodiesel, biofuels from wastes and residues, biofuels from non-food cellulosic material or from ligno-cellulosic material, biogas, electricity from renewable energy sources and hydrogen from renewable energy origin. The estimate is consistent with the requirement that all biofuels used should comply with the sustainability criteria, by reason of which it may be necessary to import biofuels at the end of the period in view of the increasing requirements to them.

Table 10•

Estimation of total contribution (installed capacity, gross electricity generation) expected from each renewable energy technology in Bulgaria to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity 2010-2014

	2005		2010		2011		2012		2013		2014	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro:	2 915	3 068	2 979	3 223	3 055	3 322	3 065	3 347	3 076	3 374	3 086	3 398
< 1 MW	29	75	49	127	35	91	39	101	43	112	46	120
1 MW- 10 MW	170	400	214	503	224	526	230	541	237	557	244	573
> 10 MW	1 852	2 593	1 852	2 593	1 932	2 705	1 932	2 705	1 932	2 705	1 932	2 705
Of which pumping	864		864		864		864		864		864	
Geothermal	0	0	0	0	0	0	0	0	0	0	0	0
Solar:	0	0	9	12	38	50	75	91	130	174	186	246
photovoltaic	0	0	9	12	38	50	75	91	130	174	186	246
concentrated solar power	0	0	0	0	0	0	0	0	0	0	0	0

	2005		2010		2011		2012		2013		2014	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Tide, wave, ocean	0	0	0	0	0	0	0	0	0	0	0	0
Wind:	8	5	336	605	560	1 008	772	1 390	980	1 764	1 115	2 007
onshore	8	5	336	605	560	1 008	772	1 390	980	1 764	1 115	2 007
offshore	0	0	0	0	0	0	0	0	0	0	0	0
Biomass:	0	0	0	0	10	55	22	120	46	251	94	513
solid	0	0	0	0	9	50	16	88	29	160	54	297
biogas	0	0	0	0	1	5	6	32	17	92	40	216
bioliquids	0	0	0	0	0	0	0	0	0	0	0	0
Total	2 923	3 073	3 324	3 840	3 663	4 435	3 934	4 948	4 232	5 563	4 481	6 164
Of which in CHP	0	0	0	0	10	55	22	120	46	251	94	513

Table 10b

Estimation of total contribution (installed capacity, gross electricity generation) expected from each renewable energy technology in Bulgaria to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity 2015-2020

	2015		2016		2017		2018		2019		2020	
	MW	**GWh**	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**
Hydro:	3 094	3 417	3 100	3 431	3 275	3 681	3 281	3 696	3 285	3 705	3 288	3 712
< 1 MW	48	125	49	127	49	127	50	130	50	130	50	130
1 MW- 10 MW	250	588	255	599	260	611	265	623	269	632	272	639
> 10 MW	1 932	2 705	1 932	2 705	2 102	2 943	2 102	2 943	2 102	2 943	2 102	2 943
Of which pumping	864		864		864		864		864		864	
Geothermal	0	0	0	0	0	0	0	0	0	0	0	0
Solar:	251	343	265	364	275	383	285	402	287	416	303	435
photovoltaic	251	343	265	364	275	383	285	402	293	416	303	435
concentrated solar power	0	0	0	0	0	0	0	0	0	0	0	0

	2015		2016		2017		2018		2019		2020	
	MW	**GWh**	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**
Tide, wave, ocean	0	0	0	0	0	0	0	0	0	0	0	0
Wind:	1 274	2 293	1 315	2 367	1 370	2 466	1 398	2 516	1 420	2 556	1 440	2 592
onshore	1 274	2 293	1 315	2 367	1 370	2 466	1 398	2 516	1 420	2 556	1 440	2 592
offshore	0	0	0	0	0	0	0	0	0	0	0	0
Biomass:	147	803	152	830	153	835	155	846	156	852	158	865
solid	89	490	91	501	91	501	92	506	92	506	93	514
biogas	58	313	61	329	62	335	63	340	64	346	65	351
bioliquids	0	0	0	0	0	0	0	0	0	0	0	0
Total	4 766	6 856	4 832	6 992	5 049	7 366	5 119	7 460	5 148	7 529	5 189	7 604
Of which in CHP	147	803	152	830	153	835	155	846	156	852	158	865

Table 11

Estimation of total contribution (final energy consumption) expected from each renewable energy technology in Bulgaria to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in heating and cooling 2010-2020, (ktoe)

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Geothermal (excluding low temperature geothermal heat in heat pump applications)		1.0	2.0	2.4	2.4	3.0	3.0	6.0	6.0	7.0	8.0	9.0
Solar		6.0	6.4	6.7	7.5	8.5	10.9	14.3	16.8	18.3	19.0	21.0
Biomass:	724	734	756	790	823	888	929	963	980	1003	1038	1073
solid	724	734	756	789	819	880	916	945	962	983	1018	1053
biogas	0	0	0	1	4	8	13	18	18	20	20	20
bioliquids	0	0	0	0	0	0	0	0	0	0	0	0
Renewable energy from heat pumps: - of which aerothermal - of which geothermal - of which hydrothermal	0	0	0	0	0	0	0	0	0	0	0	0

Total	**724**	**741**	**765**	**799**	**833**	**900**	**943**	**983**	**1003**	**1028**	**1065**	**1103**
Of which DH	0	5	9	14	18	25	33	40	49	65	82	91
Of which biomass in households	724	736	756	785	815	875	910	943	954	963	983	1012

Table 12

Estimation of total contribution expected from each renewable energy technology in Bulgaria to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector 2010-2020, (ktoe)

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bioethanol/bio-ETBE	0	0	1	3	5	15	19	22	37	38	53	60
Of which Biofuels Article 21(2)	0	0	0	0	0	0	0	0	0	0	0	0
Of which imported	0	0	0	0	0	0	0	0	0	3	5	10
Biodiesel	0	33	46	64	85	110	140	172	190	210	213	220
Of which Biofuels Article 21(2)	0	0	0	0	0	0	0	0	0	0	0	0
Of which imported	0	0	0	0	0	0	0	0	0	0	0	0
Hydrogen from renewables	0	0	0	0	0	0	0	0	0	0	0	0
Renewable electricity	3	3	4	4	5	5	7	8	10	13	13	15

Of which road transport	0	0	0	0	0	0	1	2	3	6	6	8
Of which non-road transport	3	3	4	4	5	5	6	6	7	7	7	7
Others (as biogas, vegetable oils, etc.) — please specify	0	0	0	0	0	0	0	0	2	4	5	7
Of which Biofuels *Article 21(2)*	0	0	0	0	0	0	0	0	1	2	3	4
Total	**3**	**36**	**51**	**71**	**95**	**130**	**166**	**202**	**239**	**265**	**284**	**302**

5.2. Total contribution expected from energy efficiency and energy saving measures to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity, heating and cooling and transport.

The answer to this requirement should be included in Table 1 under Chapter 2.

The additional energy efficiency and energy saving measures examined in Chapter 2 and included in Table 1, showing the expected results of additional energy efficiency measures together with the reference scenario, could make an important contribution to meet Bulgaria's 16% target. As a whole, the expected effects of energy efficiency measures are a 20 % decrease in final energy consumption in 2020 (marking a substantial increase from the 4 % level in 2010).

The effects of energy efficiency measures are not equivalent in all sectors. The greatest potential for reducing energy consumption can be observed in heating and cooling. This is due in particular to the significant potential for making improvements in the large-scale use of biomass in non-standard, inefficient appliances, which could easily be replaced by high efficiency boilers and stoves after the implementation of targeted support programmes. At the same time, the prospects for considerable improvements in the energy performance of buildings are equally important. The total contribution to the reduction of energy consumption is 25 % by 2020[13].

As regards the electricity sector, there is scope for improvements in the efficiency of the transformation, transmission and distribution of energy but the measures in this sector, which is considerably more conservative, are going to yield results gradually and at a later stage. The expected reduction of losses in the sector is estimated at about 12.5% in 2020.

Likewise, transport shows a significant potential for more efficient fuel consumption through the gradual introduction of more economical engines and vehicles. Partially, this is expected to result from the manufacturers' efforts worldwide in response to the constantly increasing prices of fuels. On the other hand, considerable possibilities exist for reducing fuel losses by improving road infrastructure and traffic control. These possibilities are limited, however, by the low purchasing power of the population and the expected slow upgrading of the vehicle fleet. In the assessments of experts, energy savings in transport may amount to slightly above 20 % in 2020 as compared to the reference data for 2005.

[13] The sentence in the original seems to be rather ambiguous. *[Translator's note]*

5.3. Assessment of the impacts (Optional)

Table 14

Estimated costs and benefits of the renewable energy policy support measures

Measure	Expected renewable energy use (ktoe)	Expected cost (in EUR) — indicate time frame	Expected GHG reduction by gas (t/year)	Expected job creation

5.4. Preparation of the National Renewable Energy Action Plan and the follow-up of its implementation

(a) How were regional and/or local authorities and/or cities involved in the preparation of this Action Plan? Were other stakeholders involved?

The Ministry of Economy, Energy and Tourism prepared and sent questionnaires to the ministries, municipal authorities, institutions, industries and various organisations concerned in order to obtain their comments and opinions and gather information. Meetings with stakeholders were organised.

The answers to the questionnaires were reviewed and summarised in order to obtain a clear picture of the existing environment for the development of renewable energy sources in Bulgaria and to draw up proposals for strengthening the legislation and other measures through which an effective framework for meeting the 2020 target could be established.

(b) Are there plans to develop regional/local renewable energy strategies? If so, could you please explain? In case relevant competences are delegated to regional/local levels, what mechanism will ensure national target compliance?

Under the Renewable and Alternative Energy Sources and Biofuels Act, municipalities are under an obligation to elaborate programmes promoting the development of renewable energy sources and biofuels.

An Agency for Sustainable Energy Development will be established. This will be the cornerstone of the implementation of the Renewable Energy Action Plan and the fulfilment of Bulgaria's renewable energy obligations up to 2020.

The Agency for Sustainable Energy Development will have its own regional entities in order to support the work of regional and municipal authorities in the implementation of a policy for deployment of the use of renewable sources.

The Agency will collaborate with other stakeholders for the creation of regional maps for the assessment of the potential, more efficient spatial planning of the development of renewable energy sources and more efficient combination of renewable energy production and consumption.

(c) Please explain the public consultation carried out for the preparation of this Action Plan.

In the preparation of this Action Plan, consultations with stakeholders were carried out and information on the preparation, the future role and contents of the plan was provided to the media. Public information campaigns are envisaged to play a key role in the fulfilment of the national renewable energy obligations.

(d) Please indicate your national contact point/the national authority or body responsible for the follow-up of the Renewable Energy Action Plan?

The national authority responsible for the preparation, the establishment of the legal framework and the implementation of the Action Plan is the Ministry of Economy, Energy and Tourism.

(e) Do you have a monitoring system, including indicators for individual measures and instruments, to follow-up the implementation of the Renewable Energy Action Plan? If so, could you please give more details on it?

There is no official monitoring system yet. The Ministry of Economy, Energy and Tourism, acting through the Agency for Sustainable Energy Development, will create an information and monitoring platform to follow-up the implementation of the Renewable Energy Action Plan and will regularly provide information about the existing and planned measures, legislative developments, progress made towards the achievement of the renewable energy targets, existing barriers and possible improvements in the system.

DEFINITIONS

'Aerothermal energy' means energy stored in the form of heat in the ambient air;

'Alternative energy sources' are hydrogen, waste from technical processes, etc.;

'Biofuels' means liquid or gaseous fuel for transport produced from biomass;

'Biomass' means the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste;

'Gross final consumption of energy' means the energy commodities delivered for energy purposes to industry, transport, households, services including public services, agriculture, forestry and fisheries, including the consumption of electricity and heat by the energy branch for electricity and heat production and including losses of electricity and heat in distribution and transmission;

'Renewable energy sources' means renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;

'Guarantee of origin' means an electronic document which has the sole function of providing proof to a final customer that a given share or quantity of energy was produced from renewable sources as required by Article 3(6) of Directive 2003/54/EC;

'Geothermal energy' means energy stored in the form of heat beneath the surface of solid earth;

'Electricity produced from renewable energy sources' means electricity produced by plants using only renewable energy sources, as well as the proportion of electricity produced from renewable energy sources in hybrid plants also using conventional energy sources and including renewable electricity used for filling storage systems, and excluding electricity produced as a result of storage systems;

'Renewable energy obligation' means a national support scheme requiring energy producers to include a given proportion of energy from renewable sources in their production, requiring energy suppliers to include a given proportion of energy from renewable sources in their supply, or requiring energy consumers to include a given proportion of energy from renewable sources in their consumption. This includes schemes under which such requirements may be

fulfilled by using green certificates;

'Green certificate' means a document of fixed duration, certifying the production of a certain quantity of electrical or thermal energy from renewable energy sources or in a combined manner, specifying the date and place of production, the production capacity and its owner, transferable separately from the physical electrical or thermal energy whose production it certifies;

'Combined combustion' means combustion of both renewable and non-renewable energy sources, whereby at least 20 percent of the fuel used for the production of electrical or thermal energy is from renewable energy sources;

'Cogeneration' means the simultaneous generation in one process of thermal energy and electrical and/or mechanical energy;

'Minimum connection scheme' means the most economical combination of electrical installations and power lines for the connection of a given facility, defined in accordance with the requirements of the existing legal framework applicable to spatial planning, the set-up, safety and operation of electricity networks, the technical specifications, the facilities and technologies used by the transmission — respectively, the distribution — company for the construction and maintenance of the grid infrastructure;

'Household electricity and/or heat customer' means a natural person, who is the owner or user of a property, who uses electrical and/or thermal energy for his own household consumption;

'Default value' means a value derived from a typical value by the application of pre-determined factors and that may, in circumstances specified in this Directive, be used in place of an actual value;

'Support scheme' means any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments;

'Bioliquids' means liquid fuel for energy purposes other than for transport, including electricity and heating and cooling, produced from biomass;

'Heating and/or cooling from renewable sources' means energy produced by using solar radiation, geothermal water, biomass combustion, alternative sources and waste heat from production and energy processes;

'District heating' or **'district cooling'** means the distribution of thermal energy in the form of steam, hot water or chilled liquids, from a central source of production through a network to multiple buildings or sites, for the use of space or process heating or cooling;

'Hydrothermal energy' means energy stored in the form of heat in surface water.

REFERENCES:

1. Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market;

2. Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings;

3. 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;

4. Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC;

5. Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds;

6. 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 amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC;

7. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora;

8. Excise Duties and Tax Warehouses Act (promulgated: SG No 91 of 15 November 2005; last amended: No 95 of 1 December 2009);

9. Biological Diversity Act (promulgated: SG No 77 of 9 August 2002; last amended: No 103 of 29 December 2009);

10. Water Act (promulgated: SG No 67 of 27 July 1999; last amended: No 103 of 29 December 2009);

11. Renewable and Alternative Energy Sources and Biofuels Act (promulgated: SG No 49 of 19 June 2007; last amended: No 102 of 22 December 2009);

12. Forests Act (promulgated: SG No 125 of 29 December 1997; last amended: No 103 of 29 December 2009);

13. Access to Public Information Act (promulgated: SG No 55 of 7 July 2000; last amended: No 104 of 5 December 2008);

14. State Property Act (promulgated: SG No 44 of 21 May 1996; last amended: No 18 of 5 March 2010);

15. Energy Act (promulgated: SG No 107 of 9 December 2003; last amended: No 103 of 29 December 2009);

16. Energy Efficiency Act (promulgated: SG No 98 of 14 November 2008; last amended: No 15 of 23 February 2010);

17. Plant Protection Act (promulgated: SG No 91 of 10 October 1997; last amended: No 82 of 16 October 2009);

18. Protected Areas Act (promulgated: SG No 133 of 11 November 1998; last amended: No 103 of 29 December 2009);

19. Hunting and Game Preservation Act (promulgated: SG No 78 of 26 September 2000; last amended: No 92 of 20 November 2009);

20. Local Taxes and Levies Act (promulgated: SG No 117 of 10 December 1997; last amended: No 95 of 1 December 2009);

21. Investment Promotion Act (promulgated: SG No 97 of 24 October 1997; last amended: No 18 of 5 March 2010);

22. Agricultural Land Protection Act (promulgated: SG No 35 of 24 April 1996; last amended: No 103 of 29 December 2009);

23. Environmental Protection Act (promulgated: SG No 91 of 25 September 2002; last amended: No 46 of 18 June 2010);

24. Support for Farmers Act (promulgated: SG No 58 of 22 May 1998; last amended: No 85 of 27 October 2009);

25. Soils Act (promulgated: SG No 89 of 6 November 2007; amended: No 80 of 9 October 2009);

26. Fisheries and Aquaculture Act (promulgated: SG No 41 of 24 April 2001; last amended: No 82 of 16 October 2009);

27. Spatial Planning Act (promulgated: SG No 1 of 2 January 200; last amended: No 41 of 1 June 2010);

28. Clean Ambient Air Act (promulgated: SG No 45 of 28 May 1996; last amended: No 41

of 1 June 2010);

29. Ordinance No 1 of 30 July 2003 on the nomenclature of the types of construction works (issued by the Ministry for Regional Development and Public Works; promulgated: SG No 72 of 15 August 2003);

30. Ordinance No 14 of 15 June 2005 laying down the technical rules and norms for the design, construction and use of sites and facilities for electricity generation, transformation, transmission and distribution (issued by the Ministry for Regional Development and Public Works and the Ministry of Energy and Energy Resources; promulgated: SG No 53 of 28 June 2005; amended: No 73 of 5 September 2006);

31. Ordinance No 15 of 28 July 2005 laying down the technical rules and norms for the design, construction and use of sites and facilities for heat generation, transformation, transmission and distribution (issued by the Ministry for Regional Development and Public Works and the Ministry of Energy and Energy Resources; promulgated: SG No 68 of 19 August 2005);

32. Ordinance No 16-334 of 6 April 2007 on heat supply (issued by the Ministry of Economy and Energy; promulgated: SG No 34 of 24 April 2007; last amended: No 45 of 16 June 2009);

33. Ordinance No 2 of 31 July 2003 on bringing into service construction works in the Republic of Bulgaria and on the minimum warranty periods for finished construction works, facilities and construction sites (issued by the Ministry for Regional Development and Public Works; promulgated: SG No 72 of 15 August 2003);

34. Ordinance No 25 of the Ministry for Agriculture and Food of 29 July 2008 on the conditions and procedure for granting financial assistance under measure “Basic Services for the Economy and Rural Population” of the Rural Development Programme 2007-2013 (promulgated: SG No 72 of 15 August 2008);

35. Ordinance No 3 on the on the set-up of electrical installations and electricity lines (issued by the Ministry of Energy and Energy Resources; promulgated: SG No 90 of 13 October 2004);

36. Ordinance No 3 of 31 July 2003 on drawing up acts and reports during construction (issued by the Ministry for Regional Development and Public Works; promulgated: SG No 72 of 15 August 2003);

37. Ordinance No 4 of 14 August 2003 on the design, construction and operation of

electrical installations in buildings (issued by the Ministry for Regional Development and Public Works and the Ministry of Energy and Energy Resources; promulgated: SG No 76 of 29 August 2003);

38. Ordinance No 5 of 28 December 2006 on technical data sheets of constructions (issued by the Ministry for Regional Development and Public Works; promulgated; SG No 7 of 23 January 2007);

39. Ordinance No 6 of 9 June 2004 on the connection of electricity producers and consumers to the electricity transmission and distribution networks (issued by the Ministry of Energy and Energy Resources; promulgated: SG No 74 of 24 August 2004; last amended: No 25 of 5 March 2008);

40. Ordinance No 7 of 2004 on energy efficiency, heat storage and energy saving in buildings (issued by the Ministry for Regional Development and Public Works; promulgated: SG No 5 of 2005; amended: No 85 of 2009);

41. Ordinance No 7 of 22 December 2003 laying down rules and norms for the spatial development of the separate types of territories and planning areas (issued by the Ministry for Regional Development and Public Works; promulgated: SG No 3 of 13 January 2004);

42. Ordinance No 8 of 14 June 2001 on the scope and content of development schemes and plans (issued by the Ministry for Regional Development and Public Works; promulgated: SG No 57 of 2001);

43. Ordinance No 8 of 9 June 2004 on the conditions and procedure for pursuing the activities of electricity system and distribution network operators and the activities of operational duty personnel of electricity facilities (issued by the Ministry of Energy and Energy Resources; promulgated: SG No 79 of 10 September 2004);

44. Ordinance No 9 of 9 June 2004 on the technical operation of power plants and networks (issued by the Ministry of Economy and Energy; promulgated: SG No 72 of 17 August 2004);

45. Ordinance on the conditions and procedure for assessing the compatibility of plans, programmes, projects and investment proposals with the subject matter and objectives of protecting the areas of conservation, in force on 11 September 2007 (adopted by Decree No 201 of the Council of Ministers of 31 August 2007; promulgated: SG No 73 of 11 September 2007);

46. Ordinance on licensing the activities in the energy sector (adopted by Decree No 124

of the Council of Ministers of 10 June 2004; last amended: No 93 of 24 November 2009);

47. Ordinance on regulating the prices of electric power (adopted by Decree No 35 of the Council of Ministers of 20 February 2004; promulgated: SG No 17 of 2 March 2004; amended: SG No 62 of 31 July 2007);

48. Ordinance on the conditions and procedure for carrying out environmental assessments of plans and programmes (adopted by Decree No 139 of the Council of Ministers of 24 June 2004; promulgated: SG No 3 of 2006);

49. Ordinance on the conditions and procedure for carrying out environmental impact assessments (adopted by Decree No 59 of the Council of Ministers of 7 March 2003; promulgated: SG No 25 of 18 March 2003);

50. National Long-term Programme for the Promotion of the Use of Biomass 2008-2020, adopted by Decision No 388 of the Council of Ministers of 20 June 2008 on the issue of integrated permits (adopted by Decree No 62 of the Council of Ministers of 12 March 2003; promulgated: SG No 26 of 21 March 2003);

51. National Long-term Programme for the Promotion of the Use of Renewable Energy Sources 2005-2015, December 2005 (drawn up in pursuance of Order No RD 14/415 of the Minister of Energy and Energy Resources of 11 October 2004 assigning to the Executive Director of the Energy Efficiency Agency the operational management of the elaboration of the National Long-term Programme for the Promotion of the Use of Renewable Energy Sources on the grounds of Article 4(2)(9) of the Energy Act);

52. National Long-term Programme for the Promotion of the Use of Biofuels in Transport 2008-2020 (adopted by resolution under item 2 of Minutes No 43 of the meeting of the Council of Ministers on 15 November 2007);

53. National Long-term Programme for the Promotion of the Use of Biomass 2008-2020 (adopted by Decision No 388 of the Council of Ministers of 20 June 2008);

54. National Programme for the Renovation of Residential Buildings in the Republic of Bulgaria (adopted by Decision of the Council of Ministers of 20 January 2005);

55. Grid Code (issued by the State Energy and Water Regulatory Commission; promulgated: SG No 67 of 2 August 2004);

56. Distribution Grid Code (adopted by decision of the State Energy and Water Regulatory Commission of 18 June 2007; SG No 66 of 2007);

57. Rules on the conditions and procedure for access to the electricity transmission and distribution networks. State Energy and Water Regulatory Commission (promulgated: SG No 67 of 2 August 2004);

58. First National Energy Efficiency Action Plan 2008 – 2010 (adopted by Decision of the Council of Ministers of 4 October 2007);

59. Drawing up estimates for the utilisation of the renewable energy potential in Bulgaria covering the period up to 2020. 2009 Report. Ministry of Economy, Energy and Transport;

60. Commission Decision of 30 June 2009 establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC of the European Parliament and of the Council (notified under document number C(2009) 5174) (text with EEA relevance) (2009/548/EC);

61. SEWRC Decision No TS-018 of 31 March 2010 setting a preferential price for the sale of electricity from renewable energy sources and hydropower plants of up to 10 MW installed capacity;

62. Strategy for the Financing of Building Insulation for Improving Energy Efficiency and Programme for its Implementation (adopted by Decision of the Council of Ministers of 14 July 2005);

63. Ordinance No 9 of 2 May 2007 on the conditions and procedure for providing support to producers of energy crops (promulgated: SG No 37 of 8 May 2007; amended: No 4 of 15 January 2008);

64. Tariff of Fees collected by the Ministry of the Environment and Waters, in force on 16 October 2004 (adopted by Decree No 253 of the Council of Ministers of 20 September 2004; promulgated: SG No 86 of 1 October 2004; amended: No 22 of 14 March 2006, No 20 of 6 March 2007, No 39 of 15 May 2007, No 79 of 2 October 2007, No 53 of 10 June 2008, No 6 of 23 January 2009; recast: SG No 9 of 3 February 2009);

65. Tariff of Fees collected for reassignment of agricultural land (adopted by Decree No 112 of the Council of Ministers of 31 May 2002; promulgated: SG No 56 of 7 June 2002; amended: No 10 of 6 February 2004, No 75 of 12 September 2006, No 95 of 4 November 2008).