FIRST NATIONAL ENERGY EFFICIENCY ACTION PLAN 2008 - 2010

June 2007, Sofia

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List of abbreviations

EEA	-	Energy Efficiency Agency
AEAF	-	Agency for Economic Analysis and Forecasting
ASME	-	Agency for Small and Medium-sized Enterprises
GDP	-	gross domestic product
BNB	-	Bulgarian National Bank
SEWRC	-	State Energy and Water Regulatory Commission
AV	-	added value/s
EE	-	energy efficiency
EI	-	energy intensity
EU	-	European Union
ESM	-	energy saving measure
ES	-	energy service
ESCO	-	energy service company
TA	-	Traffic Act
EEA	-	Energy Efficiency Act
PPA	-	Public Procurement Act
FEI	-	final energy intensity
FIEC	-	final inland energy consumption
FEC	-	final energy consumer
UE	-	useful efficiency
CM	-	Council of Ministers
SME	-	small and medium-sized enterprise
MV	-	motor vehicles
NA	-	National Assembly
EEAP	-	Energy Efficiency Action Plan
EIPC	-	primary energy intensity
PEC	-	primary energy consumption
SEC	-	stimulated energy consumers
TWC	-	tradable white certificates
TFE	-	traders in fuels and energy
EEF	-	Energy Efficiency Fund
EECI	-	Energy Efficiency Centre in Industry
kgoe	-	kilogramme of oil equivalent
ktoe	-	thousand tons of oil equivalent
MWh	-	10^6 watt hours
GWh	-	10^9 watt hours

1. Executive Summary

This Action Plan is the first of the three National Energy Efficiency Action Plans 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. The reporting period for the achievement of the indicative target under the Directive is 2008 – 2016. The primary aim is that all Member States achieve an energy and fuel savings target of 9 % of the average final inland energy consumption for the period 2001-2005 for the ninth year of application of this Directive. The target above does not apply to energy consumers covered by Directive 2003/87/EC of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community.

The first three-year Action Plan covers the period 2008 – 2010 and sets an intermediate indicative energy and fuel savings target for this period of 3 % of the final inland energy consumption within the scope of the Directive average for the period 2001 - 2005. The methodology used and the peculiarities in the setting of this intermediate target have been considered in detail below.

To set the target, use has been made of aggregated and individual data on energy consumption provided by the National Statistical Institute. The material balances used do not differ from those provided to Eurostat.

Bulgaria has a significant potential for implementation of energy efficiency improvement measures. To assess consumption in the short and medium term, account has been taken of the increasing energy consumption, especially in the residential and transport sector.

Experience in applying bottom-up methods to assess savings shows that the energy efficiency improvement programmes and measures implemented so far are not enough to achieve the target set by the Directive. It is necessary to attract more funds from the private sector, for which stronger incentives need to be created.

In order to verify the effects of energy efficiency improvement measures, it is necessary to develop specialised methods for assessment of the benefits of implemented programmes and measures.

In the course of implementation of the Plan, Bulgaria should further introduce significant normative, tax, financial and organisational measures for the complete implementation and fulfilment of the Directive.

The implementation of measures needed to achieve the indicative target requires significant financial resources to be mobilised, energy efficiency improvement activities committed by the state to be expanded and the energy market to be further liberalised, especially on the supply side of energy services, as well as to develop public-private partnerships in the field of energy efficiency.

It is necessary to study and analyse the conditions and anticipated effects of the development of the market for energy services, to introduce the tradable white certificates (TWC) scheme and at the same time to continue the activities related to the introduction of the “energy savings voluntary agreements” and other market-oriented schemes, which will predetermine the subsequent specific decisions on the structuring and implementation of these schemes.

2. Overall national target

2.1. Calculation of the national target

In pursuance of the Directive, Bulgaria has adopted a national indicative energy savings target of not less than 9 % of the final inland energy consumption for 9 years by 2016 (1% per year on the average), which means that the country should ensure fuel and energy savings to the amount of **627 ktoe**.

The absolute amount of the indicative target for Bulgaria, which the country should prove as a sum of the energy savings in the following 9 years, is determined on the basis of data on final inland energy consumption in the past five years – from 2001 until 2005 – about which official statistical data are available, cf. Table 2.1.

2.2. Calculation of the intermediate national target

In order to calculate the intermediate national target, account has been taken of the fact that the proposed additional energy efficiency improvement measures and incentives, such as the expansion of the market for ESCO services, the signature of voluntary agreements, the introduction of white certificates and other schemes are new for the country and require several years to be implemented, as well as relevant preliminary studies and analyses to be made. Furthermore, a detailed analysis has been made of the energy efficiency situation in the country and the actual opportunities for implementation of EEI measures under the economic conditions in Bulgaria.

In this respect, Bulgaria has taken a tentative approach to the setting of the intermediate target in the first three-year Action Plan. The intermediate target amounts to **209** ktoe of saved energy and fuels by the end of 2010, which represents **3%** of the average amount of final inland energy consumption within the scope of the Directive for the period 2001-2005, cf. Figure 2.1.

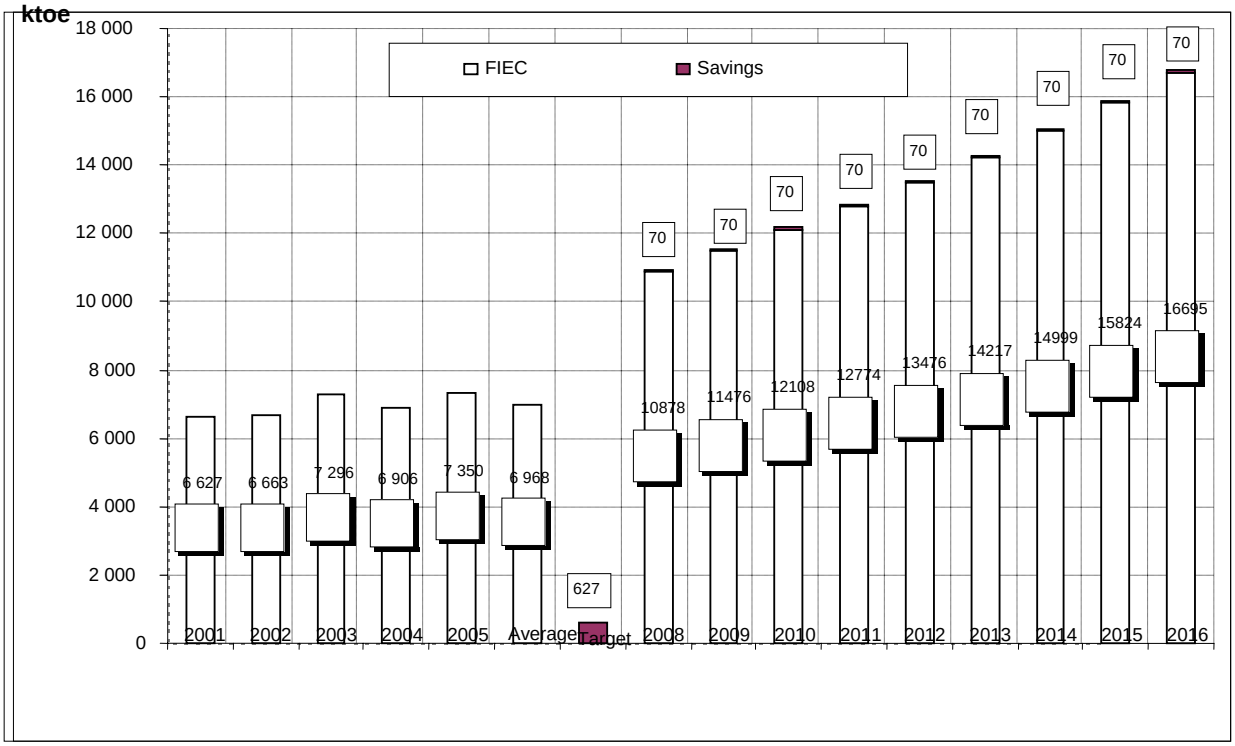

Figure 2.1: FIEC and savings

Table 2.1: Final inland energy consumption within the scope of the Directive and setting of the indicative target, **ktoe**

Year	2001			2002			2003			2004			2005		
	Other	Incl. electricity	Total	Other	Incl. electricity	Total	Other	Incl. electricity	Total	Other	Incl. electricity	Total	Other	Incl. electricity	Total
Final inland energy consumption (FIEC)	**6 304**	**2 110**	**8 414**	**6 454**	**2 067**	**8 521**	**7 026**	**2 153**	**9 179**	**6 786**	**2 122**	**8 908**	**7 069**	**2 207**	**9 276**
Exempted energy consumption:	**1 466**	**321**	**1 787**	**1 542**	**316**	**1 858**	**1 543**	**340**	**1 883**	**1 602**	**400**	**2 002**	**1 544**	**382**	**1 926**
Of which:															
Covered by the Emissions Trading (ET) Directive	1 318	321	1 639	1 391	316	1 707	1 360	340	1 700	1 430	400	1 830	1 344	382	1 726
Air transport	148	0	148	151	0	151	183	0	183	172	0	172	200	0	200
FIEC in scope of ESD	**4 838**	**1 789**	**6 627**	**4 912**	**1 751**	**6 663**	**5 509**	**1 787**	**7 296**	**5 184**	**1 722**	**6 906**	**5 525**	**1 825**	**7 350**
Of which:															
Residential sector	1 195	838	2 033	1 393	800	2193	1 504	800	2304	1 392	754	2146	1 349	778	2127
Tertiary sector	327	442	769	257	485	742	248	509	757	202	484	686	259	532	791
Industry (ESD scope)	1 298	456	1 754	1 135	413	1548	1 397	425	1822	1 142	435	1577	1 230	464	1 694
Transport (without air and water)	1 761	39	1 800	1 866	39	1 905	2 098	38	2 136	2 188	36	2 224	2 405	35	2 440
Agriculture	257	14	271	259	14	273	262	15	277	260	13	273	281	16	297

Note: In the period 2001 – 2005, the consumption of the water transport sector is less than 1 ktoe per year

RESULT

FIEC average for the period 2001-2005 (over 5-year period)	**6 968 ktoe**	**81 024 GWh**
Energy savings target in 2016, 9%	**627 ktoe**	**7 291 GWh**
Energy savings target in 2010, 3%	**209 ktoe**	**2 430 GWh**

2.3. Specific aspects in the calculation of the national target

2.3.1. Macroeconomic indicators

Notwithstanding the relatively high energy intensity[1] of the Bulgarian economy and the fact that the country has a significant potential for implementation of cost-effective energy efficiency improvement measures, following a period of stabilisation, the final inland energy consumption[2], and with it the primary[3] consumption too, begins to increase. (cf. Figure 2.2 and Figure 2.3.)

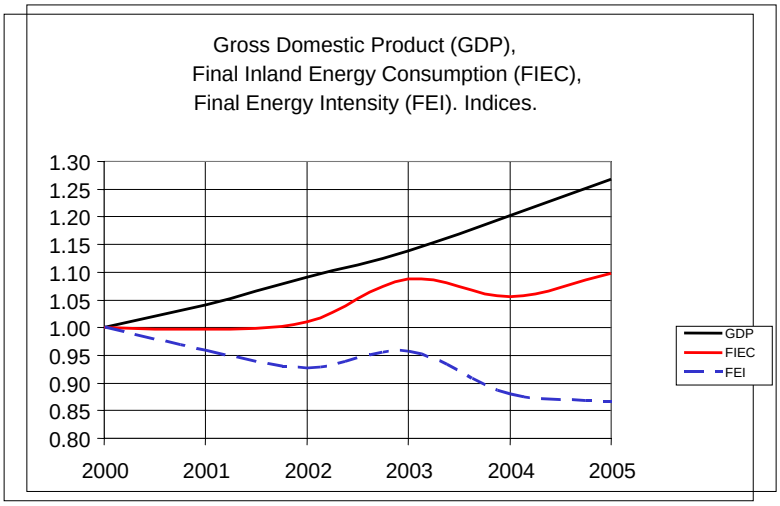

Figure 2.2: Final energy intensity – historical development[4]

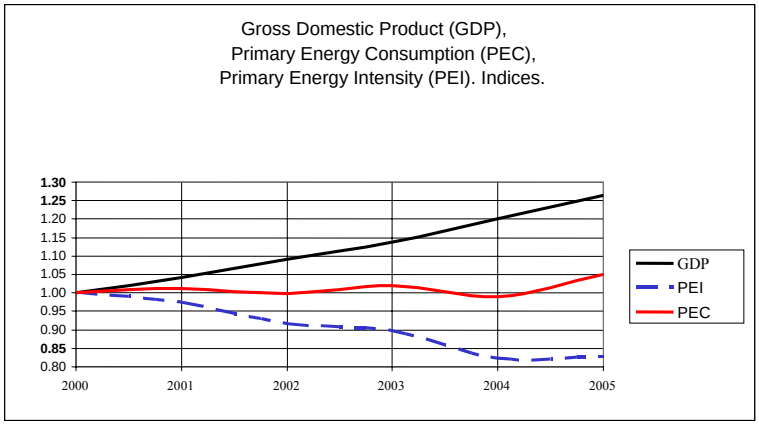

Figure 2.3: Primary energy intensity[5] – historical development

The growth of energy consumption in the country is attributable to:

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[1] The Directive defines the concept of " energy efficiency" as " a ratio between an output of performance, service, goods or energy, and an input of energy" . To measure energy efficiency, its reciprocal quantity called " energy intensity" is used.

[2] The sum of fuels and energy provided to final energy consumers.

[3] The sum of fuels and energy used by one country (imports and own production).

[4] A ratio of the energy provided to final customers to the GDP.

[5] A ratio of the energy used by the entire country to the GDP.

- **The high rate of GDP growth** and the increasing quantities of energy resources needed to ensure it;
- **The obsolete technologies and equipment in the energy-consuming sectors** of the Bulgarian industry: a symptom of insufficient investments and inadequate level of energy management;
- **The growing consumption in the transport sector:** slow renovation of the MVs for transportation of goods and those for transportation of passengers in the public transport sector, a natural tendency of increased use of private cars towards the normal European levels;
- **The growing consumption in the residential sector:** a tendency of increased residential comfort towards the normal European levels.

Characteristic of the past few years is the increased use of liquid fuels, reaching 39% of the final inland energy consumption in 2005. The main user of liquid fuels is the motor transport sector, as well as hospitals, schools and other public-sector buildings using this type of fuel for heating purposes.

In defining priority energy efficiency improvement measures, account should be taken of the growing use of liquid fuels and wood.

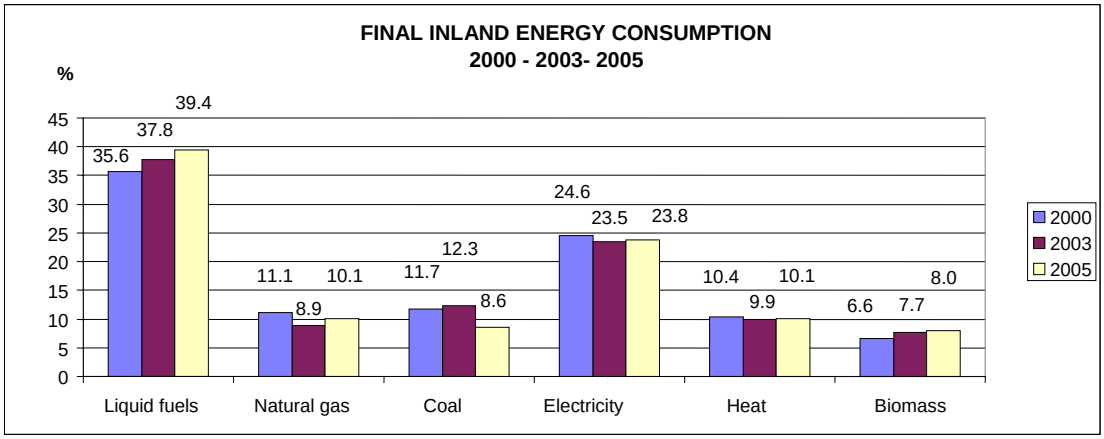

Figure 2.4: Final inland energy consumption in the period 2000-2005.

2.3.2. *Interface with the sectors covered by the Directive*

In line with the requirements of the Directive, from the total final inland energy consumption average in the period 2001-2005 is deducted the consumption of installations, final energy consumers, which fall within the scope of the Emissions Trading Directive. The latter can mainly be classified in the following sectors: *Metallurgy*, *Non-metal Mineral Raw Materials*, *Chemical Industry* and *Cellulose and Paper*. As it is impossible to separate the energy consumption of installations from the energy consumption of the legal entities that own these installations, data about the whole undertakings, and not about separate installations, have been used in the calculation of the final inland energy consumption within the scope of the Directive.

Since the Directive does not cover the air and water transport sector, the consumption of paraffin in the transport sector has also been excluded from the final inland energy consumption.

2.3.2.1. Conversion factors

The data used for the final inland energy consumption, as well as the data on the energy consumption by sectors and types of fuels and energy have been provided by the National Statistical Institute, which is the national statistical agency.

The energy balances prepared by the National Statistical Institute are based upon the annual material balances of final energy consumers converted in the Institute by means of standardised conversion factors. The same material balances are also provided to EUROSTAT.

The methods and factors applied by the National Statistical Institute have not been changed in the five-year period under assessment.

Bulgaria prefers to operate with the methodologies and factors adopted in national statistics and harmonised with Eurostat, as this ensures the future use of the information collected and processed by the national statistical agency.

2.3.3. Sectoral allocation of the indicative target

The sectoral allocation of the indicative target is important in order to streamline the measures and appoint the authorities and organisations that should be involved in the implementation thereof.

Figure 2.5. shows consumption by sectors in 2005. In contrast to the allocation of the total final inland energy consumption, in which the industry sector has the biggest share (39%), it can be seen that **62% of the final inland energy consumption covered by the Directive is concentrated in the transport and residential sectors.**

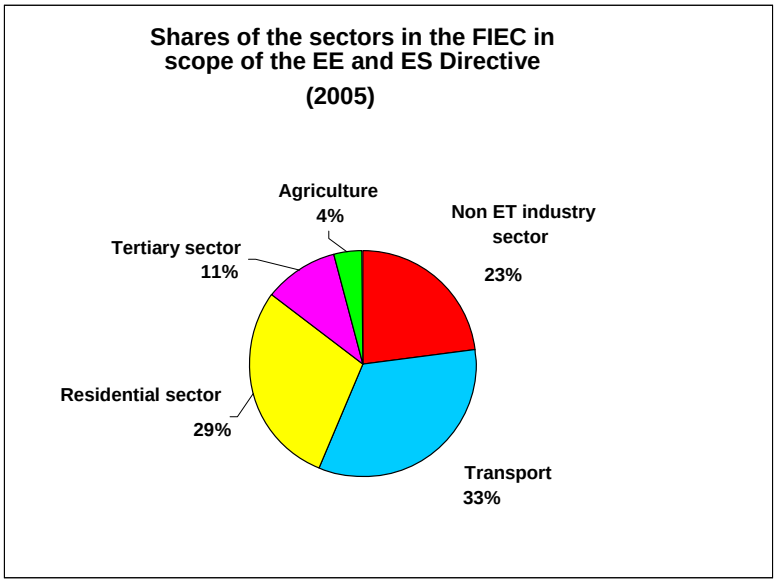

Figure 2.5: Structure of the final inland energy consumption in scope of the Directive (sectoral allocation)

A detailed study of the historical development of the energy consumption in the different sectors shows the following:

- The residential sector forms its energy consumption on the basis of the income growth, which is focused in two main directions with opposite effects: purchase of additional quantities of fuels and implementation of energy saving measures. In the period 2001-2005, the specific energy consumption of the Bulgarian household hovered around 0.78 toe. This is about two times less than the energy consumption of the European household and it may be expected that, with the growth in purchasing power, the trend of convergence towards the European level will continue to strengthen. The Bulgarian residential sector consumes significant quantities of low-efficiency solid fuels instead of high-efficiency electricity and heat.
- The agricultural sector is relatively insensitive to market developments.

- The tertiary sector contains both entities with market behaviour and such with non-market behaviour (public and municipal administration). In the period 2001 – 2004, the tertiary sector improved its energy efficiency. A possible explanation is that the funds put into the sector from various sources, including the state budget, have begun to bear fruit.
- On the average, the transport sector has increased the consumption of liquid fuels by 147 ktoe per year. This is about two times more than the average annual target for Bulgaria. A serious aggravating factor for the rapid growth of consumption of liquid fuels is the increasing number and annual run of private cars as a result of the growing purchasing power of Bulgarian citizens and the natural tendency towards reaching the European standard of living. In the period 2000-2005, the average growth of consumption of liquid fuels in the transport sector was 8.2% per year, i.e. by around 2-3% steeper than the GDP growth. The average growth of energy intensity of the sector for the same period was 2.2% per year.
- The non ET industry sector consists mainly of the so-called "SMEs", which implement energy efficiency improvement measures relatively quickly and are more sensitive to energy prices.

On the whole, the consumers covered by this Directive (with the exception of the transport sector) have less influence on the high degree of energy intensity of the GDP than those covered by the Emissions Trading Directive.

Clearly, there are four strategic directions for energy efficiency improvement measures under the national peculiar conditions:

→ *residential sector* - electricity and heat
→ *industry* - electricity and heat
→ *motor transport* (private cars) - petrol

The minimum target is to slow down the growth of consumption of liquid fuels, electricity and heat.

Notwithstanding the fact that the motor transport sector is the biggest consumer of liquid fuels, due consideration should be given to the implementation of EEI measures in public-sector and municipal buildings (hospitals, social institutions, day-care centres, schools and administrative buildings), which still use liquid fuels for heating purposes.

On the basis of the above analyses and the actual opportunities for implementation of EEI measures in the separate sectors, the sectoral allocation of the indicative target of the first three-year action plan has been given in Table 2.2. It is important to note that this allocation has not been made in proportion to the shares of the different sectors of final inland energy consumption. This allocation has been made by taking account of the multiplier effect of the implementation of measures and programmes funded by operational programmes and by the state budget.

Table 2.2: Sectoral allocation of the indicative target

Economic sectors	Allocation of the 3.0% total target in 2010	Index	Note
	ktoe	%	
Residential sector	61	29	Objective need of consumption growth in the residential sector.
Tertiary sector	29	14	Multiplier effect of the implementation of measures funded by the state budget.
Industry	48	23	-

Transport	63	30	Objective need of consumption growth resulting from private cars.
Agriculture	8	4	-
Total	209	100	

2.3.4. References used

Aggregated data on final inland energy consumption and on the energy consumption by sectors and types of fuels and energy for the most recent statistically available five-year period (2001-2005) have been officially published in the Statistical Annuals issued by the National Statistical Institute. Aggregated data on the energy consumption of undertakings, owners of installations, which fall within the scope of the ET Directive, have been provided by the National Statistical Institute upon a special request of the Ministry of Economy and Energy.

2.4. Base line of final inland energy consumption

Bulgaria keeps a base line of final inland energy consumption in the next 9 years corresponding to the increase in final inland energy consumption at a rate equal to the GDP growth rate. Consequently, the country will prove energy savings in the conditions of an annual increase in final inland energy consumption.

In consideration of the foregoing, this plan establishes a 3% indicative target in 2010, as indicated in p. 2.2. The values of final inland energy consumption at the end of the three Action Plans (the years 2010, 2013 and 2016), proving the indicative targets (3%, 6% and 9%) under the top-down method are presented in Table 2.3.

Table 2.3

Year	2008	2009	**2010**	2011	2012	**2013**	2014	2015	**2016**
Index of GDP growth: estimate	1.055	1.055	**1.055**	1.055	1.055	**1.055**	1.055	1.055	**1.055**
Expected FIEC under a normal market development, ktoe	10878	11476	**12108**	12774	13476	**14217**	14999	15824	**16695**
Indicative target, ktoe			**209**			**418**			**627**
FIEC after implementation of EEI measures, ktoe			**11898**			**13799**			**16068**

Note: The values of the expected final inland energy consumption have been determined through its value for 2005: 9 276 ktoe.

3. Sectoral presentation and assessment of energy efficiency improvement programmes, energy services, and other measures to improve energy efficiency

3.1. Residential sector

In 2005, the share of fuels and energy used by the Bulgarian residential sector was about 29% of the final inland energy consumption covered by the Directive. Electricity has the biggest share of energy consumption in the residential sector. It was 37% in 2005, while in the other EU Member States it was up to three times less. The high share of electricity in the energy consumption of the residential sector is due to the low extent of domestic gasification

in the country. In 2005, the share of consumed wood was about 28% and significantly exceeded the share of purchased heat (21%).

The energy consumption of the Bulgarian residential sector is about two times less than that in the other EU Member States.

3.1.1. Overview table of all EEI measures in the residential sector

№	Title of the EEI measure	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
1.	Residential Sector – Renovation of Residential Buildings in line with the **National Renovation Programme for Residential Buildings in the Republic of Bulgaria**	Priority retrofitting of large-panel and other multi-family residential buildings Tying up this process with the necessary inventory-taking and energy auditing as well as certification of buildings. The more important obligations in this process are as follows: **For the state:** to provide financial incentives for the renovation of buildings; **For the municipalities:** to adopt new town plans and long-term municipal programmes for the modernisation of housing complexes; **For the energy supply companies:** to update energy meters and the energy distribution and supply network.	2006 - 2020	
2.	Residential Sector – Mandatory Measures for Efficient Illumination **<u>introduced in the</u>** **Regulation on the essential requirements and conformity assessment of ballasts for fluorescent lamps in respect of energy efficiency requirements**	Modernising lighting without reducing the luminance level and lighting quality – through the use of compact fluorescent lamps (CFL)	Since 1 February 2005	

№	Title of the EEI measure	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
	Regulation on the technical use of energy equipment **–** **Chapter Six – Energy Efficiency Management and Control**		Since 11 March 2005	
3.	Residential Sector – Mandatory Labelling of Domestic Appliances **introduced in the** **Regulation on the labelling requirements of domestic appliances in respect of their consumption of energy and other resources**	Creating an information environment at the time of purchase of domestic electric appliances and an opportunity for selection of energy-efficient equipment.	Since 11 August 2006	
4.	Residential Sector – Minimum Efficiency Standards for Electric Appliances **introduced in the** **Technical Requirements to Products Act** **and** **Regulation on the essential requirements and conformity assessment of domestic electric refrigerators, freezers and combinations thereof**	Encouraging the purchase of energy-efficient appliances through harmonisation of the standards for domestic appliances and labelling in respect of energy consumption, noise level and other characteristics. Information on energy consumption motivates the choice of consumers at the time of purchase not only in respect of the price of the appliance but also in respect of the energy costs at the time of operation	Since 1 October 1999; amended, 15 September 2006 Since 5 March 2004	
5.	Residential Sector – Individual Metering (residential buildings)	Updating the provisions for individual metering of heat consumption, for individual regulation of heating and for the	Since 24 April 2007	

№	Title of the EEI measure	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
	requirements introduced in **Regulation № 2 on heat supply** The individual metering and payment of energy costs in residential buildings that are communal ownership have been established in Regulation № 2 on heat supplies of 24 April 2007. It describes the methods of allocation of the heat consumption of all owners, as well as that of domestic hot water in residential buildings with a common terminal station.	formation of individual bills for heat consumption.		
6.	Residential Sector – Maximum Indoor Temperatures in the Heating Period have been established in Regulation № 15 on technical rules and norms for the design, construction and use of sites and facilities for generation, transmission and distribution of heat	Ensuring reliable and efficient heating and cooling systems; efficient management of the heat supply process. Improving the energy performance of the existing housing stock through renovation.	Since March 2006	
7.	Residential Sector – Minimum Indoor Temperatures in Buildings in the Heating Period **introduced in** **Regulation № 7 on heat**	Improving the energy performance of the existing housing stock through renovation, which is to result in a reduction of heat losses through the enclosing structures and components, improving the performance characteristics of dwellings and achieving thermal	Since 15 December 2004	

№	Title of the EEI measure	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
	saving and economy of energy in buildings	comfort		
8.	Residential Sector – Mandatory Insulation of Pipes for Transmission and Distribution of Heat **established in** **Regulation № 15 on technical rules and norms for the design, construction and use of sites and facilities for generation, transmission and distribution of heat**	Mandatory pipe insulation in buildings has been laid down in the provisions of Regulation № 15/28.07.2007 on technical rules and norms for the design, construction and use of sites and facilities for generation, transmission and distribution of heat. Mandatory pipe insulation has been set forth in Section III *Tubing* of Chapter Nine of the Regulation, where the obligation for the installed insulation to comply with EN 12828 is imposed. Reducing energy loss over the heat transmission network and improving the technical characteristics of the system	Since March 2006	
9.	Residential Sector – EE Fund	Energy Efficiency Fund The Fund provides non-gratuitous financial assistance to energy efficiency projects eligible for funding by extending loans and/or by providing partial guarantees for loans extended by other financial credit institutions.	Set up with the EEA	
10.	Residential Sector – Standard for the Energy Performance of Buildings **Regulation № 18 on the energy performance of sites** **Regulation № 7 on heat saving and economy of energy in buildings** **Regulation № 5 of 2006 on the technical**	Improving the energy performance of the existing housing stock through renovation, which is to result in a reduction of heat losses through the enclosing structures and elements, improving the performance characteristics of dwellings and achieving thermal comfort; Utilisation of high-efficiency technology and materials in new housing and in renovations of	Since 12 November 2004 Since 15 December 2004 Since 27 January 2007	

№	Title of the EEI measure	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
	certificates of construction works	existing buildings; A technical certificate is issued for the whole construction work ("new housing" or "reconstruction, major renovation, total renovation, restructuring", for which a building permit is required and which may be considered to be new housing, when they are started after 26 January 2007). The technical certificate is part of the construction papers of the construction work. It contains in a generalised form all data pertaining to the main characteristics of the construction work: type of construction system, type of structure, load capacity, seismic stability, degree of flammability and life-cycle of construction, sanitary - hygienic and environmental requirements, limit values of the noise level in the environment**, energy performance value expressed as an annual amount of consumed energy, primary energy, in environmental equivalent, heat transfer coefficients of enclosing components of buildings, components of the secured accessible environment, etc.** The technical certification will be carried out in the period 2007 – 2016, depending on the complexity and category of construction works, the deadline for technical certificates of existing construction works, public and municipal property, being 31 December 2011.		

№	Title of the EEI measure	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
11.	Residential Sector – Control Systems of Heating Systems **introduced in** **Regulation № 15 on technical rules and norms for the design, construction and use of sites and facilities for generation, transmission and distribution of heat**	Ensuring reliable and efficient automation and control of heating systems in buildings, taking into account outdoor climatic conditions and the wish of consumers	Since March 2006	
12.	Residential Sector – Minimum Efficiency Standards for Boilers **introduced in** **Regulation on the essential requirements and conformity assessment of hot-water boilers fired with liquid or gaseous fuels with regard to useful efficiency**	Allowing a cost-effective choice of energy carriers, burner units and facilities for residential buildings Implementing high-efficiency facilities and automatic control systems This Regulation establishes the essential requirements to hot-water boilers fired with liquid or gaseous fuels with regard to useful efficiency; This Regulation applies to boilers with a rated output of 4 to 400 kW as well as to components of boilers, i.e. boiler bodies placed separately on the market designed to have a burner or burners fitted, burners designed to be fitted to boiler bodies	Since 30 June 2005	
13	**Residential Sector – Residential Energy Efficiency Credit Line (REECL).**	Under the credit facility, loans are extended to individuals and households in order to support specific energy efficiency improvement measures in multi-family and single-family buildings through a pool of Bulgarian commercial banks. Following the	September 2005 – end of 2008. An extension of this period is possible.	As at June 2007, the programme has financed 7770 projects totalling BGN 21.5 million, of which grants

№	Title of the EEI measure	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
		successful completion of the energy savings project, the bank reimburses 20% of the capital expenditure under the project but not more than EUR 850 per household.		under the Kozloduy International Decommissioning Fund – BGN 3.7 million. The projects financed so far are expected to result in electricity savings of 50 474 MWh per year.

Description of individual EEI measures in the residential sector

3.1.2.1.

Title of the EEI measure	Renovation of residential buildings
Category	Category: Regulation Subcategory: Building Codes and Enforcement
Regional application	Measure effective in the whole country
Target group	Households: having a 29% share of final energy consumption
End-use EEI action targeted	2006-2020 National Renovation Programme for Residential Buildings in the Republic of Bulgaria envisaging the following measures: • replacement of glazing: a significant reduction in leakage and good air-tightness with high-quality shaped metal and window sealings; • improvement of the heat insulation of walls, roofs, lofts and floors; • using new energy saving construction materials for insulation; • replacement of the existing heaters with more efficient ones;
Effectiveness	• The average economy of energy resulting from the implementation of engineering and technical measures will be about 25-35 kWh/m^2 total built-up area/year • The emission savings depending on the heating source and in 1 kWh energy at the consumer will be: - central heating: 272 gCO_2/kWh, - electricity-based heating: 683 gCO_2/kWh,

	- wood-based heating: 20 gCO_2/kWh, - coal-based heating: 445 gCO_2/kWh. • Social effects: the annual number of employed will vary between 2,000 and 8,000 people.
If available: expected or actual annual energy savings in 2016 and 2010	**Expected savings in 2016: 613,8 GWh (52,8 ktoe) per year.**
Status of implementation and exact timeframe	Measure implemented no earlier than 1995 and still effective in 2016

3.1.2.2.

Title of the EEI measure	**Mandatory Measures for Efficient Illumination**
Category	Category: Regulation Subcategory: Minimum Equipment Energy Performance Standards
Regional application	Measure effective in the whole country
Target group	Households: having a 29% share of final energy consumption
End-use EEI action targeted	Prepared: Regulation on the essential requirements and conformity assessment of ballasts for fluorescent lamps in respect of energy efficiency requirements and Regulation on the technical use of energy equipment – Chapter Six – Energy Efficiency Management and Control – *effective as from 11 March 2005* <u>The Regulation on the essential requirements establishes:</u> - the essential requirements for ballasts for fluorescent lamps in respect of energy efficiency requirements; - the assessment procedure and the ways of certifying conformity
Effectiveness	The power consumption of each ballast and its conformity with the essential requirements is ascertained by producers of ballasts

If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	Effective as from 1 February 2005

3.1.2.3.

Title of the EEI measure	**Labelling of domestic appliances**
Category	Category: Information and mandatory information measures Subcategory: Energy labelling schemes
Regional application	Measure effective in the whole country
Target group	Households: having a 29% share of final energy consumption
End-use EEI action targeted	Prepared: Regulation on the labelling requirements of domestic appliances in respect of their consumption of energy and other resources The Regulation establishes: - the procedure for provision of information to consumers of domestic electric appliances /*domestic refrigerators, freezers and combinations thereof, domestic washing machines, domestic dishwashers, domestic air-conditioners, domestic electric ovens, etc.*/ relating to the consumption of energy and other resources through labelling and information sheets; - the obligations of producers, importers and traders to provide and place labels on domestic appliances
Effectiveness	Information about the electricity consumption of domestic appliances ensured
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	Effective as from 11 August 2006

3.1.2.4.

Title of the EEI measure	**Minimum efficiency standards for electric appliances**

Category	Category: Regulation Subcategory: Standards and norms
Regional application	Measure effective in the whole country
Target group	Households: having a 29% share of final energy consumption
End-use EEI action targeted	Prepared: Technical Requirements to Products Act and Regulation on the essential requirements and conformity assessment of domestic electric refrigerators, freezers and combinations thereof
Effectiveness	Incentives are created for the purchase of efficient kitchen appliances
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	The Act is effective as from 1 October 1999, amended on 15 September 2006 The Regulation is effective as from 5 March 2004

3.1.2.5.

Title of the EEI measure	**Individual metering of heat consumption**
Category	Category: Information and mandatory information measures Subcategory: Metering and informative billing
Regional application	Measure effective in the whole country
Target group	Households: having a 29% share of final energy consumption
End-use EEI action targeted	Prepared: Regulation № 2 on heat supply
Effectiveness	Ensured: - individual metering and control of heat energy; - formation of individual bills for heat consumption of dwellings

If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	The Regulation is effective as from 24 April 2007

3.1.2.6.

Title of the EEI measure	**Maximum indoor temperatures in the heating period**
Category	Category: Regulation Subcategory: Standards and norms
Regional application	Measure effective in the whole country
Target group	Households: having a 29% share of final energy consumption
End-use EEI action targeted	Prepared: Regulation № 15 on technical rules and norms for the design, construction and use of sites and facilities for generation, transmission and distribution of heat
Effectiveness	Reliable and efficient use of heating and cooling systems, as well as efficient control of heat supply is ensured**.**
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	The Regulation is effective as from March 2006

3.1.2.7.

Title of the EEI measure	**Minimum indoor temperatures in buildings in the heating period**
Category	Category: Regulation Subcategory: Standards and norms
Regional application	Measure effective in the whole country
Target group	Households: having a 29% share of final energy consumption
End-use EEI action targeted	Regulation № 7 on heat saving and economy of energy in buildings
Effectiveness	Economy of energy and heat saving is ensured in residential buildings in line with the technical requirements and methods of calculation of the heating requirements, taking into account heat losses through enclosing structures and components in buildings, heat gains from indoor heat

	sources and solar exposure, climatic aspects, positioning and other specific requirements for buildings: in case of new housing and renovation.
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	The Regulation is effective as from 15 December 2004

3.1.2.8.

Title of the EEI measure	**Mandatory insulation of pipes for transmission and distribution of heat**
Category	Category: Regulation Subcategory: Standards and norms
Regional application	Measure effective in the whole country
Target group	Households: having a 29% share of final energy consumption
End-use EEI action targeted	Prepared: Regulation № 15 on technical rules and norms for the design, construction and use of sites and facilities for generation, transmission and distribution of heat
Effectiveness	Ensured good technical characteristics of the system and minimum losses over the heat transmission network
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	The Regulation is effective as from March 2006

3.1.2.9.

Title of the EEI measure	**Energy Efficiency Fund**
Category	Category: Financial instruments Subcategory: EE funds, loans, tax rebates; public-private partnership
Regional application	Measure effective in the whole country
Target group	Households: having a 29% share of final energy consumption
End-use EEI action targeted	The Energy Efficiency Fund has been set up with the EEA. The Energy Efficiency Fund (EEF) finances investment projects for energy efficiency improvement, including renovation and energy efficiency improvement of the housing stock, in all sectors and other cases of final energy

	consumption through the provision of partial credit guarantees or loans (independently or together with commercial banks) under simplified conditions.
Effectiveness	A revolving fund has been set up by means of a public-private partnership to support EEI measures.
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	The EEF has started to function in reality since 21 June 2005

3.1.2.10.

Title of the EEI measure	**Standard for the energy performance of buildings**
Category	Category: Regulation Subcategory: Standards and norms
Regional application	Measure effective in the whole country
Target group	Households: having a 29% share of final energy consumption
End-use EEI action targeted	Regulation № 18 on the energy performance of sites Regulation № 7 on heat saving and economy of energy in buildings Regulation № 5 of 2006 on technical certificates of construction works
Effectiveness	The energy consumption, economy of energy and heat saving, level of energy efficiency and certification of buildings have been established
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	Regulation № 7 and 18 were enforced in December 2004 Regulation № 5 was enforced in January 2007

3.1.2.11.

Title of the EEI measure	**Control systems of heating systems**
Category	Category: Regulation Subcategory: Standards and norms
Regional application	Measure effective in the whole country
Target group	Households: having a 29% share of final energy consumption
End-use EEI action	Prepared: Regulation № 15 on technical rules and norms for the design,

targeted	construction and use of sites and facilities for generation, transmission and distribution of heat
Effectiveness	Ensured reliable and efficient automatic control and management of heating systems in buildings
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	Effective as from March 2006

3.1.2.12.

Title of the EEI measure	**Minimum efficiency standards for boilers**
Category	Category: Regulation Subcategory: Standards and norms
Regional application	Measure effective in the whole country
Target group	Households: having a 29% share of final energy consumption
End-use EEI action targeted	Prepared: Regulation on the essential requirements and conformity assessment of hot-water boilers fired with liquid or gaseous fuels with regard to useful efficiency
Effectiveness	An opportunity provided for the selection and implementation of high-efficiency facilities
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	Effective as from 30 June 2005

3.1.2.13.

Title of the EEI measure	**Residential Energy Efficiency Credit Line (REECL)**
Category	Financial instruments Subcategory: Loans; public-private partnership
Regional application	Measure effective in the whole country.
Target group	Households: having a 29% share of final energy consumption
End-use EEI action targeted	A combined scheme (a loan followed by a grant) designed for individual beneficiaries and households for the purpose of financing of specific EEI measures in multi-family and single-family buildings

Effectiveness	- wall, floor and loft insulation - energy efficient glazing - energy efficient gas boilers - energy efficient burners and boilers fired with biomass - hot-water solar collectors - heat pump installations for heating and air-conditioning
If available: **expected or actual annual energy savings in 2016 and 2010**	The projects funded so far are expected to result in electricity savings of 50 474 MWh per year.
Status of implementation and exact timeframe	Date of start: September 2005; End: 31 December 2008. An extension of the period is possible.

3.2. Tertiary Sector

In 2005, the energy consumption of the tertiary sector was 11% of the final inland energy consumption covered by the Directive. Electricity has the biggest share in the energy consumption of the tertiary sector, 67%. Natural gas (5%) also follows suit at the expense of heat (21%) and liquid fuels (4%). The energy intensity of the tertiary sector has not changed significantly for the past few years and is close to that of the other EU Member States. The major energy consumers in the sector are tourist sites and the housing stock of the public sector. Expenditure for street lighting, heating and lighting in public-sector buildings constitutes a major item in the state and municipal budgets. The housing stock has depreciated, which requires special attention to be paid and to strengthen the activities related to the improvement of its energy performance.

3.2.1. Overview table of all EEI measures in the tertiary sector

№	Title of the EEI measures	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
1	Energy Efficiency Act	- Mandatory certificates for sites, public or municipal property, in operation, with a total useful area of over 1000 sq. m; - Mandatory energy efficiency improvement programmes for the municipalities; - Setting up an Energy Efficiency Fund as a public-private partnership in order to finance investment projects in the field of energy efficiency;	Effective as from 5 March 2004	

№	Title of the EEI measures	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
2	2006 National EEI Target Programme for the Housing Stock	**Audited 139 sites with 250 buildings having a total built-up area of 1.82 million m^2**	June 2006 - December 2006	163,5 GWh/y *after implementation of the measures prescribed for the sites*
3	2007 EEI Target Programme for Buildings	**Auditing**: **- 15 buildings, pubic property,** with a total useful area of 51897 m^2 ; **- 116 buildings, municipal property,** with a total useful area of 306069 m^2; **Insulating**: **10 buildings, public property, audited in 2006** with a total useful area of 49500 m^2	2007	
4	Energy Efficiency District Councils	The Energy Efficiency District Councils have been set up by orders of the District Governors in the 28 districts in Bulgaria. These Councils are composed of experts and representatives of the district and municipal administration, local businesses, civil organisations and associations, etc. The Energy Efficiency District Councils assist in the preparation and adoption of district and municipal EEI programmes.	Set up in 2004	
5	Mandatory EEI Programmes for the Municipalities	In line with the provisions of the EEA, Article 9, para. 2, the mayors organise and implement the measures foreseen in the municipal energy efficiency improvement programmes by allocating target funds in their budgets for their implementation.	Effective as from 5 March 2004	
6	Mandatory Energy Auditing of Buildings of over 1000 m^2 (municipal or public property)	The energy audits aim to identify energy saving opportunities and to propose EEI measures and the achievement of high degree of environmental protection	Effective as from 1 January 2005	
7	Financing Strategy for Building Insulation	Tying up this process with the necessary inventory-taking and energy auditing as well as certification of buildings. The more important obligations in this process: **For the state:** to provide financial incentives	2006 - 2020	

№	Title of the EEI measures	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
		for the participants in the renovation process; to provide budgetary funds for the start of renovation; **For the municipalities:** to adopt new town plans and long-term municipal programmes for the modernisation of housing complexes; **For the energy supply companies:** to update energy meters and the energy distribution and supply network.		

3.2.2. Description of the individual EEI measures in the tertiary sector:

3.2.2.1.

Title of the EEI measure	Energy Efficiency Act
Category	Regulation
Regional application	Measure effective in the whole country
Target group	**Tertiary Sector** In 2005, the share of the **tertiary sector** was 11% of the final energy consumption of all final energy consumers in scope of the ESD. The tertiary sector ranks fourth in the total energy consumption after the transport sector (36%), the residential sector (28%) and the industry sector (22%)
End-use EEI action targeted	Under the Energy Efficiency Act (Article 9), the municipal councils are obligated to adopt energy efficiency improvement programmes; an Energy Efficiency Fund has been set up as a public-private partnership to support EEI investment projects; mandatory certification of sites, public or municipal property, in operation, with a total useful area of over 1000 sq. m. is foreseen. With reference to the implementation of the Act, the following Regulations have been adopted: - **Regulation № 18 on the energy performance of sites;** - **Regulation № 19 on the energy certification of buildings;** - **Regulation № 21 on energy audits;**

Effectiveness	- In pursuance of the EE state policy at the municipal level, the municipal councils adopt energy efficiency improvement programmes depending on the specific situation in each municipality. The municipal EEI programmes foresee measures for the rehabilitation of the housing stock, administrative and economic buildings in the territory of the municipality, as well as the implementation of energy saving street lighting systems and lighting systems in public-sector buildings, etc.; - an Energy Efficiency Fund has been set up as a public-private partnership to support EEI activities; - **Regulation № 18 on the energy performance of sites** establishes the terms and procedure for determination of the indicators of energy demand and energy performance of sites (buildings and industrial systems), a single methodology for formation of the indicators of energy demand and energy performance of sites, technical rules and methods of comparison of the energy performance of sites and norms for annual energy consumption in buildings; - **Regulation № 19 on the energy certification of buildings** establishes the rules and procedure for the energy certification of buildings, types of certificates and content requirements, training requirements for persons performing certification and control on the activity of certification of buildings; - **Regulation № 21 on energy audits** establishes the terms and procedure for carrying out on-site energy audits of energy consumers, as well as the exercise of control on this activity. The Regulation establishes the purpose of energy auditing, the scope and types of audits as activities aiming to identify potential energy saving opportunities and to propose cost-effective and environment friendly measures.
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	Promulgated in SG No. 18 of 5 March 2004, effective as from 5 March 2004, amended and supplemented in No. 74 of 8 September 2006

3.2.2.2.

Title of the EEI measure	2006 National EEI Target Programme for the Housing Stock
Category	**Category:** Information and mandatory information measures **Subcategory:** Standards: *Energy Audits*
Regional application	Measure effective in the whole country
Target group	Tertiary sector, public-sector housing stock

End-use EEI action targeted	The 2006 National EEI Target Programme for the Housing Stock includes sites, subject to mandatory certification under Article 16, para. 1 of the EEA - audited 139 sites with 250 buildings having a total built-up area of 1.82 million m^2
Effectiveness	During the detailed audits conducted, an analysis was made of the existing condition, energy consumption, energy performance and energy savings potential of the sites.
If available: **expected or actual annual energy savings in 2016 and 2010**	After implementation of the measures prescribed for the sites, total energy savings of 163,5 GWh/y (14,1 ktoe) are expected.
Status of implementation and exact timeframe	New EEI measure, process of implementation started Date of start: June 2006

3.2.2.3.

Title of the EEI measure	2007 EEI Target Programme for Buildings
Category	**Category:** Information and mandatory information measures **Subcategory:** Standards: *Energy Audits*
Regional application	Measure effective in the whole country
Target group	Tertiary sector, public-sector housing stock
End-use EEI action targeted	Audits of sites, subject to mandatory certification under Article 16, para. 1 of the EEA and implementation of measures: insulating buildings owned by the state. In 2007, 15 buildings (with a total useful area of 51897 m^2), public property, and 116 buildings (with a total useful area of 306069 m^2), municipal property, will be audited.
Effectiveness	Carrying out detailed audits and analysing the existing condition, energy consumption, energy performance and energy savings potential of the sites.
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	Process of implementation not started yet

3.2.2.4.

Title of the EEI measure	Energy Efficiency District Councils

Category	**Category:** Information and mandatory information measures **Subcategory:** Exemplary role of the public sector
Regional application	Measure effective in the whole country
Target group	Tertiary sector – public and municipal administration
End-use EEI action targeted	Improving energy efficiency at the district (municipal) level
Effectiveness	The EE district councils: - enhance the coordination between ministries, state bodies, district and municipal administrations for the implementation of the state energy efficiency improvement policy; - participate in the preparation and adoption of district and municipal energy efficiency improvement strategies; - inform citizens and companies of energy savings opportunities and EEI measures and exchange best practices; - investigate investment opportunities for EEI measures and projects.
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	New EEI measure, process of implementation started Date of start: 2004

3.2.2.5.

Title of the EEI measure	Mandatory EEI programmes for the municipalities
Category	**Category:** Information and mandatory information measures **Subcategory:** Exemplary role of the public sector.
Regional application	Measure effective in the whole country
Target group	Tertiary sector
End-use EEI action targeted	Improving energy efficiency at the municipal level
Effectiveness	The municipal EEI programmes aim to improve the efficiency of energy utilisation, reduce energy consumption, mitigate harmful emissions in the atmosphere, ensure healthy environment by improving the microclimate, create preconditions for financing of EEI measures and make energy efficiency one of the priority municipal areas for action.

If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	New EEI measure, process of implementation started Date of start: 5 March 2004

3.2.2.6.

Title of the EEI measure	Mandatory energy auditing of buildings of over 1000 m^2 (municipal or public property)
Category	Regulation
Regional application	Measure effective in the whole country
Target group	Tertiary sector, public-sector housing stock
End-use EEI action targeted	The audits aim to identify potential energy savings opportunities and to propose cost-effective and environment friendly measures.
Effectiveness	The audit ends with the preparation of a report and a summary proposing measures for the improvement of energy efficiency. The report contains: a detailed description of the building, an analysis and assessment of the condition of the existing technical systems, including control systems of energy supply, energy balance and base line of energy consumption in respect of the basic energy carriers; a comparison of the specific energy consumption indicators with the benchmarks, an assessment of the energy savings potential; a detailed description of the identified energy savings measures and the envisaged term of buy out; a detailed technical and economical assessment of the selected individual measures and of combinations thereof; a proposal for coordinated implementation of the measures.
Status of implementation and exact timeframe	New EEI measure, process of implementation started Date of start: 1 January 2005

3.2.2.7.

Title of the EEI measure	Financing strategy for building insulation
Category	Category: Regulation Subcategory: Building Codes and Enforcement
Regional application	Measure effective in the whole country
Target group	Tertiary sector
End-use EEI action targeted	2006-2020 National Renovation Programme for Residential Buildings in the Republic of Bulgaria envisaging the following measures: • replacement of glazing: a significant reduction in leakage and good air-tightness with high-quality shaped metal and window sealings;

	• improvement of the heat insulation of walls, roofs, lofts and floors; • using new energy saving construction materials for insulation; • replacement of the existing heaters with more efficient ones;
Effectiveness	• The average economy of energy resulting from the implementation of engineering and technical measures will be about 25-35 kWh/m^2 total built-up area/year • The emission savings depending on the heating source and in 1 kWh energy at the consumer will be: - central heating: 272 gCO_2/kWh, - electricity-based heating: 683 gCO_2/kWh, - wood-based heating: 20 gCO_2/kWh, - coal-based heating: 445 gCO_2/kWh. • Social effects: the annual number of employed will vary between 2,000 and 8,000 people.
If available: **expected or actual annual energy savings in 2016 and 2010**	Expected savings in 2016: approximately 349 GWh or 30 ktoe per year.
Status of implementation and exact timeframe	Measure implemented no earlier than 1995 and still effective in 2016

3.3. Industry

The high level of energy intensity of the Bulgarian economy is predetermined first of all by the high energy intensity of the industry sector. In 2005, generating only 28% of the GDP, it accounted for 37% of the final inland energy consumption. The major energy consumers in the sector are the ferrous metallurgy, the chemical industry, the production of non-metal mineral raw materials and the food and drink industry. Almost all undertakings operating in the first three branches fall within the scope of the ET Directive 2003/87/EC of 13 October 2003.

3.3.1. Overview table of all EEI measures in the industry sector

№	Title of the EEI measure	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
1	Mandatory energy audits of industrial companies, producers of goods and services, the facilities of which have annual energy consumption of or more than 3 000 MWh – Article 17, para. 1 of the EEA, Regulation № 21/12.11.2004	Reducing the energy intensity of the sectors forming the GDP, mostly the industry sector	The measure was implemented at the end of 2004 with the enforcement of Regulation № 21/12.11.2004. The audits are conducted once every 3 years.	1 300 GWh These savings will be achieved only if EEI measures are implemented.
2	Financing the audits of 35 SMEs having annual energy consumption of or more than 3 000 MWh, which are subject to a mandatory audit under Article 17, para. 1 of the EEA, with funds from the state budget.	Reducing the energy intensity, respectively, boosting the competitiveness of SMEs through the implementation of energy saving measures prescribed as a result of the audits.	The measure started at the end of 2006. The audit reports containing prescribed specific EEI measures are expected to be submitted by the end of September 2007.	200 GWh These savings will be achieved only if EEI measures are implemented.
3	**Bulgarian Energy Efficiency and Renewable Energy Credit Line (BEERECL) for the industry sector**	The credit facility has been established using funds from Kozloduy International Decommissioning Support Fund (KIDSF) and the European Bank for Reconstruction and Development in order to support energy efficiency and renewable energy projects of private companies. The facility extends loans to private-sector companies through a pool of Bulgarian banks. The incentive grant from KIDSF which covers part of the principal and the	End of 2004 – 1 January 2009. An extension is possible.	The projects funded under the programme as at June 2007 are expected to bring about electricity savings of 59 225 MWh per year and 1 610 926 GJ/year.

№	Title of the EEI measure	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
		interest payments of the loan is provided upon completion of the projects and amounts up to 7.5% of the loan for energy efficiency projects.		
4	**Encouraging the implementation of energy saving and environment friendly technologies and RES**	Encouraging the annual audits of SMEs having annual consumption of less than 3000 MWh, i.e. audits are not mandatory.	The measure is Programme № 4 of the programming budget of the MEE for 2007 and the period 2008 – 2020.	
5	**Long-term energy savings agreements**	Energy savings in the industry sector	Started in 2006.	The results will be reported after 2010.

3.3.2. Description of the individual EEI measures in the industry sector

3.3.2.1.

Title of the EEI measure	Mandatory energy audits of industrial companies, producers of goods and services, the facilities of which have annual energy consumption of or more than 3 000 MWh – Article 17, para. 1 of the EEA, Regulation № 21/12.11.2004
Category	Information and mandatory information measures Subcategory: Energy Audits
Regional application	Measure effective in the whole country.
Target group	Industry sector
End-use EEI action targeted	Implementation of the EEI measures prescribed as a result of the audits.
Effectiveness	- ESMs for technological units and facilities; - replacement of technological equipment; - replacement of the fuel base; - ESMs measures for electric motors, transformers and lighting systems; - co-generation; - RES; - etc.

If available: **expected or actual annual energy savings in 2016 and 2010**	Expected annual savings of 1 300 GWh (111,8 ktoe) if EEI measures are implemented.
Status of implementation and exact timeframe	The measure was implemented at the end of 2004 with the enforcement of Regulation № 21/12.11.2004

3.3.2.2.

Title of the EEI measure	Reducing the energy intensity, respectively, boosting the competitiveness of SMEs through the implementation of energy saving measures prescribed as a result of the audits.
Category	Information and mandatory information measures Subcategory: Energy Audits
Regional application	Measure effective in the whole country
Target group	Industry sector
End-use EEI action targeted	Implementation of the ESMs measures prescribed as a result of the audits.
Effectiveness	- ESMs for technological units and facilities; - replacement of technological equipment; - replacement of the fuel base; - ESMs measures for electric motors, transformers and lighting systems; - co-generation;
If available: **expected or actual annual energy savings in 2016 and 2010**	Expected annual savings of 200 GWh (17,2 ktoe) if EEI measures are implemented.
Status of implementation and exact timeframe	The measure was implemented at the end of 2006. The audit reports containing prescribed specific EEI measures are expected to be submitted by the end of September 2007.

3.3.2.3.

Title of the EEI measure	**Bulgarian Energy Efficiency and Renewable Energy Credit Line (BEERECL) for the industry sector**
Category	Financial instruments Subcategory: Loans
Regional application	Measure effective in the whole country
Target group	Industry sector
End-use EEI action targeted	Implementation of energy efficiency and renewable energy projects
Effectiveness	- combined heat and power generation

	- utilisation of residual heat - automation and control of processes and facilities - reconstruction of energy infrastructure - fuel changeover (from coal/oil to gas) - optimisation of processes - biomass - biogas installations - wind power plants - hydro power plants - geothermal units - solar systems
If available: **expected or actual annual energy savings in 2016 and 2010**	The projects supported under the programme as at June 2007 are expected to bring about electricity savings of 59 225 MWh per year and 1 610 926 GJ/year.
Status of implementation and exact timeframe	Start: end of 2004 End: 1 January 2009

3.3.2.4.

Title of the EEI measure	**Energy Efficiency Fund**
Category	Category: Financial instruments Subcategory: EE funds, loans, tax rebates; public-private partnership
Regional application	Measure effective in the whole country
Target group	Industry sector
End-use EEI action targeted	The Energy Efficiency Fund has been set up with the EEA. The Energy Efficiency Fund (EEF) in Bulgaria finances investment projects for energy efficiency improvement, including in the industry sector, under simplified conditions.
Effectiveness	A revolving fund has been set up by means of a public-private partnership to support EEI measures.
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	The EEF has started to function in reality since 21 June 2005.

3.4. Transport

The share of the transport sector of the final inland energy consumption in scope of the Directive was 33% in 2005 following an upward trend. A large and increasing part of the

transport sector consumes fuels without participating directly in the GDP formation. These are private cars, the number and average annual run of which has rapidly increased for the last few years.

3.4.1 Overview table of all EEI measures in the transport sector

№	Title of the EEI measure	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
1	2006-2008 programme for the energy efficiency improvement of the transport sector through the implementation of energy saving measures	The programme envisages audits of 14 state and municipal transport companies, which are subject to mandatory energy audits as big energy consumers, in line with the requirements of Article 17(1) of the EEA and the Regulation thereto. The declared consumption of these companies in 2005 was 726 743 MWh/year. As a result of the audits, specific measures will be outlined to improve the energy efficiency of the transport companies. The programme also includes preliminary data on priority projects proposed by the Ministry of Transport and some municipalities. As a result of the audits, these projects will be updated and the data about them will be specified.	After 2006	
2	Mandatory speed limit	Under the Traffic Act (5 March 1999), drivers are obliged to limit the speed of the motor vehicle up to 50 km/h in settlements, up to 90 km/h in open country and up to 130 km/h on motorways.	Since 5 March 1999	

№	Title of the EEI measure	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
3	Taxes on fuel oils for the transport sector.	The new Excise Duties and Tax Warehouses Act of 2 November 2005 introduces the requirements of EU Directives 92/79, 92/80, 92/12 and 2003/96. The excise duties on motor fuels after the latest amendments effective as from 1 January 2007 are as follows: 1. Europlus Unleaded Gasoline A-95H and A-98H: 635 BGN/1000 l; 2. Diesel fuel: 535 BGN/1000 l; The value-added tax is 20% for all fuels. The excise duty on motor fuels is one of the most efficient measures to limit consumption of fuel oils in the transport sector. The taxes constitute about 50% of the end price of petrol and diesel fuel.	Since 1 January 2006	

№	Title of the EEI measure	End-use EEI action targeted	Duration	Annual energy savings expected in 2016
4	Mandatory periodical MOT tests.	Since 1 September 1999, by Regulation № 32 of the Ministry of Transport (with a number of amendments until 2007), the procedure for mandatory periodical MOT tests and control of emissions from vehicles has been established. In Bulgaria, by reason of the advanced average age of the vehicle fleet, the improved maintenance and repairs have a direct effect on the reduction of fuel consumption. Tests are carried out in special MOT test points. Tests of public transport vehicles are carried out every 6 months, while those of other vehicles every year. Tests include an inspection of the technical condition of the main vehicle systems and of the allowed emissions of CO and smoke in the exhaust. If the vehicle does not comply with the requirements, it cannot obtain authorisation for use.	Since 1 September 1999	

3.4.2 Description of the individual EEI measures in the transport sector:

3.4.2.1.

Title of the EEI measure	2006-2008 programme for energy efficiency improvement of the transport sector through the implementation of energy saving measures
Category	Category: 2. Information and mandatory information measures Subcategory: 2.4. Energy Audits.
Regional application	Measure effective in the whole country
Target group	Transport sector. In 2005, the sector had a 33% share of the final energy consumption of all energy consumers covered by the ES Directive.

End-use EEI action targeted	The programme foresees audits of 14 state and municipal transport companies, which are subject to mandatory energy audits as big energy consumers in line with the requirements of Article 17(1) of the EEA and the Regulation thereto. In 2005, the declared consumption of these companies was 726 743 MWh/year.
Effectiveness	The audit ends with the preparation of a report and a summary proposing measures for improvement of the energy consumption indicators.
If available: **expected or actual annual energy savings in 2016 and 2010**	According to preliminary assessments, the expected energy savings will be no less than 72 GWh (6.2 ktoe) after implementation of the measures proposed in the audits.
Status of implementation and exact timeframe	New EEI measure, process of implementation started in 2006.

3.4.2.2.

Title of the EEI measure	Mandatory speed limit.
Category	Category: 1. Regulation Subcategory: 1.2. Minimum Equipment Standards.
Regional application	Measure effective in the whole country
Target group	Transport sector.
End-use EEI action targeted	Under the Traffic Act (5 March 1999), the drivers are obliged to limit the speed of the motor vehicle up to 50 km/h in settlements, up to 90 km/h in open country and up to 130 km/h on motorways.
Effectiveness	According to preliminary assessments, the reduction by not less than 5 km/h of the speed of vehicles in open country will result in a reduction of the fuel consumption of the motor transport sector by not less than 1.5 %.
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	Early actions. The process of implementation has started since 5 March 1999.

3.4.2.3.

Title of the EEI measure	Taxes on fuel oils for the transport sector.
Category	Category: 3. Financial instruments. Subcategory: 3.2. Taxes reducing energy end-use consumption.

Regional application	Measure effective in the whole country
Target group	Transport sector.
End-use EEI action targeted	The excise duties on motor fuels after the latest amendments effective as from 1 January 2007 are as follows: 1. Europlus Unleaded Gasoline A-95H and A-98H: 635 BGN/1000 l; 2. Diesel fuel: 535 BGN/1000 l; The value-added tax is 20% for all fuels.
Effectiveness	The new Excise Duties and Tax Warehouses Act of 2 November 2005 introduces the requirements of EU Directives 92/79, 92/80, 92/12 and 2003/96. The excise duty on motor fuels is one of the most effective measures to limit the consumption of fuel oils in the transport sector. The taxes constitute about 50% of the end price of petrol and diesel fuel.
If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	New measure, process of implementation started in 1 January 2006.

3.4.2.4.

Title of the EEI measure	Mandatory periodical MOT tests.
Category	Category: 1. Regulation Subcategory: 1.2. Minimum Equipment Standards.
Regional application	Measure effective in the whole country
Target group	Transport sector.
End-use EEI action targeted	Since 1 September 1999, by Regulation № 32 of the Ministry of Transport (with a number of amendments until 2007), the procedure for mandatory periodical MOT tests and control of emissions from vehicles has been established. Tests are carried out in special MOT test points. Tests of public transport vehicles are carried out every 6 months, while those of other vehicles every year.
Effectiveness	In Bulgaria, by reason of the advanced average age of the vehicle fleet, the improved maintenance and repairs have a direct effect on the reduction of fuel consumption. Tests include an inspection of the technical condition of the main vehicle systems and of the allowed emissions of CO and smoke in the exhaust. If the vehicle does not comply with the requirements, it cannot obtain authorisation for use. According to preliminary assessments, the mandatory MOT tests will result in 2% savings of liquid fuels in the transport sector.

If available: **expected or actual annual energy savings in 2016 and 2010**	
Status of implementation and exact timeframe	Early actions, process of implementation started in 1 September 1999.

3.5 Agriculture

The agriculture sector accounts for 9% of the GDP and 4% of the final inland energy consumption.

As compared to the agricultural sector in the EU, the sector in Bulgaria is up to three times less energy-consuming.

Table 3.5.1. outlines the EEI measures in the sector, put forward in the 2005 – 2015 National Long-term EEI Programme (NLTEEIP) and the National Rural Development Plan (NRDP).

3.5.1 Overview table of all EEI measures in the agricultural sector

№	Title of the EEI measure	End-use EEI action targeted	Duration	Expected annual energy savings in 2016
1	Improving the heat insulation of buildings	Improving the heating efficiency in farm buildings	2008 – 2015	
2	Introducing new boilers fired with biomass and boilers with improved technical characteristics in farm buildings	Improving the heating efficiency in farm buildings	2008 – 2015	
3	Use of energy saving lighting	Energy savings in the use of agricultural technologies	2008 – 2015	
4	Use of accumulating boilers	Energy savings in the use of agricultural technologies	2008 – 2015	
5	Frequency control of the speed of electric motors and automation of systems	Energy savings in the use of agricultural technologies	2008 – 2015	
6	Improved heat insulation of animal housing	Energy savings in livestock production by reducing the energy for heating	2008 – 2015	

№	Title of the EEI measure	End-use EEI action targeted	Duration	Expected annual energy savings in 2016
7	Use of heat exchangers to extract heat from used air, recirculation of used air	Energy savings in livestock production by reducing the energy for heating	2008 – 2015	
8	Replacement of irrigation pipes, reduction of friction loss	Energy savings in the irrigation of crops	2008 – 2015	
9	Use of high-efficiency irrigation pumps	Energy savings in the irrigation of crops	2008 – 2015	
10	Use of integrated energy installations in greenhouses	Energy savings in the agricultural production in greenhouses	2008 – 2015	
11	Introduction of automatic air-conditioning systems in greenhouses	Energy savings in the agricultural production in greenhouses	2008 – 2015	
12	Modernisation of farms *National Rural Development Plan (NRDP)*	Protection of the environment, incl. mitigation of harmful emissions and reduction of waste. Encouraging the use of renewable natural resources and improving the efficiency of resources used in production	2008 – 2013	
13	Diversification into non-agricultural activities (NRDP)	Energy generation from RES: - production of biofuels from biomass; - production of biogas, co-generators fired with biogas.	2008 – 2013	

3.5.2 Description of the individual EEI measures in the agricultural sector

3.5.2.1

Title of the EEI measure	Energy savings in the agricultural production in greenhouses
Category	Information and mandatory information measures (NLTEEIP)
Regional application	Measure effective in the whole country
Target group	The agricultural sector The share of the agricultural sector of the FIEC covered by the ES Directive was 4% in 2005. This share is the smallest one by comparison with the other sectors. The agricultural sector is relatively insensitive to market developments.
End-use EEI action targeted	-
Effectiveness	- use of integrated energy installations in greenhouses - introduction of automatic air-conditioning systems in greenhouses
If available: **expected or actual annual energy savings in 2016 and 2010**	-
Status of implementation and **exact timeframe**	New EEI measure, process of implementation not started yet Date of start: 2008. End of the EEI measure: 2015.

3.5.2.2

Title of the EEI measure	Improving the heating efficiency in farm buildings
Category	Information and mandatory information measures (NLTEEIP)
Regional application	Measure effective in the whole country
Target group	The agricultural sector The share of the agricultural sector of the FIEC covered by the ES Directive was 4% in 2005. This share is the smallest one by comparison with the other sectors. The agricultural sector is relatively insensitive to market developments.
End-use EEI action targeted	-
Effectiveness	- improving the heat insulation of buildings - introducing new boilers fired with biomass and boilers with improved technical characteristics in farm buildings

If available: **expected or actual annual energy savings in 2016 and 2010**	-
Status of implementation and **exact timeframe**	New EEI measure, process of implementation not started yet Date of start: 2008. End of the EEI measure: 2015.

3.5.2.3

Title of the EEI measure	Energy savings in the irrigation of crops
Category	Information and mandatory information measures (NLTEEIP)
Regional application	Measure effective in the whole country
Target group	The agricultural sector The share of the agricultural sector of the FIEC covered by the ES Directive was 4% in 2005. This share is the smallest one by comparison with the other sectors. The agricultural sector is relatively insensitive to market developments.
End-use EEI action targeted	-
Effectiveness	- use of high-efficiency irrigation pumps; - replacement of irrigation pipes, reduction of friction loss.
If available: **expected or actual annual energy savings in 2016 and 2010**	-
Status of implementation and **exact timeframe**	New EEI measure, process of implementation not started yet Date of start: 2008. End of the EEI measure: 2015.

3.5.2.4

Title of the EEI measure	Energy savings in the use of agricultural technologies
Category	Information and mandatory information measures (NLTEEIP)
Regional application	Measure effective in the whole country
Target group	The agricultural sector The share of the agricultural sector of the FIEC covered by the ES Directive was 4% in 2005. This share is the smallest one by comparison with the other sectors. The agricultural sector is relatively insensitive to market developments.
End-use EEI action targeted	-

Effectiveness	- use of energy saving lighting; - use of accumulating boilers; - frequency control of the speed of electric motors and automation of systems
If available: **expected or actual annual energy savings in 2016 and 2010**	-
Status of implementation and exact timeframe	New EEI measure, process of implementation not started yet Date of start: 2008. End of the EEI measure: 2015.

3.5.2.5

Title of the EEI measure	Energy savings in livestock production by reducing the energy for heating
Category	Information and mandatory information measures (NLTEEIP)
Regional application	Measure effective in the whole country
Target group	The agricultural sector The share of the agricultural sector of the FIEC covered by the ES Directive was 4% in 2005. This share is the smallest one by comparison with the other sectors. The agricultural sector is relatively insensitive to market developments.
End-use EEI action targeted	-
Effectiveness	- improved heat insulation of animal housing; - use of heat exchangers to extract heat from used air, recirculation of used air
If available: **expected or actual annual energy savings in 2016 and 2010**	-
Status of implementation and exact timeframe	New EEI measure, process of implementation not started yet Date of start: 2008. End of the EEI measures: 2015.

3.5.2.6

Title of the EEI measure	Modernisation of farms
Category	Information and mandatory information measures (NRDP)
Regional application	Measure effective in the whole country
Target group	The agricultural sector The share of the agricultural sector of the FIEC covered by the

	ES Directive was 4% in 2005. This share is the smallest one by comparison with the other sectors. The agricultural sector is relatively insensitive to market developments.
End-use EEI action targeted	-
Effectiveness	Protection of the environment, including mitigation of harmful emissions and reduction of waste. Encouraging the use of renewable natural resources and improving the efficiency of resources used in production
If available: **expected or actual annual energy savings in 2016 and 2010**	-
Status of implementation and **exact timeframe**	New EEI measure, process of implementation not started yet Date of start: 2008. End of the EEI measures: 2015.

3.5.2.7

Title of the EEI measure	Diversification into non-agricultural activities
Category	Information and mandatory information measures (NRDP)
Regional application	Measure effective in the whole country
Target group	The agricultural sector The share of the agricultural sector of the FIEC covered by the ES Directive was 4% in 2005. This share is the smallest one by comparison with the other sectors. The agricultural sector is relatively insensitive to market developments.
End-use EEI action targeted	-
Effectiveness	Energy generation from RES: - production of biofuels from biomass; - production of biogas, co-generators fired with biogas.

If available: **expected or actual annual energy savings in 2016 and 2010**	-
Status of implementation and **exact timeframe**	New EEI measure, process of implementation not started yet Date of start: 2008. End of the EEI measure: 2015.

3.6. Assessment of total ESD energy savings in the sector expected for the period 2008-2016 and for the intermediate period 2008-2010

3.6.1 Sectoral bottom-up assessment

The assessment of the energy savings in the sector under the bottom-up calculation method will be made on the basis of the standardised methods provided by the European Commission.

3.6.2 Top-down monitoring and methodology

No top-down monitoring within the first three years is envisaged.

3.6.3 Sectoral top-down assessment

The assessment of the energy savings in the sector under the top-down calculation method will be made on the basis of the official statistical data from the national energy balance for 2010.

3.6.4 Top-down monitoring and methodology

Top-down monitoring within the first three years will be exercised every year on the basis of data from the national energy balances.

4. Horizontal and cross-sectoral measures

- Energy Efficiency Act: promulgated, SG No. 18 of 5 March 2004, effective as from 5 March 2004, amended and supplemented, SG No. 74 of 8 September 2006.
- Energy Act: promulgated, SG No. 107 of 9 December 2003, last amended, SG No. 74 of 8 September 2006.
- National Long-term EEI Programme, 2005-2015: CM Decision of July 2005. Ten-year EE strategy.
- National Short-term EEI Programme, 2005-2007. Three-year action plan: CM Decision of December 2005.
- Regulation on the essential requirements and conformity assessment of ballasts for fluorescent lamps in respect of energy efficiency requirements issued on the basis of the Technical Requirements to Products Act.
- Regulation № 7 on heat saving and economy of energy in buildings issued on the basis of the Town and Country Planning Act.

4.1. Assessment of horizontal measures

At present, there are a significant number of normative documents in the country implementing energy efficiency norms. It is difficult to assess their effects for lack of available methods and statistical information. In addition, for the greatest part, these are measures that have been implemented in all EU Member States and their assessment will be made after the development and provision of the respective standardised methods.

4.2. Top-down assessment of energy savings from cross-sectoral measures covered by the Directive

Notwithstanding the fact that the Bulgarian economy has a high level of energy intensity, it is realistic to expect that it will improve in the coming years. This statement is based upon the fact that sectors that do not generate an added value (the residential sector and private cars) are included in the total consumption of energy resources, which together with the income growth of the population increase their shares of final inland energy consumption and reduce to a significant extent the effects of EEI measures implemented in the main economic sectors.

The estimated growth of final inland energy consumption is based upon its dependence on GDP. It may be assumed that this dependence will be permanent in the short and medium term, i.e. that the rate of growth of final inland energy consumption and the GDP growth rate are equal.

The average rate of GDP growth for the period 2005-2015 provided by the Agency for Economic Analysis and Forecasting is 5.5% per year. In reality, the expected growth of final inland energy consumption should be less, in consequence of the implementation of EEI measures.

5. Measures specifically required by the ES Directive

5.1. Article 5 on measures in the public sector

Title	Article 5 of the ES Directive on measures in the public sector.
Relevant EEI measures	Introduced mandatory certificates for sites, public or municipal property, in operation, with a total useful area of over 1000 sq. m., preceded by energy audits prescribing energy savings measures. This measure has been described in p. 3.2.2
Title of legislation or regulation	Energy Efficiency Act Regulation № 19 of 12 November 2004 on the energy certification of buildings and Regulation № 21/12.11.2004 on energy audits
Link to publication	**Energy Efficiency Act**: promulgated, SG No. 18 of 5 March 2004, amended, SG No. 74 of 8 September 2006. **Regulation № 19 of 12 November 2004 on the energy certification of buildings and Regulation № 21/12.11.2004 on energy audits:** issued by the Minister of Energy and Energy Resources and the Minister of Regional Development and Public Works, promulgated, SG No. 108 of 10 December 2004.
Date of entry into force	Energy Efficiency Act: effective as from 5 March 2004. Regulation № 19 and Regulation № 21: effective as from 1 January 2005

5.2. Article 7 on availability of information

Title	Article 7 of the ES Directive on transparency and wide dissemination to the relevant market actors of information on energy efficiency mechanisms and financial and legal frameworks adopted with the aim of reaching the national indicative energy

	savings target.
Relevant EEI measures	Promoting EEI measures
Title of legislation or regulation	Energy Efficiency Act
Link to publication	**Energy Efficiency Act**: promulgated, SG No. 18 of 5 March 2004, amended, SG No. 74 of 8 September 2006.
Date of entry into force	Effective as from 5 March 2004.

Title	Article 7 of the ES Directive on availability of information
Relevant EEI measures	Expanding the functions and changing the structure of the Energy Efficiency Agency by amending and supplementing the Energy Efficiency Act and amending and supplementing the Energy Act This measure has been described in p. 6.
Title of legislation or regulation	Energy Efficiency Act Energy Act
Link to publication	**Energy Efficiency Act**: promulgated, SG No. 18 of 5 March 2004, amended, SG No. 74 of 8 September 2006.
Date of entry into force	Effective as from 5 March 2004. Future changes

6. Legislative changes related to the transposition of the Directive

In order to implement the Directive, a number of changes are required to be made in effective normative documents.

Title	Energy Efficiency Act (EEA), promulgated, SG No. 18 of 5 March 2004.
Required changes	- setting up a separate chapter in the EEA with reference to the implementation of the provisions of the Directive, relating to the administrative regulation of the status and control powers of the Energy Efficiency Agency acting in its capacity as an appointed body under the Directive for the purpose of exercising control and monitoring on the compliance with the Directive; - amending and supplementing some provisions in the EEA to make them more precise in respect of the new requirements of the Directive.
Description	Amending and supplementing the Act is required in order to establish the rights and obligations of the EEA for the implementation of the Directive: → monitoring on the achievement of the national energy savings target of 9% ; → development and implementation of measures and mechanisms

	for the attainment of the objectives of the Directive; → assessment of the prepared projects and implemented measures in relation to the attainment of the objectives of the Directive; → participation in the supervision of the performance of the energy saving obligations of the persons covered by the Directive; → coordination between the authorities for the implementation of energy efficiency improvement measures; → preparation of three–year EE action plans and monitoring on their implementation; → etc.

Title	Energy Act (EA), promulgated, SG No. 107 of 9 September 2003, last amended and supplemented, SG No. 74 of 8 September 2006.
Required changes	- amending and supplementing the *Regulation of the Activities in the Energy Sector* Chapter ; - amending and supplementing some provisions in the EA.
Description	Amending and supplementing the Act is required in order to change some provisions and introduce additional obligations for certain energy companies such as energy distributors, distribution system operators and/or retail energy sales companies on which obligations have been imposed under Article 2(a) of the Directive. → introducing obligations for the implementation of measures by the persons in scope of the Directive in view of the achievement of the national energy savings target of 9%; → participation of the SEWRC in the implementation of the measures and mechanisms for the attainment of the objectives of the Directive; → establishing the obligations of the relevant authorities for the implementation of measures for the attainment of the objectives of the Directive; → etc.

7. Annexes

7.1. Annex 1: Measures by types of fuels and energy for the achievement of the national target

7.2. Annex 2: Types of measures for the achievement of the national target

7.3. Annex 3: Summary of the measures and time schedule

Annex 1: Measures by types of fuels and energy for the achievement of the national target

Fuel/ energy	Sector	Measures	Responsible authority	Year			
				2007	2008	2009	2010
Electricity	Residential and tertiary sector	Disseminate information on energy-efficient illumination, heating, hot-water boilers and cooking; replacement by RES: biomass, heat pumps, etc.	EEA	+	+	+	+
		Financial assistance to improve the energy performance of residential buildings and to retrofit buildings, public and municipal property.	MF	+	+	+	+
		Control on the implementation of individual metering and informative billing	SEWRC	+	+	+	+
		Encourage the replacement of inefficient electric wiring for heating and hot water boilers by more efficient one or by RES.	MEE, EEA MF			+	+
	Industry	Disseminate information on energy-efficient motive power, ventilation, air-conditioning, compressed air generation systems.	EEA		+	+	+
		Assist energy audits of SMEs	MEE EECI, ASME	+	+	+	+
		Encourage producers/traders in processed biomass.	MEE, EEA MF, ASME		+	+	+
		Encourage use of RES, utilisation of residual heat.	MEE, MF, SEWRC		+	+	+
Liquid fuels	Transport	Improve road infrastructure. Optimise traffic.	MT	+	+	+	+
		Replace part of the fuel oils by liquid biofuels.	MT MEE		+	+	+
		Effective control on the conditions of engines.	MT	+	+	+	+
		Ensure special rights of movement for public transport. Expand metro transport.	MT	+	+	+	+
		Special rights of movement for bicycles and mopeds.	MT		+	+	+
	Tertiary sector	Replace heating systems fired with liquid fuels by biomass, solar and geothermal energy.	MEE, EEA MRDPW		+	+	+

Solid fuels	Residential sector	Replace inefficient biomass incineration facilities by more energy-efficient ones.	MEE MLSP		+	+	+
		Replace solid fuels by processed biomass.	MEE MLSP			+	+
	Industry	Audit installations fired with coal.	MEE EECI		+	+	+
	Tertiary sector	Replace solid fuels by processed biomass.	MEE MRDPW			+	+
Cross-sectoral and horizontal measures		Support the implementation of EEI standards and norms for the production of goods and services, energy labelling (including buildings)	MEE EEA		+	+	+
		Support organisations delivering training (skills) and education (knowledge), which leads to the implementation of energy-efficient technologies and techniques.	MEE EEA		+	+	+
		EEI advertising campaigns.	EEA	+	+	+	+

Annex 2: Types of measures for the achievement of the national target

Types of measures	Responsible authority / Normative act	Name	Year			
			2007	2008	2009	2010
Normative	MEE, EEA, SEWRC / EEA, EA	Establish the status and control powers of the EEA in its capacity of an appointed body under the Directive in order to exercise control and monitoring on the implementation of the Directive	+	+		
		Allow energy traders to offer extended ES (not only delivery of energy but also of equipment and support) with a guaranteed service quality.	+	+		
		Ensure that energy traders will refrain from any activities that might impede the demand for and delivery of EEI measures, or hinder the development of markets for energy services.	+	+		
		Create conditions for competition between traders in fuels/energy and ESCOs.		+	+	+
		Mechanism of allocation of the indicative target among energy traders, including penalties in case of default.	+	+		
		Set up an organisation for monitoring on the performance of the obligations and delivery of ES.	+	+		
		Ensure independent metering of the results of complex ES.		+	+	
		Introduce white certificates.				+
	MRDPW, MEE / PPA	Take into account energy efficiency as an assessment criterion in competitive tendering.		+	+	
	MRDPW	Set up a Bulgarian federation of the owners, which is to manage the local building associations, managers of the property	+	+	+	
Financial	MF	Ensure access to sources of easy financing for ES providers.		+	+	
	MEE	Support absorption of EU funds by industrial companies.	+	+	+	+
	MEE	Support energy audits in industrial companies through the state budget.	+	+	+	+
	MEE	Support the implementation of the Financing Strategy for Building Insulation, public and municipal property, through the state budget.	+	+	+	+

Types of measures	Responsible authority / Normative act	Name	Year			
			2007	2008	2009	2010
Tax	MEE	Keep existing tax rebates for owners of certified buildings.	+	+	+	+
	SEWRC, MEE	Introduce cost-oriented tariffs to support ES.			+	+
Organisational	MEE	Assess efficiency of the structures implementing the EE policy and optimise their work.	+	+		
	MEE, EEA, SEWRC	Study and develop the white certificates scheme			+	+
	EEA	Develop programmes supporting ES (including energy audits).	+	+	+	+
	SEWRC	Analyse existing tariffs and include an EE component in their future formation to remove incentives in transmission and distribution tariffs that unnecessarily increase the volume of transmitted or distributed energy.		+		
	EEA EECI	Provide information, advice and audits (for a certain type of consumers) at the expense of the state budget.	+	+	+	+
	MEE, EEA	Develop public-private partnerships: prepare and conclude a long-term agreement.	+	+	+	+
	MEE	Appoint (accredit) an independent organisation to control the issue of TWC.		+	+	
	SEWRC	Organise a market for TWC.			+	+
	MEE, EEA, ASME	Attract Bulgarian producers and consumers to the European promotion programme of efficient electric drive systems (EDS) “Future efficient EDS”	+	+	+	+
	MEE, EEA	Reformulate the future priorities of the EEF to expand the opportunities for subsidisation of EEI programmes and measures, as well as to encourage the development of a market for EEI measures. Encourage energy audits and financial instruments for energy savings, and improve accounting and information on energy reporting. The fund should focus on sectors with high project costs or a higher degree of risk.	+	+		

Annex 3: Summary of measures and time schedule

Types of measures		2007				2008				2009				2010			
Action plans	Development, harmonisation and adoption of the 1st EP by the CM	X	X														
	Submit the 1st EP to the EC and update		X	X	X												
	Report the results of the 1st EP																X
Organisational	Assess the structures and make proposals for optimisation			X													
	Expand the functions of the EEA				X	X											
	Expand the functions of the SEWRC						X										
	Analyse the existing tariffs						X										
	Reformulate the priorities of the EEF				X	X											
	Develop EEI programmes (SMEs, transport, housing stock, residential and tertiary sectors)			X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Absorb EU funds (preparation and implementation)			X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Organise courses for energy managers.					X	X	X	X	X	X	X	X	X	X	X	X
	Assess the functioning of the ES market.								X	X							
	Invest in EEI measures and RES, which will obviate the need for energy social benefits.							X				X				X	
	Attract Bulgarian producers and consumers to the European promotion programme of efficient electric drive systems "Future Efficient EDS"	X	X	X	X												
Normative – Act on the amendment of and supplement to the EEA, PPA and TA	Allow energy traders to offer extended ES and ensure that they will refrain from impeding the EEI measures.				X	X											
	Competition between energy traders and ESCOs.					X	X										
	Independent assessment of the results from complex ES.					X	X										
	Monitor achievement of the indicative target and the mechanism for its allocation among energy traders, including penalties.					X	X										

Types of measures		2007				2008				2009				2010			
	Study and implement the white certificate scheme.										X	X	X	X	X	X	X
	Take into account energy performance (EE) as an assessment criterion in competitive tendering for public contracts					X	X										
	Special rights of movement for the public transport.					X											
	Set up a Bulgarian federation of the owners, which is to manage the local building associations, managers of the property	X	X	X	X												
	Replace fuel oils by liquid biofuels.					X	X	X	X	X	X	X	X	X	X	X	X
Financial	Ensure access to sources of easy financing for ES providers.						X	X	X	X	X	X	X	X	X	X	X
	Support absorption of EU funds by industrial companies.					X	X	X	X	X	X	X	X	X	X	X	X
	Support energy audits in industrial companies.					X	X	X	X	X	X	X	X	X	X	X	X
	Support the implementation of the Financing Strategy for Building Insulation, public and municipal property.					X	X	X	X	X	X	X	X	X	X	X	X
	Support the establishment of technical committees on standardisation of EE and RES				X												
	Taxes for motor vehicles based upon their environmental performance.								X								

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