UNOFFICIAL TRANSLATION

MINISTER OF ECONOMY OF THE REPUBLIC OF LITHUANIA

ORDER
ON AMENDING ORDER NO. 4-270 OF 2 JULY 2007 OF THE MINISTER OF ECONOMY OF THE REPUBLIC OF LITHUANIA ON APPROVAL OF THE ENERGY EFFICIENCY ACTION PLAN

4 December 2008, No. 4-620
Vilnius

In implementing Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC (OJ 2006 L 114, p. 64), I hereby establish to

a m e n d the Energy Efficiency Action Plan approved by Order No. 4-270 of 2 July 2007 of the Minister of Economy of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2007, No. 76-3024) and set it forth in a new recast version (attached).

Acting Minister of Economy Vytas Navickas

APPROVED
by Order No. 4-620 of 4 December 2008
of the Minister of Economy
of the Republic of Lithuania

ENERGY EFFICIENCY ACTION PLAN

Content

I. INTRODUCTION

The Energy Efficiency Action Plan (hereinafter – the Action Plan) has been drafted and prepared in observance of provisions of Article 14(2) of Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC (hereinafter – the Directive). The Action Plan revises current situation of consumption of energy use, evaluation of energy saving potential, sets the national energy savings targets and describes their calculation and strategy of achievement of these targets.

Energy efficiency is one of the principal strategic goals of energy system of Lithuania. Improvement of energy efficiency is important in the context of increasing energy safety, diversification of supply and reduction of dependence upon fossil fuel imported from third countries. Also, it is one of the main preconditions for minimising greenhouse gas emissions and achieving climate change mitigation objectives. The present greenhouse gas emissions quantities in Lithuania account only for 47% of respective emission of 1990 (Lithuania's commitment is to reduce greenhouse gas emissions to 8%).

Growing prices of oil and other energy sources are among the main factors stimulating more active actions in energy efficiency improvement area.

The purpose of this Action Plan is to introduce measures already implemented since 1995 (still influencing energy saving) and under implementation, as well as the measures to be taken for the purpose of improving energy end-use efficiency and guaranteeing that national energy saving targets for 2008–2010 and 2008–2016 are reached.

The national indicative energy savings target for the period of nine years (2008–2016) was calculated according to the requirements laid down in Annex I of the Directive and equals to 327 ktoe (3,797 GWh). The official national energy savings target set in the National Energy Strategy approved by Resolution No. X-1046 of 18 January 2007 ("Valstybės žinios" (Official Gazette), 2007, No 11-430) of the Seimas of the Republic of Lithuania, is 9% of the final energy consumption amount of 2005, or 404 ktoe (4,700 GWh). The intermediate energy savings target also established according to the requirements of the Directive for the period of three years (2008–2010) accounts for 1.5% percent of the average final energy consumption during 2001–2005, or 54 ktoe (628 GWh).

The national energy savings target will be achieved through the implementation of specific sectoral measures as well as horizontal and cross-sectoral measures.

The largest energy savings potential in Lithuania exist in the building sector (economic savings potential about 30%) through renovation of the existing buildings and upgrading their energy systems. Energy consumption of buildings accounts for 40% of the final energy consumption. Therefore, the majority of energy efficiency improvement measures are focused on financing of the projects of improvement of energy efficiency in residential and public buildings. These measures, *inter alia*, also address social problems related with expenses for energy and comfort of living conditions.

In addition to measures aimed at improving energy performance of buildings, the Action Plan also provides for measures in the industry and transport sectors as well as cross-sectoral and horizontal energy efficiency improvement measures. The Action Plan also elaborates on measures implementing Article 5 with regard to the exemplary role of the public sector and Article 7 of the Directive with regard to availability of information.

Improvement of energy efficiency is one of the long-term strategic objectives of Lithuania set in the National Energy Strategy which is being implemented since 1994, as revised in 1999, 2002 and for the last time – in 2007. The National Energy Strategy sets long-term objectives and tasks of energy efficiency improvement, while specific measures of implementation of this strategy are defined in the National Energy Strategy Implementation Plan for 2008–2012 approved by Republic of Lithuania Government Resolution No. 1442 of 27 December 2007 ("Valstybės žinios" (Official Gazette), 2008, No 4-131). One of the

measures covered by the Action Plan is to implement energy savings measures of the branches of economy which would facilitate in reducing comparative final energy consumption by 1.5% in 3 years, starting from 2008.

The National Energy Efficiency Programme for 2006–2010 approved by Republic of Lithuania Government Resolution No. 443 of 11 May 2006 ("Valstybės žinios" (Official Gazette), 2006, No 54-1956; 2008, No. 33-1183) is one of the main programme documents promoting efficient use of energy. It is an inter-institutional programme implemented since 1992 and revised every five years having regard to political, economic, social and technological changes. The tasks of this Programme are – to implement energy policy in line with sustainable development goals, incorporate energy efficiency into the national common policy by coordinating actions between sectors, creating and applying respective regulation and carry out applied scientific research, awareness-raising and educational activities on the matters of energy efficiency and use of renewable and waste energy resources.

In 2006–2010, the objectives and tasks of this Programme were defined separately for sectors of buildings and their engineering systems, cogeneration, district heating, energy facilities of enterprises, institutions and households, transport, indigenous, renewable and waste energy sources. The Programme deals with the organizational, legal, economic, technology development and installation, applied scientific research, public education and information measures. It is expected that after the implementation of the Programme goals heat consumption in existing buildings will reduce by 7%, cogeneration will account for 20% of the total electricity generation balance, and use of waste energy sources will increase by 2 TWh until 2010.

In addition to national energy efficiency improvement measures, respective legal acts of the European Union (hereinafter – the EU) related with end-use of energy have also been implemented.

In observance of Council Directive 92/42/EEC of 21 May 1992 on efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels (OJ 2004, SE, Chapter 13, Volume 11, p. 186) useful efficiency was established for hot-water boilers fired with liquid or gaseous fuels.

Requirements for energy efficiency of equipment have been set. In observance of the Republic of Lithuania Law on Energy ("Valstybės žinios" (Official Gazette), 2002, No. 56-2224) and in implementing Directive 92/75/EEC of the European Parliament and of the Council of 22 September 1992 on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances (OJ 2004, SE, Section 13, Volume 11, p. 216) 9 technical regulations aimed at indicating by labelling and standard product information of the consumption of energy and other resources by household appliances and providing customers with the possibility to purchase the most energy efficient appliances were approved.

In observance of the Republic of Lithuania Law on Energy and in implementing Directive 2000/55/EC of the European Parliament and of the Council of 18 September 2000 on energy efficiency requirements for ballasts for fluorescent lighting (OJ 2004, SE, Chapter 12, Volume 2, p. 96) and Directive 96/57/EC of the European Parliament and of the Council of 3 September 1996 on energy efficiency requirements for household electric refrigerators, freezers and combinations thereof (OJ 2004, SE, Chapter 12, Volume 1, p. 305), 2 technical regulations establishing energy efficiency requirements for ballasts for fluorescent lighting and household electric refrigerators, freezers and combinations thereof were approved.

Lithuania has transposed to the national law Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings (OJ 2004, SE, Chapter 12, Volume 2, p. 168). Provisions of this Directive have been transposed to the Republic of Lithuania Law on Construction ("Valstybės žinios" (Official Gazette), 1996, No. 32-788; 2001, No. 101-3597) and the Republic of Lithuania Law on

Energy and their secondary legislation. Pursuant to the Republic of Lithuania Law on Energy boilers fired by non-renewable liquid or solid fuel of an effective rated output of at least 20 kW, and air conditioning systems of an effective rated output of more than 12 kW must be inspected to determine their conformity to the established efficiency requirements. In implementing this provision of the Law, the regulations and methodologies for the inspection of boilers, heating systems and air conditioning systems installed in buildings have been drafted and approved by orders issued by the Minister of Economy.

Provisions for establishment of certification procedure of the energy performance of buildings and minimal requirements for energy performance of buildings set in the Directive have been transposed to the Republic of Lithuania Law on Construction. For the purpose of the implementation of this Law, the Construction Technical Regulation STR 2.01.09:2005 "Energy performance of buildings. Certification of Energy Performance" was approved by Order No. D1-624 of 20 December 2005 of the Minister of Environment of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2005, No. 151-5568). Also, the training system for experts for certification of energy performance of buildings has been established and certification of energy performance of buildings is being performed.

In implementing Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005 establishing a framework for the setting of eco-design requirements for energy-using goods and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC of the European Parliament and of the Council (OJ 2005 L, 191, p. 29), on 23 October 2003 the Minister of Economy of the Republic of Lithuania issued Order No. 4-438 ("Valstybės žinios" (Official Gazette), 2007, No. 111-4555), the Technical regulation establishing a framework for the setting of eco-design requirements for energy-using goods and application of its implementation measures was approved. After drafting by the European Commission of the measures of implementation of this Directive, the minimum energy use requirements will be established for specific groups of goods (lighting installations, TV sets, air conditioning facilities, etc.).

In observance of Regulation (EC) No. 2422/2001 of the European Parliament and of the Council, in Lithuania, likewise in the EU at large, the *Energy Star* label is used for energy-efficient office equipment, promoting purchase and use of efficient office equipment.

The energy savings target established in this Action Plan is being achieved through consistent energy efficiency improvement policy implemented in Lithuania since 1995 and with the help of energy efficiency improvement measures described in this Action Plan.

II. REVIEW OF THE CURRENT SITUATION

I. ENERGY USE TENDENCIES AND DISTRIBUTION BY SECTOR

Energy efficiency is measured in consideration of relevant general economic as well as energy indicators and their developments.

As a result of economic recession which started after restoration of independence of the Republic of Lithuania, since 1991 energy consumption considerably decreased in all branches of economy (see Figure 1). In 1991–1994, both primary and final energy consumption decreased by 2.1 times.

When the national economy started to recover between 1995 and 2000, decrease of final energy consumption continued at average annual rate of 3.8%. However, this was already predetermined by structural changes in the national economy, introduction of new technologies replacing energy-consuming technologies inherited from the past, as well as implementation of other measures improving energy efficiency.

After 2000, the national economy manifested particularly rapid growth. In 2000–2007, gross domestic product (hereinafter – GDP) (at current prices of the period) of Lithuania increased by 2.1 times and amounted to EUR 28 billion in 2007. However, final

consumption of energy during the year on average grew by 4.7% and increased only by a factor of 1.4; primary energy consumption increased by a factor of 1.3 (see Figure 1).

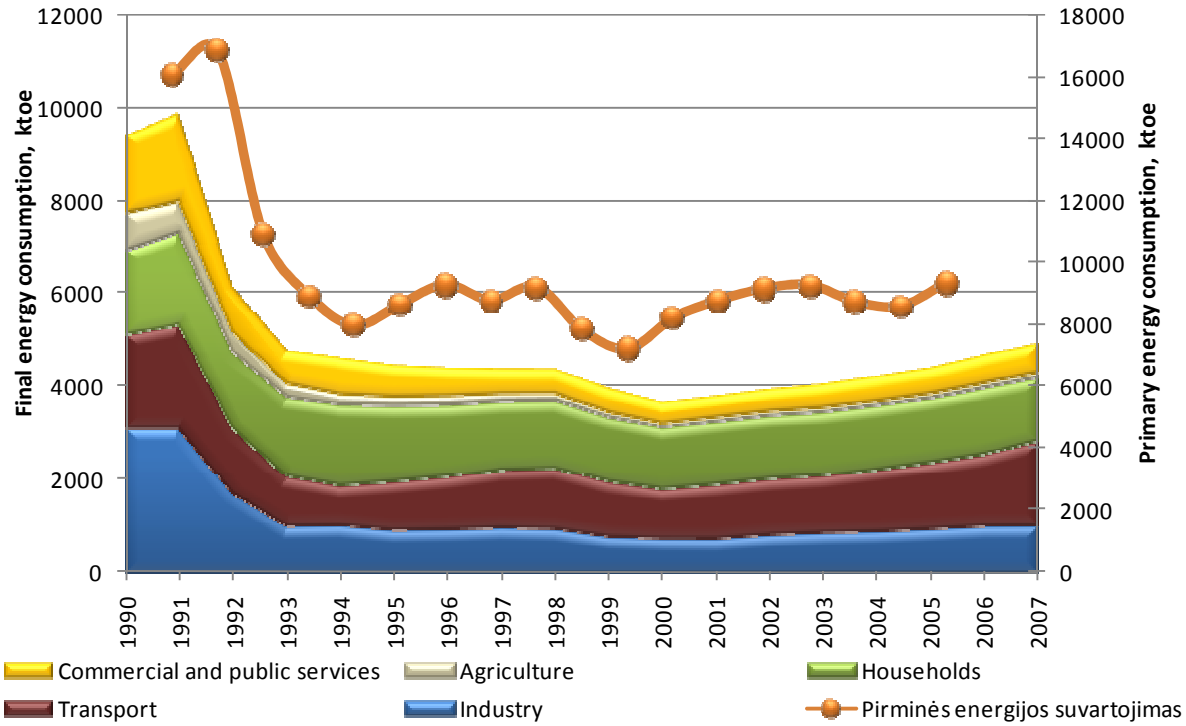

Figure 1. Development of primary and final energy consumption, 1990–2007

In 2006, GDP per capita created in Lithuania was about 1.8 times lower than the average of EU27. Whereas in 2006, average consumption of primary energy per capita was by 1.5 times, of final energy – by 1.7 times, and of final electricity – by 2.3 times lower than EU27 average.

In 2007, the main final energy customers were transport (37%), households (27%), industry (20%) as well as commercial and public services sector (13%). Agriculture and construction, however, accounted only for a small part of energy consumption (2% and 1%, respectively) (see Figure 2). In 2005, 59% of final energy consumed in industry was used in enterprises participating in the EU emission trading system (hereinafter – ETS).

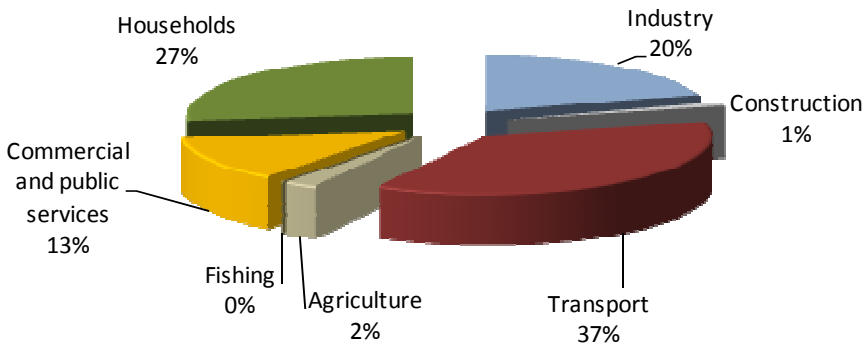

Figure 2. Distribution of final energy consumption by sector, 2007

Figure 3 below reflects primary and final energy intensity in 1995–2007. During this period primary and final energy consumption intensity decreased by 2 times.

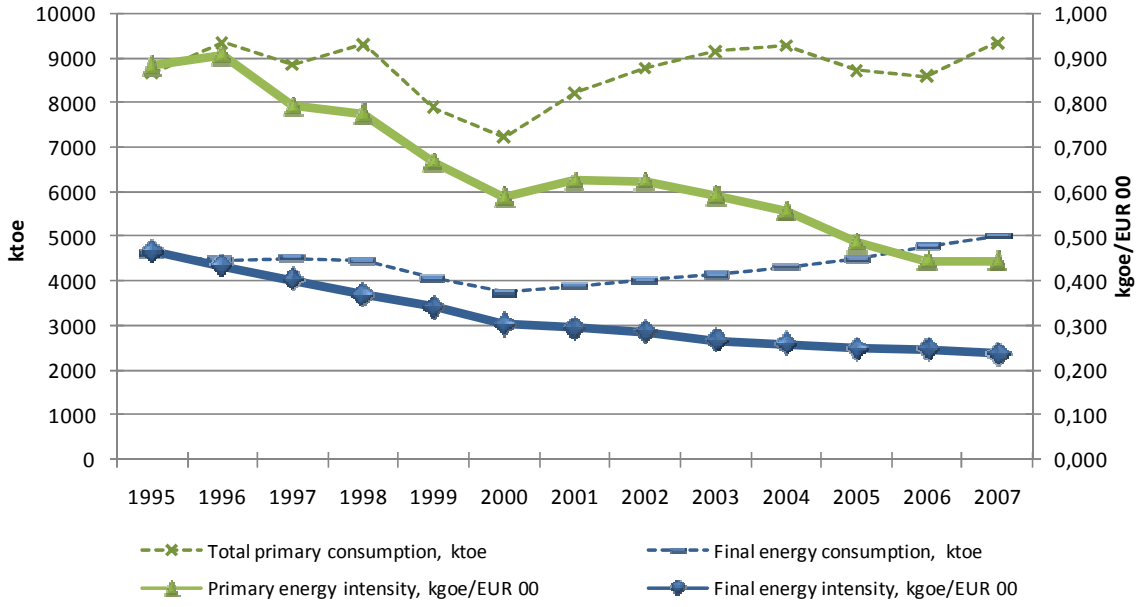

Figure 3. Primary and final energy consumption and consumption intensity

Energy intensity developments in individual branches of economy differed considerably: in 2004, compared with 1990, energy quantities consumed in creating a unit of GDP in agriculture were by 6.1 times, in the sector of services – by 4.1 times, and in industry – by 2.7 times lower. Energy consumption per GDP unit in the transport sector decreased by 1.4 times and in the household sector – by 1.3 times during the same period.

Final energy intensity in Lithuania accounts for about 220 toe/EUR 1,000 (at constant prices of 2000). After making adjustment of final energy intensity based on the purchasing power parities (hereinafter – ppp) and taking into account the situation in other countries and the differences of their industrial and economic structures, energy intensity of Lithuania becomes considerably lower and almost equals the EU average.

II. ENERGY USE IN THE HOUSING SECTOR

Annual growth rate of energy efficiency in the household sector of Lithuania between 1996 and 2004 was 2.7%.

Figure 4 below shows final energy consumption developments in the household sector. In 2007, the household sector consumed largest quantities of thermal energy (37%), electric energy (16%), natural gas (11%) and wood and wood waste (30%). Until 2000, average decrease of annual consumption of final energy in the household sector was 3.5% and since 2000 remained more or less stable. However, electricity consumption kept continuously growing. Since 1996, electricity consumption increased by 53%.

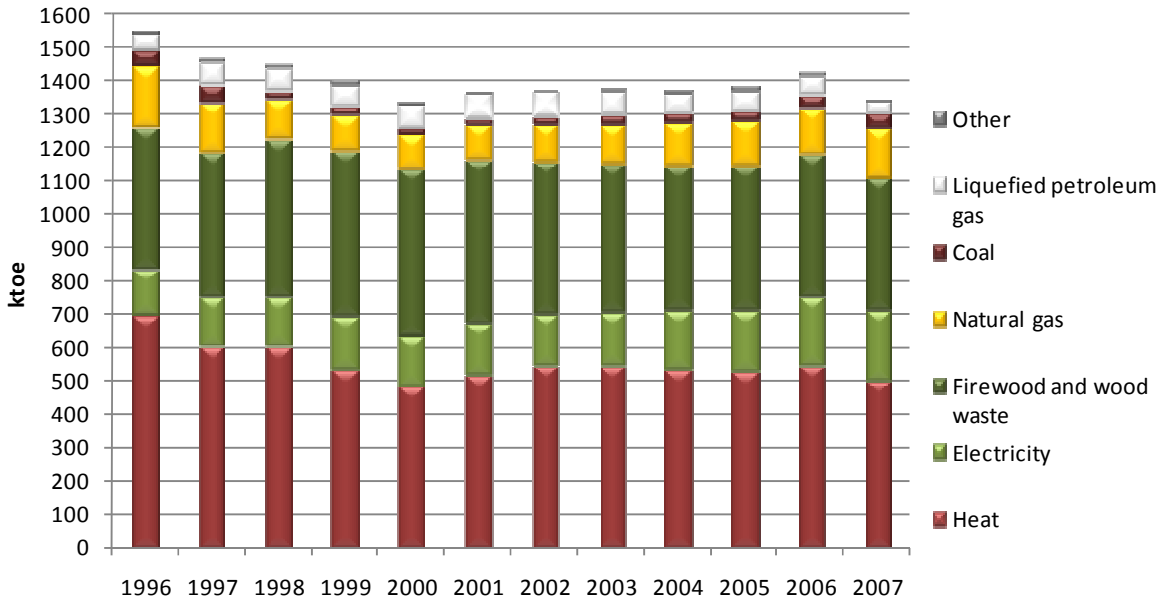

Figure 4. Final energy consumption developments in household sector, 1996–2007

III. ENERGY USE IN THE COMMERCIAL AND PUBLIC SERVICES SECTOR

Between 1996 and the beginning of 2000 electric energy consumption intensity in the sector of services in Lithuania was reducing, but in 2000–2004 it was on an upward trend it. In 2004, electric energy consumption in Lithuania was about 130 kWh/EUR (adjusted to ppp at current prices of 2000).

Figure 5 below reflects final energy consumption developments in the commercial and public service sector. In 2007, this sector consumed largest quantities of thermal energy (34%), electric energy (41%), natural gas (11%), coal (8%) and wood as well as wood waste (4%). Until 2000, final energy consumption in this sector kept diminishing and since 2001 it manifested average annual growth rate of 4.5%. The most rapid growth was observed in electric energy consumption, which since 1996 went up by the factor of 1.9.

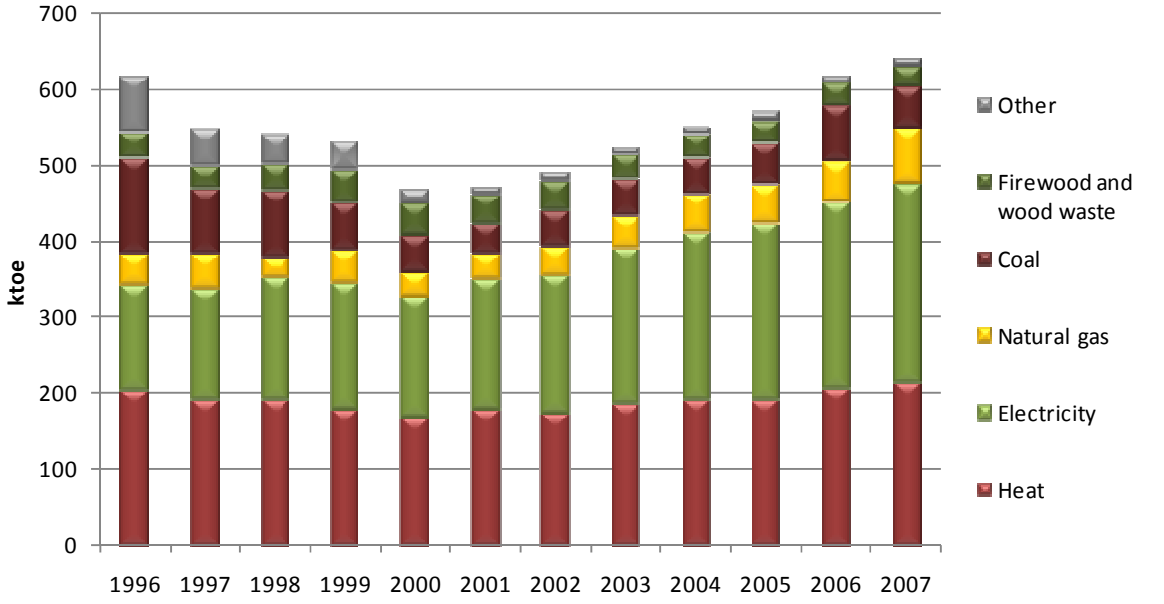

Figure 5. Final energy consumption developments in commercial and public service sector, 1996–2007

IV. ENERGY USE IN THE INDUSTRY SECTOR

In 1998–2004, average annual growth of energy efficiency in the sector of processing industry was 4%.

Figure 6 below highlights energy consumption developments in the industry sector. Total consumption of final energy in industry until 2001 kept decreasing and from 2002 resumed growth at an average annual rate of 5.4%. Electric energy consumption since 2000 augmented almost by 35%. In 2007, the industry sector mostly consumed thermal energy (19%), electric energy (25%), natural gas (28%), coal (12%) as well as fuel wood and wood waste (8%).

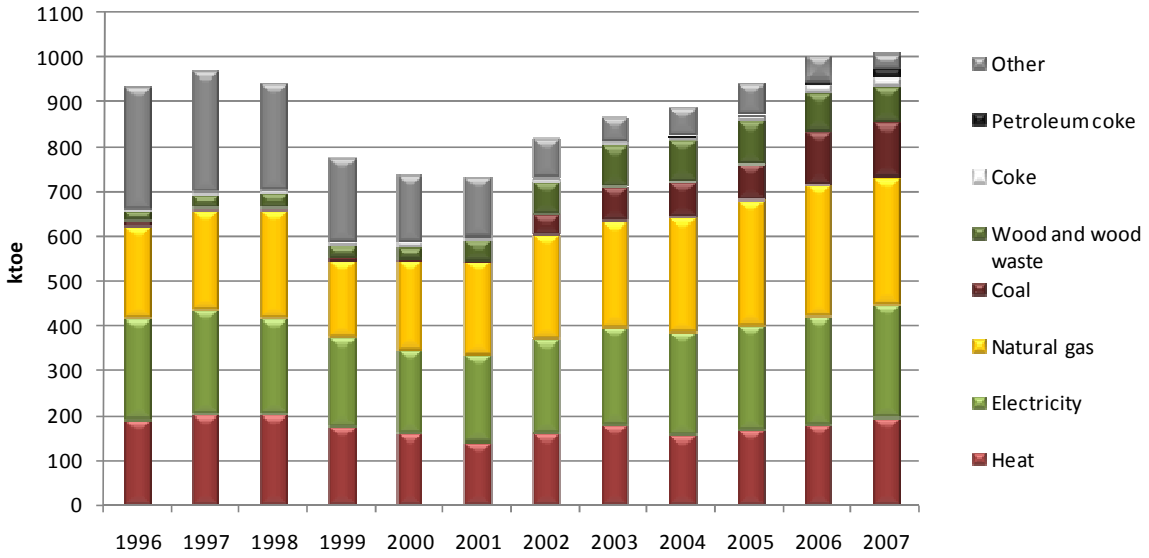

Figure 6. Final energy consumption developments in industry sector, 1996–2007

V. ENERGY USE IN THE TRANSPORT SECTOR

In 1996-2004, average annual growth of energy efficiency in the transport sector accounted for 4.5%. In 1996, energy consumption per motor car totalled almost 0.8% toe/car equivalent, and in 2004 this indicator decreased and already accounted for about 0.6 toe/car equivalent.

However, energy consumption in the transport sector keeps growing. The main reason for such growth is rapidly increasing number of transport vehicles. Between 1995 and 2007 the number of road transport vehicles doubled.

The most rapid growth was observed in the number of motor cars (increase by 2.2 times) and semi-trailer towing vehicles (by 2.8 times). Quantified growth of these types of vehicles can be explained by an increase in the movement of goods and improvement of economic condition of residents. During the period under consideration the turnover of cargoes increased by 2.5 times. In 1995, there were 199 and in 2006 – 470 cars per 1,000 residents in Lithuania.

The number of cars older than 10 years started decreasing. In 2002, they accounted for 93% and in 2006 – for 89%.

Figure 7 below reflects final energy consumption developments in the transport sector. In 2007, this sector consumed largest quantities of diesel fuel (57%), petrol (25%), and liquefied petroleum gas (13%). Consumption of natural gas accounted for 1.5% and of electric energy – for 0.3%. Since 2000 annual growth rate of final energy consumption accounted for 8.4%. During this period, consumption of diesel fuel augmented by 56%, and of petrol – by 24%. Consumption of liquefied petroleum gas manifested considerable growth by the factor of 8.1 during the period under consideration.

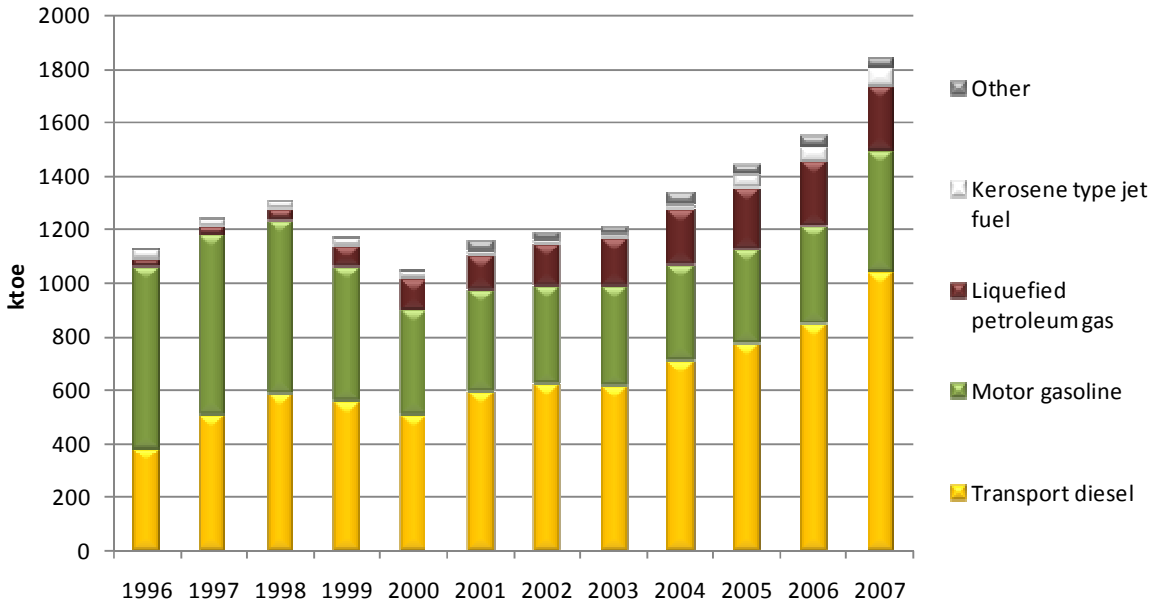

Figure 7. Final energy consumption development in transport sector, 1996–2007

III. ENERGY SAVINGS POTENTIAL

The National Energy Efficiency Programme for 2006–2010 has been drafted in consideration of energy savings potential in separate sectors of the national economy. The total estimated economic energy-savings potential was 11 TWh (see Table 1 and Figure 8).

Table 1. Estimated energy-savings potential by sector

	Final energy consumption	**Economic savings potential**
	TWh	
Multiple-dwelling buildings	9.5*****	3.0*****
Single and two-family residential houses	13.9*****	2.2*****
Public buildings	4.8*****	2.5*****
Trade and services	3.1	1.0
Industry	4.3**	1.2**
Transport	14.3	0.92
Agriculture	1.2	0.13
TOTAL	51.1	11.0

**Energy consumption was estimated on the basis of normal and close-to-normal comfort conditions maintained in all premises during the standard heating season. These indicators exceed statistical data because part of fuel used in rural areas is not included in the accounting of fuel and energy balance. Also, part of the dwelling area is not heated during the whole season and the temperature maintained in it is lower than standard.*

***Energy consumption and energy savings potential in the industry sector is indicated excluding enterprises participating in the ETS assuming that their consumption share accounts for 41% of the total energy consumption (in 2005, industrial enterprises participating in the EU emissions trading scheme consumed 59% of total final energy consumed in the industry sector).*

Figure 8 shows distribution of energy savings potential among sectors. The largest energy savings potential includes the housing and trade and service sectors – 80% of the total energy savings potential. Energy savings potential in industry accounts for 11%, and in

transport – for 8%.

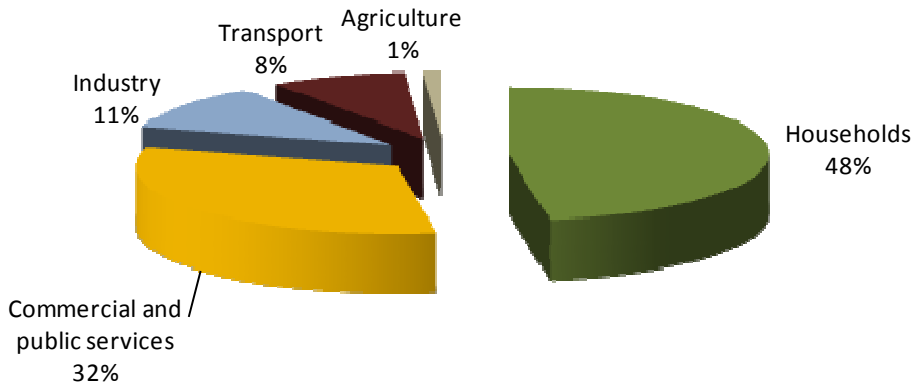

Figure 8. Energy savings potential

One of the main reasons of inefficient use of energy in Lithuania is extremely poor thermal characteristics of the vast majority of old residential and public buildings the heating of which requires large quantities of energy. Renovation of these buildings is one of the key tasks which must be settled as soon as possible in order to achieve higher energy efficiency and avoid negative social effects due to rapidly increasing energy prices and which is currently being addressed.

According to 2001 population census data, 50.9% of all dwellings of Lithuania are supplied with heat by centralised heating supply networks (in towns – 73.5%), 24.6% – by local heating sources (in towns – 16.6%), and 24.5% are heated by other means (in towns – 9.9%). Estimated heat demand for residential buildings when normal and close to normal comfort conditions are maintained in all premises during the standard heating season is 23.4 TWh, of which 18.6 TWh are used for heating and 4.8 TWh – for preparation of hot water, of which for single and two-storey buildings – 12.1 and 1.8 TWh, respectively.

Energy savings potential target in residential buildings and their engineering systems is 5.2 TWh (of which – 3 TWh in multi-storey buildings); investments necessary for this purpose amount to EUR 6.1 and 4.1 billion, respectively. These indicators were obtained assuming that investments into energy-saving renovation of 15% of residential buildings of all groups will amount to EUR 232/m^2, 40% – EUR 116/m^2 and 45% – EUR 58/m^2.

Investments in energy-saving measures in the projects of reconstruction of state-owned public buildings as a rule account for 20–50% of total investments. The other part of investments goes for renovation of physical condition of the building elements or for their upgrading. Energy savings potential target in public buildings and their engineering systems is 2.5 TWh, assuming 52 EUR /m^2 average investment into energy-saving measures in the buildings of all groups.

Energy savings potential in the whole sector of industry was estimated at 2.9 TWh. However, enterprises participating in the ETS of the EU account for the major part of energy savings potential. In order to establish energy savings potential in enterprises which do not participate in the aforementioned scheme, it was assumed that the share of energy savings potential accounts for 41% (1.2 TWh) of total energy savings potential of industry. Such assumption was made in consideration of the fact that in 2005 energy consumed in these enterprises accounted for 41% of energy consumed in industry.

In 1994–2003, the transport sector of Lithuania annually consumed about 13.73 TWh (i.e. 28%) of energy and was the second among sectors in terms of consumed energy quantities (after the housing sector). Due to reducing energy consumption in other sectors, the share of transport increased from 24.7 (1994) to 29.1% (2003). Motor cars account for about

90% of energy consumed in transport. Technical energy savings potential of transport is 0.92 TWh.

IV. ENERGY SAVINGS TARGET

I. CALCULATION OF ENERGY SAVINGS TARGET

The final annual national energy consumption level of all energy customers falling within the scope of the Directive is determined deducting from the "final consumption" indicator provided each year by the Department of Statistics under the Government of the Republic of Lithuania (hereinafter Statistics Lithuania) the final energy consumed by energy customers who do not fall within the scope of the Directive, i.e. participants in the ETS and fuel which does not fall within the energy definition of the Directive, aviation fuel and maritime transport bunker fuel.

Table 2. Calculation of the energy savings target

		Final consumption, ktoe					
		2001	**2002**	**2003**	**2004**	**2005**	**Average**
1.	**Total final energy consumption**	3,877.9	4,028.8	4,139.6	4,307.5	4,491.3	4,169.0
2.	Final energy consumption by customers who do not fall within the scope of the Directive	456.0	475.0	499.9	525.6	557.1	502.7
3.	Final consumption of fuel which does not fall within the scope of the Directive (aviation gasoline, petrol and kerosene type jet fuel)	34.8	30.6	33.0	39.4	50.8	37.7
4.	Final energy consumption within the scope of the Directive (1–2–3)	3,387.1	3,523.2	3,606.7	3,742.5	3,883.4	3,628.6
	9% energy savings target for 2016, ktoe						327
	Established energy savings target, ktoe						404
	Intermediate energy savings target for 2010, ktoe						54

1. ENERGY SAVINGS TARGET CALCULATION ASPECTS

Energy savings targets were calculated using data of Statistics Lithuania, which is responsible for the official statistics of the Republic of Lithuania, excluding data for 2001 on final energy consumption of enterprises which do not fall within the scope of the Directive.

As official statistics for 2001 on final energy consumption of enterprises which do not fall within the scope of the Directive is not available, it was assumed that in 2001 final energy consumption of these enterprises was by 4% lower than in 2002. This assumption was made on the basis of 4% average annual growth of total final energy consumption and final energy consumption during the reference period in enterprises which do not fall within the scope of the Directive.

Data on final energy consumption of enterprises which participate in the ETS and do not fall within the scope of the Directive was based on final energy consumption of a legal person – owner of the facility included in the ETS.

Energy consumption related with armed forces is not deducted from total energy consumption because official statistical data on such type of consumption is not compiled. Furthermore, this consumption is not very relevant for the final result.

Conversion factors used for energy savings target calculation purposes were determined on the basis of values used by Statistics Lithuania. Fuel-burning minimum calorific values of energy resources are given in Annex I to the Action Plan.

Conversion factor determined in estimating electric energy consumption was 1.

2. SETTING THE NATIONAL ENERGY SAVINGS TARGET

The national energy savings target has been established in the National Energy Strategy. The Strategy is the main strategic document of the energy sector defining energy development trends until 2025.

As indicated in the aforementioned Strategy, for the purpose of implementing strategic and development objectives and in consideration of the results of implementation of targets formulated in the previous strategies the following task has been set as one of the most significant ones: starting from 1 January 2008 to achieve 9% final energy savings during the period of 9 years, compared with final energy consumption level of 2005 (final energy consumption in 2005 exceeded the average of 2001–2005 by 7.7%).

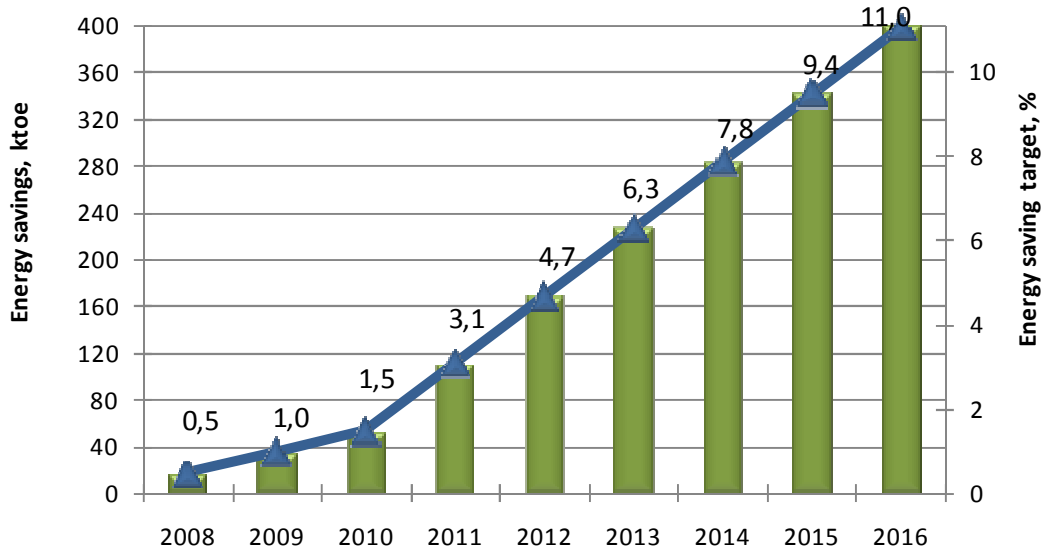

Figure 9. Reaching the indicative target

The Plan of National Energy Strategy Implementation Measures establishes the following intermediate energy savings target for 2008–2010: starting from 1 January 2008, to save during the period of 3 years 1.5% of final energy, compared with average final energy consumption level of 2001–2005.

The intermediate target was calculated assuming that legal framework necessary for the implementation of the Directive will be drafted only in 2008, which means that in the first year of calculation of energy-savings target the application of measures promoting the improvement of energy efficiency will be just started. In view of the above, average annual amount of energy savings during the period of 2008–2010 are expected to amount to 0.5%. Total amount of energy savings in 2008–2010 will account for 1.5% of final energy, i.e. intermediate energy savings target calculated according to the requirements of the Directive is 54 ktoe. The remaining 7.5% of the final energy amount will be saved during the period of 2011–2016 (Figure 9).

II. SUMMARY OF ENERGY EFFICIENCY IMPROVEMENT MEASURES PLANNED TO REACH THE TARGETS

This Section deals with energy efficiency improvement measures which are being implemented and planned with the help of which the national indicative energy savings target for 2008–2016 will be reached.

Energy savings resulting from application of certain part of energy efficiency improvement measures are not available because calculation methodologies necessary for the measuring these savings have not yet been developed. Calculations of planned annual energy savings were made without taking into account energy savings resulting from such measures.

Table 3. Summary of energy efficiency improvement measures

9% energy savings target for 2016 (GWh) **National energy savings target for 2016 (GWh)**		**3,797** **4,700**
National intermediate energy savings target for 2010 (GWh)		**628**
Energy efficiency programmes, energy services and other energy efficiency improvement measures planned to reach the energy savings target	**Planned annual energy savings, end-2010, GWh**	**Planned annual energy savings, end-2016, GWh**
Households sector:	**170**	**1,770**
1. The Lithuanian Housing Strategy approved by Republic of Lithuania Government Resolution No. 60 of 21 January 2004 (“Valstybės žinios” (Official Gazette), 2004, No. 13-387); 2. The Programme of Modernisation of Multi-dwelling Buildings approved by Republic of Lithuania Government Resolution No. 1213 of 23 September 2004 (“Valstybės žinios” (Official Gazette), 2004, No.143-5235; 2005, No.78-2839; 2008, No. 36-1282)	150	1,700
3. EU Structural Fund’ support for 2007–2013	0	50
4. Demonstration project in the field of energy saving (housing) (*early actions*[1])	20	20
5. Efficiency inspections of boiler	n/a	n/a
6. Efficiency inspections of air conditioning systems	n/a	n/a
7. Procedure for promoting the use of renewable energy resources in residential buildings (*will be drafted*)	n/a	n/a
Commercial and public services sector:	**141**	**229**
1. EU Structural Fund’ support for 2007–2013	30	100
2. EU Structural Funds according to the Single Programming Document of Lithuania for 2004–2006 approved by Republic of Lithuania Government Resolution No. 935 of 2 August 2004 (“Valstybės žinios” (Official Gazette), 2004, No. 123-4486) (*early actions*)	40	40
3. Programme of renovation of university student hostels approved by Republic of Lithuania Government Resolution No. 843 of 1 September 2006 (“Valstybės žinios” (Official Gazette), 2006, No. 94-3699)	6	6

[1]Early actions include energy efficiency improvement measures which have been implemented since 1995 and are still influencing the saving of energy.

Energy efficiency programmes, energy services and other energy efficiency improvement measures planned to reach the energy savings target	**Planned annual energy savings, end-2010, GWh**	**Planned annual energy savings, end-2016, GWh**
4. Programme of renovation and provision with teaching aids of general education schools and vocational education and training establishments for 2006–2008 approved by Republic of Lithuania Government Resolution No. 1230 of 16 November 2005 (“Valstybės žinios” (Official Gazette), 2005, No. 137-4919)	7	7
5. Programme of renovation and upgrading of libraries for 2003–2013 approved by Republic of Lithuania Government Resolution No. 1454 of 17 September 2002 (“Valstybės žinios” (Official Gazette), 2002, No. 92-3943)	3	5
6. Programme of renovation of imprisonment institutions and humanisation of imprisonment conditions for 2004–2009 approved by Republic of Lithuania Government Resolution No. 619 of 24 May 2004 (“Valstybės žinios” (Official Gazette), 2004, No. 85-3081)	5	5
7. Programme of modernisation of cultural centres for 2007–2020 approved by Republic of Lithuania Government Resolution No. 785 of 4 August 2006 (“Valstybės žinios” (Official Gazette), 2006, No. 88-3470)	2	8
8. Programme for improvement of schools approved by Republic of Lithuania Government Resolution No. 759 of 28 May 2002 (“Valstybės žinios” (Official Gazette), 2002, No. 54-2130) (*early actions*)	12	12
9. Programme of renovation and reconstruction of science and studies institutions for 2007–2009 approved by Order No. ISAK-2456 of 28 December 2006 of the Minister of Education and Science of the Republic of Lithuania (“Valstybės žinios” (Official Gazette), 2007, No. 4-174)	17	17
10. Programme of modernization of museums for 2007–2015 approved by Republic of Lithuania Government Resolution No. 275 of 14 March 2007 (“Valstybės žinios” (Official Gazette), 2007, No. 34-1238)	4	14
11. Special programme “Implementation of energy savings projects” carried out according to the Rules of administration of the Republic of Lithuania Ministry of Economy programme funds granted for the financing of project activities and capital formation approved by Order No. 4-143 of 27 April 2006 of the Minister of Economy of the Republic of Lithuania (“Valstybės žinios” (Official Gazette), 2006, No. 54-1966)	6	6
12. Energy-savings programme for buildings of public bodies according to the Loan Agreement concluded between the Ministry of Finance of the Republic of Lithuania and Nordic Investment Bank on 28 October 2002 (*early actions*)	4	4
13. Respective 2003, 2004, 2005, 2006, 2007 and 2008 programmes of construction, reconstruction, repairs and	5	5

Energy efficiency programmes, energy services and other energy efficiency improvement measures planned to reach the energy savings target	**Planned annual energy savings, end-2010, GWh**	**Planned annual energy savings, end-2016, GWh**
material provision of municipal buildings used for educational, cultural, health care, social and other purposes approved by Republic of Lithuania Government Resolutions No. 425 of 8 April 2003; No. 449 of 19 April 2004; No. 595 of 30 May 2005; No. 481 of 29 May 2006; No. 720 of 11 July 2007; and No. 694 of 9 July 2008 ("Valstybės žinios" (Official Gazette), 2003, No. 35-1480; 2004, No. 58-2059; 2005, No. 69-2474; 2006, No. 61-2192; 2007, No. 80-3237; and 2008, No. 83-3298, respectively)		
14. Lithuanian Environmental Investment Fund	n/a	n/a
15. Requirement to purchase energy-efficient goods	n/a	n/a
16. National Green Procurement Implementation Programme approved by Republic of Lithuania Government Resolution No. 801 of 8 August 2007 ("Valstybės žinios" (Official Gazette), 2007, No. 90-3573)	n/a	n/a
Industry sector:	**0**	**395**
1. Voluntary agreements with industrial enterprises	0	370
2. Promotion of small-scale cogeneration	n/a	n/a
3. 2007–2013 EU Structural Funds (cogeneration)	0	25
4. 2007–2013 EU Structural Funds (audits)	n/a	n/a
Transport sector:	**23**	**460**
1. Energy resources and energy efficiency improvement programme in the transport sector (*draft*)	23	335
2. State technical inspection of road motor vehicles	n/a	50
3. Renovation and modernization of public transport	n/a	25
4. Improvement of road infrastructure and reduction of traffic jams	n/a	50
5. Campaign "In the city without a car"	n/a	n/a
6. Support for research projects related with improvement of energy resources and energy efficiency	n/a	n/a
Horizontal and cross-sectoral measures:	**758**	**1871**
1. National Energy Strategy	Starting from 2008 during 3 years to reduce relative final energy consumption by 1.5%	In 2008–2016 to save 9% of final energy compared with final energy consumption level of 2005

Energy efficiency programmes, energy services and other energy efficiency improvement measures planned to reach the energy savings target	**Planned annual energy savings, end-2010, GWh**	**Planned annual energy savings, end-2016, GWh**
2. National Energy Efficiency Improvement Programme for 2006–2010	1. Heat consumption in existing buildings will decrease by 7%; 2. Cogeneration will make up 20% of electricity generation in total balance; 3. Use of waste energy resources will account for 2 TWh	1. Heat consumption in existing buildings will decrease by 7%; 2. Cogeneration will make up 20% of electricity generation in total balance; 3. Use of waste energy resources will account for 2 TWh
3. Construction Technical Regulation STR 2.05.01:2005 “Thermal technique of building envelopes” approved by Order No. D1-156 of 18 March 2005 of the Minister of Environment of the Republic of Lithuania (“Valstybės žinios” (Official Gazette), 2005, No. 100-3733)	350	830
4. Construction Technical Regulation STR 2.05.01:1999 “Thermal technique of building envelopes” approved by Order No. 117 of 29 April 1999 of the Minister of Environment of the Republic of Lithuania (“Valstybės žinios” (Official Gazette), 1999, No. 41-1297), repealed with effect from 19 August 2005 (“Valstybės žinios” (Official Gazette), 2005, No. 100-3733) (*early actions*)	290	290
5. Construction Technical Regulation STR 2.09.02:2005 “Heating, ventilation and air conditioning” approved by Order No. D1-289 of 9 June 2005 of the Minister of Environment of the Republic of Lithuania (“Valstybės žinios” (Official Gazette), 2005, No. 75-2729)	n/a	n/a
6. Construction Technical Regulation STR 2.01.09:2005 “Energy performance of buildings. Certification of energy performance” approved by Order No. D1-624 of 20 December 2005 of the Minister of Environment of the Republic of Lithuania (“Valstybės žinios” (Official Gazette), 2005, No. 151-5568)	8	11
7. Voluntary agreements with energy enterprises on improvement of final energy efficiency (*draft*)	110	740
8. Qualification and certification schemes	n/a	n/a
9. Requirements for final customers to submit individual meters accurately reflecting actual energy consumption of the final customer and recording precise time of such consumption	n/a	n/a

Energy efficiency programmes, energy services and other energy efficiency improvement measures planned to reach the energy savings target	**Planned annual energy savings, end-2010, GWh**	**Planned annual energy savings, end-2016, GWh**
10. Requirements for energy accounting and installation of meters for the purposes of such accounting	n/a	n/a
11. Preferential VAT rate of 9%	n/a	n/a
12. Profit tax rebate (*draft*)	n/a	n/a
13. Environmental pollution tax rebate	n/a	n/a
14. Information, education and training activities	n/a	n/a
Total expected savings:	**1092 (726, excl. early actions)**	**4725**
Measures implementing Article 5 of the Directive on energy end-use efficiency in the public sector: 1. Programmes and funds related with energy efficiency improvement in public buildings. 2. Requirement to purchase energy-efficient goods. 3. National green procurement implementation programme. 4. Recommendations for the use of energy efficiency improvement criterion in public procurement (*draft*). 5. Exchange of experience in the field of efficient use of energy resources and energy efficiency between public authorities, institutions, enterprises, and organisations at the national and international level. 6. Media coverage of examples of best practice in the field of efficient use of energy and energy resources in the public sector. 7. Organisation and implementation of energy consumption audits in public buildings and of recommendations provided in audit report. 8. Consulting, awareness-raising and training of the public sector employees on energy efficiency improvement matters.		
Measures implementing Article 7 of the Directive on availability of information: 1. Requirement for energy enterprises to provide information to energy customers and municipal authorities about efficient use of energy resources and energy, safe and cost-efficient use of energy objects and facilities, energy objects and facilities under construction and reconstruction, energy prices and services provided to energy customers. 2. Rendering awareness-raising, methodological and organizational assistance to business entities of Lithuania and EU, scientific and consulting bodies participating in EU programmes aimed at improving efficiency of use of energy and energy resources. 3. Consulting and awareness raising of final customers of energy, providing training for them on energy efficiency		

Energy efficiency programmes, energy services and other energy efficiency improvement measures planned to reach the energy savings target	Planned annual energy savings, end-2010, GWh	Planned annual energy savings, end-2016, GWh
improvement matters. 4. Publicizing information about programmes under implementation, consulting and training how to use measures covered by the programmes. 5. Organising the preparation and publicizing of the information material about savings of energy resources and energy. 6. Dissemination of energy saving ideas over TV and radio. 7. Organising conferences, seminars, contests and exhibitions aimed at increasing abilities of specialists and the public to use energy resources and energy more efficiency. 8. Standard form of agreement on energy efficiency in buildings used when concluding agreements on energy efficiency between owners of buildings (or authorised persons representing the owners' interests) and legal persons providing energy services.		

Figure 10 provides the distribution of saved amount of energy by areas of energy efficiency improvement measures.

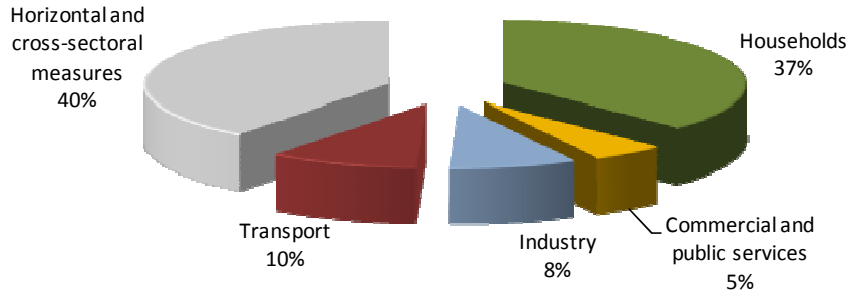

Figure 10. Distribution of saved amount of energy by areas of measures

V. ENERGY EFFICIENCY IMPROVEMENT MEASURES BY SECTOR

I. ENERGY EFFICIENCY IMPROVEMENT IN THE HOUSEHOLDS SECTOR

This Section deals with energy efficiency improvement measures in the households sector. The great majority of measures of this sector are aimed at renovation of multi-dwelling buildings inefficiently using energy for heating purposes, which do not have insulation and are of old construction (construction permits issued before 1993) with a view to improving their energy efficiency.

In Lithuania, over 60% percent of multi-dwelling buildings constructed during the last four decades of the previous century were predominated by construction of large-

dimension panel multi-dwelling buildings. Such multi-dwelling buildings are not efficient in terms of consumption of energy, their maintenance in winter season is expensive, and therefore dwellers with low income cannot afford to pay their heating bills. Part of expenses on heating and hot water of low-income families and single individuals is compensated by the state. The existing system of compensations for heating and hot water is inefficient. With growing energy prices more and more allocations from the State Budget of the Republic of Lithuania are necessary for the compensations. The country imports the major part of energy resources, thus it has a negative impact on its balance of payments.

As the dwelling stock is getting older and energy resources are becoming more and more expensive, the problem of efficient use of energy is of high relevance. Individual owners of flats are incapable of addressing this problem: the blocks of flats need complex renovation, residential areas (districts) must be modernised, including the upgrading of engineering and social infrastructure. The existing multi-dwelling buildings' modernisation financing mechanism which uses credit funds of commercial banks and other credit institutions, funds of residents, State and municipal budgets of the Republic of Lithuania enables residents to modernise multi-dwelling buildings in which they live. However, in order to implement complex modernisation of residential areas (districts) it is necessary to improve this mechanism using for this purpose financial assistance of the EU and other funds, as well as resources of private investors while concurrently encouraging the involvement of municipalities.

One of the most important goals of the Lithuanian Housing Strategy is to ensure efficient use, maintenance, renovation and modernisation of existing dwellings and reasonable use of energy resources. The Strategy provides that until 2020 the existing multi-dwelling buildings and their engineering installations will be renovated and modernised according to the possibilities and economic feasibility. It is planned to reduce relative consumption of thermal energy calculated per unit of used dwelling area up to 30%.

Since 1996, the energy saving (housing) demonstration project has been implemented in the Republic of Lithuania. 550 associations of multi-dwelling building owners availed themselves of the opportunities offered by this project and implemented 626 projects of renovation of residential houses. Energy saving measures introduced during implementation of this project facilitated in average saving 20–30% and in some cases even 60–70% of heat.

The mechanism of financing and state support for modernisation of multi-dwelling buildings, which has been developed, stimulated residents to initiate renovation of their dwellings and stimulated their investments into complex renovation of buildings. Since 2005, more than 720 investment projects have been prepared, planned amount of investments exceeds EUR 231 million and 306 projects have been fully implemented. Compared with energy saving (housing) demonstration project, the scope of investment projects has grown significantly, in 2007 the number of projects under preparation has noticeably increased.

In addition to modernisation of multi-dwelling buildings, the State finances the costs of energy efficiency inspecting services to determine the conformity with the established energy efficiency requirements of boilers and heating systems which use boilers older than 15 years for heating of residential premises and also of air conditioning systems installed in the buildings for cooling of residential premises.

It is planned to draft the procedure promoting wider use of renewable energy resources in the housing sector reducing thereby the use of fossil fuel and promoting the use of renewable energy resources.

Energy efficiency improvement measures in the housing sector cover the period of 1998–2020.

1. SUMMARY OF ENERGY EFFICIENCY IMPROVEMENT MEASURES

Table 4. Energy efficiency improvement measures

Seq. No.	Title	Goals and tasks	Duration	Planned annual energy savings for 2016, GWh
1.	Lithuanian Housing Strategy	Goals (related with energy efficiency improvement): ▪ ensuring efficient use, maintenance, renovation and modernisation of existing dwellings and efficient use of energy resources; ▪ increasing capacities of entities of the housing sector to participate in the housing market with a view to creating a coherent housing sector management system at the state, municipal and societal levels, the mechanism of their synergy, ensuring the protection of consumer rights as well as public awareness-raising, continuous training and education of housing sector participants. Tasks (renovation and modernisation of residential buildings): ▪ establishment of an effective financing mechanism for renovation and modernisation of multi-dwelling buildings using experience gained during implementation of experimental project of saving energy in dwellings financed by the World Bank, credit resources of Lithuanian banks, possibilities of housing credit insurance and state support provided to low-income individuals and financing possibilities offered by international financial institutions and funds; ▪ development of the system of financial support to low-income households which implement effective renovation and modernisation projects of multi-dwelling buildings.	2004–2020	See point 2 of Table 4
2.	Multi-dwelling buildings modernisation programme	Goal: with a view to achieving better quality of life, sound use of energy resources and reduction of budget spending for compensation of heating costs, to encourage owners of multi-	2005–2020	1,700

Seq. No.	Title	Goals and tasks	Duration	Planned annual energy savings for 2016, GWh
		dwelling buildings and other dwellings to carry out by using state aid the complex modernisation of multi-dwelling buildings and residential areas (districts) by creating appropriate conditions. Tasks: ▪ ensuring that state aid provided for modernisation of multi-dwelling buildings stimulates complex modernisation of multi-dwelling buildings and implementation of energy efficiency measures; ▪ improvement of legal framework to facilitate the simplification of procedures of preparation and coordination of investment projects and more efficient use of state budget funds allocated for multi-dwelling buildings' modernisation financing purposes; ▪ improvement of public-awareness raising and education on the matters of maintenance and modernisation of multi-dwelling buildings, efficient use of energy resources, encouraging residents to initiate modernisation of mufti-dwelling buildings.		
3.	2007–2013 EU Structural Funds (Cohesion Promotion Action Programme)	Goal – renovation of mufti-dwelling buildings improving their energy efficiency in the first instance.	2007–2013	50
4.	Energy saving (dwelling) demonstration project (*early actions*)	Goal – improvement of energy efficiency in the housing sector	1998–2003	20
5.	Boiler efficiency inspection	Goal – to establish regular efficiency testing of heating boilers installed in buildings of nominal output not smaller than 20 kW burning non-renewable solid or liquid fuels and one-time efficiency testing of heating systems with boilers older than 15 years to guarantee that efficiency of heating systems meets sound economic requirements.	from 2007	n/a

Seq. No.	Title	Goals and tasks	Duration	Planned annual energy savings for 2016, GWh
6.	Air conditioning system efficiency inspection	Goal – to establish regular efficiency testing of heating boilers installed in buildings of nominal output exceeding 12 kW to ensure that efficiency of air conditioning systems meets sound economic requirements and their nominal output satisfies cooling requirements of the building.	from 2008	n/a
7.	Procedure promoting the use of renewable energy resources in residential buildings (*will be drafted*)	Goal **–** promote the use of renewable energy resources in residential houses	from 2010	n/a
			Total	**1,770**

By 2016 it is planned to save 1,770 GWh of final energy or 37% of the established energy savings target in the housing sector. This figure covers only those measures the amount of energy savings of which was quantifiable. Measures 5–7 provided for in Table 4 will additionally contribute to the savings target.

2. DESCRIPTION OF INDIVIDUAL ENERGY EFFICIENCY IMPROVEMENT MEASURES

This Section deals with energy efficiency improvement individual measures which were, are and will be implemented in the housing sector.

Table 5. Description of the Lithuanian Housing Strategy

Measure	**1. *LITHUANIAN HOUSING STRATEGY***
Category	Strategic document
Regional application	National level
Target group	Residential buildings. 27% or 15.7 TWh of final energy was consumed by households in 2007. Households consumed 5.8 TWh of thermal energy, 4.7 TWh of fuel wood and wood waste, 1.7 TWh of natural gas and 0.5 TWh of coal.
Energy end-use efficiency improvement actions	Renovation and (or) modernisation of heating systems of the great majority of multi-dwelling buildings; renovation and warming up of roof constructions; replacement or renovation of windows and doors; correction of wall welds' defects in large-dimension panel residential buildings and reduction of heat permeability of walls of these buildings.
Efficiency	In implementing the priority axis of this Strategy – promotion of renovation and modernisation of residential buildings improving their energy efficiency and improvement of the financing

	mechanism – the developed mechanism of crediting the financing of modernisation of multi-dwelling buildings and provision of state aid stimulated the initiative of residents to renovate their dwellings and invest more actively into complex renovation of buildings. For the purpose of achieving the objectives of the Strategy the Multi-dwelling Buildings Modernisation Programme is being implemented (see Table 6).
If available: annual energy savings target for 2010 and 2016	Reduction by at least 30% of relative energy and fuel consumption calculated per unit of useful dwelling area. Savings targets for 2010 – 150 GWh, and for 2016 – 1,700 GWh
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2004. End of implementation – 2020.

Table 6. Description of the Multi-dwelling Buildings Modernisation Programme

Measure	**2. *MULTI-DWELLING BUILDINGS MODERNISATION PROGRAMME***
Category	Programme document / Financial instrument
Regional application	National level
Target group	Multi-dwelling buildings Multi-dwelling buildings are inhabited by 66% of the country's population. In 2007, households consumed 27% or 15.7 TWh of final energy. Households consumed 5.8 TWh of thermal energy, 4.7 TWh of fuel wood and wood waste, 1.7 TWh of natural gas and 0.5 TWh of coal.
Energy end-use efficiency improvement actions	Actions financed by the state – modernisation and (or) reconstruction of heating and hot water systems of the building, including modernisation and reconstruction of heating installations in flats; modernisation or reconstruction of the heating unit or boiler-room; replacement of windows; glassing of balconies (lounges) under the joint project of glassing of all balconies (lounges); reconstruction of roofs providing additional warming up, including installation of new warmed up roofs (excluding installation of attic premises); warming up of façade walls.
Efficiency	State aid allocated according to the Programme covers up to 50% of the amount of investments under measures supported by the State depending upon energy efficiency of the project; compensating for low-income individuals all or part of the initial contribution, credit insurance contribution, credit and interest. Actions planned in addition to financial assistance for project implementation: ▪ preparation of the feasibility study on financing of investment programmes of modernisation of separate residential areas (districts) and involvement of private investors, analysing sources of financing of the aforementioned programmes, legal and economic investment promotion methods and development of the technical task for the preparation of demonstration investment programme for the modernisation of a residential area (district); ▪ preparation of demonstration investment programme for the

	modernisation of a residential area (district); ▪ preparation of typical investment projects and technical designs for the modernisation of multi-dwelling buildings; ▪ improvement of legal framework facilitating the simplification of the procedures of preparation and coordination of investment projects and more efficient use of the state budget funds allocated for the financing of modernisation of multi-dwelling buildings; ▪ improvement of public-awareness raising and education on the matters of maintenance and modernisation of multi-dwelling buildings, efficient use of energy resources, encouraging residents to take initiative of modernisation of mufti-dwelling buildings. As an outcome of implementation of this Programme, minimum 70% (24,000) of multi-dwelling buildings for which construction permits were issued before 1993 (before establishing more stringent requirements for thermal characteristics of building envelopes) will be modernised; thermal energy and fuel consumption per unit of useful dwelling area of modernised mufti-dwelling buildings will be reduced by at least 30%, compared with 2004; also, complex modernisation of residential areas (districts) will be started according to investment programmes for the modernisation of residential areas (districts) prepared by municipalities. Currently, 306 projects have already been implemented. This Programme implements the Lithuanian Housing Strategy (see Table 5). This measure is directly related with preferential VAT rate of 9% (see Table 52)
If available: annual energy savings target for 2010 and 2016	Savings targets for 2010 – 150 GWh, and for 2016 – 1,700 GWh.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2005. End of implementation – 2020.

Table 7. Description of 2007–2013 EU Structural Funds (Operational Programme "Promotion of Cohesion")

Measure	**3.** ***2007–2013 EU STRUCTURAL FUNDS*** **(*OPERATIONAL PROGRAMME "PROMOTION OF COHESION"*)**
Category	Financial instrument
Regional application	Problem areas of the country
Target group	Sector of residential buildings. In 2007, households consumed 27% or 15.7 TWh of final energy. Households consumed 5.8 TWh of thermal energy, 4.7 TWh of fuel wood and wood waste, 1.7 TWh of natural gas and 0.5 TWh of coal.
Energy end-use efficiency improvement actions	Renovation of multi-dwelling buildings improving their energy efficiency. Supported activities: modernisation of multi-dwelling buildings (reconstruction of heating and hot water systems; replacement of windows; glassing of balconies (lounges) according to the joint project, reconstruction of roofs – additional warming up, including

	installation of new warmed up roofs (excluding installation of attic premises); warming up of façade walls.
Efficiency	Financial support will be provided for the implementation of refurbishment of multi-dwelling buildings. It is planned that until 2015 150 multi-dwelling buildings will be renovated in problem areas of the country improving dwelling conditions for 4,100 individuals.
If available: annual energy savings target for 2010 and 2016	Savings targets for 2010 – 0 GWh, and for 2016 – 50 GWh.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2007. End of implementation – 2015.

Table 8. Description of Energy saving (dwelling) demonstration project

Measure	**4.** ***ENERGY SAVING (DWELLING) DEMONSTRATION PROJECT***
Category	Financial instrument
Regional application	National level
Target group	Sector of residential buildings. In 2007, households consumed 27% or 15.7 TWh of final energy. Households consumed 5.8 TWh of thermal energy, 4.7 TWh of fuel wood and wood waste, 1.7 TWh of natural gas and 0.5 TWh of coal.
Energy end-use efficiency improvement actions	Renovation of multi-dwelling buildings improving their energy efficiency. Implemented energy saving measures: renovation of heating units, replacement, repairs and insulation of windows and doors, renovation of heating systems, glazing of balconies, repairs and warming up of walls and roofs of buildings.
Efficiency	Financial support was provided for the implementation of multi-dwelling buildings' renovation projects. Opportunities offered by this Project were used by 550 associations of multi-dwelling building owners which implemented 626 projects of renovation of residential buildings. Energy saving measures introduced during the implementation of this Project facilitated in saving about 20–30% and in some cases – 60–70% of heat.
If available: annual energy savings target for 2010 and 2016	Savings target for 2010 – 20 GWh, and for 2016 – 20 GWh.
Implementation stage and exact period	Measure is already implemented. Beginning of implementation – 1998. End of implementation – 2003.

Table 9. Description of boiler efficiency inspection

Measure	**5.** ***BOILER EFFICIENCY INSPECTION***
Category	Regulation / Financial instrument
Regional application	National level

Target group	Residential buildings. In 2007, households consumed 27% or 15.7 TWh of final energy. Households consumed 4.7 TWh of fuel wood and wood waste, 1.7 TWh of natural gas and 0.5 TWh of coal and 2.5 TWh of electric energy.
Energy end-use efficiency improvement actions	The following energy efficiency inspections must be carried out: ▪ inspection of the conformity of boilers burning non-renewable solid or liquid fuel the nominal output of which is 20–100 kW must be carried out once in three years; ▪ inspection of the conformity of boilers burning non-renewable solid or liquid fuel the nominal output of which exceeds 100 kW must be carried out once in two years; ▪ conformity of heating systems using boilers of 20 kW and higher nominal output must be inspected once when at the time of inspection of the boiler installed in the system, more than 15 years have elapsed from the manufacturing of such boiler.
Efficiency	Mandatory conformity testing of boilers and heating systems using boilers older than 15 years intended for heating of residential premises is regulated by the Law on Energy and financed in the manner established by the institution authorised by the Government of the Republic of Lithuania. The conformity testing service to residents is provided free of charge.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2007. End of implementation – open-ended.

Table 10. Description of air conditioning system efficiency testing

Measure	**6.** ***AIR CONDITIONING SYSTEM EFFICIENCY TESTING***
Category	Regulation / Financial instrument
Regional application	National level
Target group	Residential buildings. In 2007, households consumed 27% or 15.7 TWh of final energy. In 2007, households consumed 2.5 TWh of electric energy.
Energy end-use efficiency improvement actions	Inspection of conformity of air conditioning systems of more than 12 kW nominal output installed in the buildings with energy efficiency requirements must be carried out once in three years.
Efficiency	Mandatory inspection of air conditioning systems is regulated by the Law on Energy and financed in the manner established by the institution authorised by the Government of the Republic of Lithuania. The conformity testing service to residents is provided free of charge.
If available: annual energy savings target for 2010 and 2016	n/a

Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2008. End of implementation – open-ended.

Table 11. Description of the procedure promoting the use of renewable energy resources in residential buildings

Measure	**7. *PROCEDURE PROMOTING THE USE OF RENEWABLE ENERGY RESOURCES IN RESIDENTIAL BUILDINGS***
Category	Financial instrument
Regional application	National level
Target group	Residential buildings. In 2007, households consumed 27% or 15.7 TWh of final energy. Households consumed 5.8 TWh of thermal energy, 4.7 TWh of fuel wood and wood waste, 2.5 TWh of electric energy, 1.7 TWh of natural gas and 0.5 TWh of coal.
Energy end-use efficiency improvement actions	Equipment using renewable energy resources will be installed in residential buildings which will reduce the amount of purchased energy.
Efficiency	Procedure promoting the use of renewable energy resources in residential buildings will be drafted and it will serve as the basis for the development of mechanisms promoting implementation of projects of the use of renewable energy resources in residential buildings.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	New measure (*will be drafted*). Beginning of implementation – 2010. End of implementation – not specified.

II. ENERGY EFFICIENCY IMPROVEMENT IN THE COMMERCIAL AND PUBLIC SERVICES SECTOR

This Section elaborates on energy efficiency improvement measures in the sector of commercial and public services. The vast majority of measures of this sector include programmes aimed at the financing of energy efficiency improvement of buildings. The Section also covers the measure promoting public sector institutions to purchase energy-efficient goods.

The main reason for inefficiency of energy consumption in Lithuania is extremely poor thermal characteristics of the great majority of public buildings the heating of which requires large amounts of energy. Renovation of such buildings is one of the most important tasks which must be addressed as soon as possible in order to improve energy efficiency.

The infrastructure of many institutions providing public services is of unsatisfactory condition. Activities of the great majority of public service institutions are burdensome due to poor condition of buildings: the majority of buildings of institutions providing health care, social and education services erected several decades ago do not meet the requirements of existing standards.

Building modernization programmes prepared by the Government of the Republic of Lithuania provide favourable conditions for investments.

Energy efficiency improvement measures in the sector of trade and services cover

the period of 2001–2020.

1. SUMMARY OF ENERGY EFFICIENCY IMPROVEMENT MEASURES

This Section summarises energy efficiency improvement measures which were, are and will be implemented in the sector of trade and services.

Table 12. Energy efficiency improvement measures in the sector of trade and services

Seq. No.	**Title**	**Goals and tasks**	**Duration**	**Planned annual energy savings for 2016, GWh**
1.	2007–2013 EU Structural Funds (Operational Programme "Promotion of Cohesion")	Goal – reduction of energy consumption in public buildings	2007–2013	100
2.	2004–2006 EU Structural Funds for the improvement of energy efficiency in the public sector (*early actions*)	Goal – improvement of energy efficiency in the public sector	2004–2006	40
3.	Programme of renovation of university student hostels	Goal – renovation of the buildings of hostels ensuring their conformity to the main requirements for construction works, improving energy performance of buildings and conditions of living, hygiene and use of premises for students. Tasks: reconstruction of hostel building structures and engineering systems; upgrading energy systems of buildings; reducing costs of living in hostels and guaranteeing sound use of state funds.	2006–2009	6
4.	Programme of renovation and provision with teaching aids of general education schools and vocational education and training establishments for 2006–2008	Goal – renovation of school buildings and teaching aids adapting buildings for installation of information and other technologies, improvement of learning conditions for children. Tasks: better use of funds allocated for education; reduction of energy consumption; use of funds saved in schools for improving the quality and accessibility of education; guaranteeing healthy and safe conditions for learning and education of pupils; training the staff of renovated schools to use the	2006–2008	7

Seq. No.	Title	Goals and tasks	Duration	Planned annual energy savings for 2016, GWh
		structures of reconstructed buildings, installed equipment, save heat and electricity; ensuring appropriate maintenance of reconstructed buildings in order to extend their useful life.		
5.	Programme of renovation and upgrading of libraries for 2003–2013	One of the tasks – improvement of library activities through renovation of old and construction of new library buildings.	2003–2013	5
6.	Programme of renovation of imprisonment institutions and humanisation of imprisonment conditions for 2004–2009	Goal – reconstruction of imprisonment institutions until 2010 to ensure their conformity to the requirements of the Lithuanian Hygiene Norms and European Prison Rules; improvement of living conditions and health care services for imprisoned persons; movement of the hospital of the places of imprisonment; provision of institutions for punishment execution with tangible fixed assets.	2004–2009	5
7.	Programme of modernisation of cultural centres for 2007–2020	Goals – provision of adequate conditions for cultural activity of municipal cultural centres; improvement of working conditions for staff of municipal cultural centres; reduction of maintenance costs of buildings of municipal cultural centres. One of the tasks – reconstruction and overhaul of 63 buildings of municipal cultural centres.	2007–2020	8
8.	Programme for improvement of schools (*early actions*)	Primary goal – essential improvement of education of general education (primary and secondary) school pupils of grades V-X and of their learning environment.	2002–2005	12
9.	Programme of renovation and reconstruction of science and studies institutions for 2007–2009	Goal – renovation of buildings of science and studies institutions, guaranteeing their conformity to the main requirements of construction works; increasing energy performance of buildings, improving quality of the process of education and studies and conditions of the use and maintenance of premises. Tasks: reconstruction of building structures and engineering systems; upgrading of energy systems of	2007–2009	17

Seq. No.	Title	Goals and tasks	Duration	Planned annual energy savings for 2016, GWh
		buildings; guaranteeing conformity of premises to the requirements of construction technical regulations and hygiene norms; reduction of building operation and maintenance costs; and guaranteeing sound use of state funds; renovation and modernisation of buildings, improvement of their energy performance.		
10.	Programme of modernization of museums for 2007–2015	One of the tasks – modernisation of museum facilities	2007–2015	14
11.	Special programme "Implementation of energy saving projects"	Goal – ensuring the financing of preparation and implementation of projects of improvement of energy efficiency and of saving of energy resources and energy which contribute to saving of energy resources and energy.	2004–2008	6
12.	Energy-saving investment programme for buildings of public bodies (*early actions*)	Goal – improvement of energy efficiency in public buildings; reduction of energy costs and promotion of investments into energy saving measures.	2003–2005	4
13.	2003, 2004, 2005, 2006, 2007 and 2008 programmes of construction, reconstruction, repairs and material provision of municipal buildings used for educational, cultural, health care, social and other purposes	Goals: reduction of the number of objects under repairs, reconstruction and construction; reduction of object maintenance costs. Tasks: ensuring the completion of required repair, reconstruction and other construction works in objects; improvement of operating conditions of municipal institutions and bodies and reduction of their maintenance costs; management of heat, energy and water systems as well as upgrading and reducing street lighting costs.	2003–2008	5
14.	Lithuanian Environmental Investment Fund	Goal – reduction of negative environmental effects of economic activity.	2001–2004	n/a
15.	Requirement to purchase energy-efficient goods	Goal – ensuring procurement of energy-efficient goods by institutions of the public sector.	from 2008	n/a

Seq. No.	Title	Goals and tasks	Duration	Planned annual energy savings for 2016, GWh
16.	National green procurement implementation programme	Goal – promoting green procurement and achieving that goods, services or works acquired during public procurement are as environment-friendly as possible. Tasks: building green procurement capacities of contracting authorities; ensuring that green procurement is carried out in observance of environmental criteria and goods procured in such a way are environment-friendly; collecting and accumulating information about environment-friendly goods, informing contracting authorities about them and about environmental protection criteria to be followed when carrying out green procurement; carrying out the monitoring of green procurement.	2008–2011	n/a
			Total	**229**

Amount of energy to be saved until 2016 in trade and service sector is 229 GWh of final energy or 5% of the established energy saving target. This figure covers only those measures the amount of energy savings of which was measurable. Measures 14–16 provided for in Table 12 will additionally contribute to the savings target.

2. DESCRIPTION OF INDIVIDUAL ENERGY EFFICIENCY IMPROVEMENT MEASURES

This Section provides the description of individual energy efficiency improvement measures which were, are and will be implemented in trade and service sector.

Table 13. 2007–2013 EU Structural Funds (Operational Programme "Promotion of Cohesion")

Measure	**1. *2007–2013 EU STRUCTURAL FUNDS (OPERATIONAL PROGRAMME "PROMOTION OF COHESION")***
Category	Financial instrument
Regional application	National level
Target group	Public buildings (legal persons established by state or municipality or their bodies or founders of these legal persons). In 2007, trade and service sector consumed 13% or 7.4 TWh of final energy. In 2007, commercial and public services sector consumed 2.5 TWh of thermal energy, 3.0 TWh of electric power, 0.8 TWh of natural gas, 0.6 TWh of coal and 0.3 TWh of fuel wood and wood waste.
Energy end-use	Repair and (or) reconstruction of external envelopes of public

efficiency improvement actions	buildings, modernisation and (or) reconstruction of energy systems of buildings – improvement of their energy characteristics.
Efficiency	Financing (up to 100%) will be provided for the implementation of energy saving projects in public buildings. It is planned to implement 200 projects.
If available: annual energy savings target for 2010 and 2016	Savings target for 2010 – 30 GWh, and for 2016 – 100 GWh.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2007. End of implementation – 2015.

Table 14. Description of EU Structural Funds according to 2004–2006 Single Programming Document of Lithuania

Measure	**2. *EU STRUCTURAL FUNDS ACCORDING TO 2004–2006 SINGLE PROGRAMMING DOCUMENT OF LITHUANIA***
Category	Financial instrument
Regional application	National level
Target group	Public buildings In 2007, commercial and public services sector consumed 13% or 7.4 TWh of final energy. In 2007, trade and service sector consumed 2.5 TWh of thermal energy, 3.0 TWh of electric power, 0.8 TWh of natural gas, 0.6 TWh of coal and 0.3 TWh of fuel wood and wood waste.
Energy end-use efficiency improvement actions	Thermal insulation and renovation of existing buildings including their external envelopes and related infrastructure and renovation of energy installations.
Efficiency	Financing (up to 100%) was provided for the implementation of energy savings projects in public buildings. 82 projects were implemented.
If available: annual energy savings target for 2010 and 2016	Energy savings target for 2010 – 40 GWh, and for 2016 – 40 GWh.
Implementation stage and exact period	Measure is already implemented. Beginning of implementation – 2005. End of implementation – 2007.

Table 15. Description of the programme of renovation of university student hostels

Measure	**3. *PROGRAMME OF RENOVATION OF UNIVERSITY STUDENT HOSTELS***
Category	Financial instrument
Regional application	National level
Target group	Hostels for students of higher educational establishments
Energy end-use efficiency improvement actions	Implementation measures: replacement of heating units; reconstruction of outdoor heat supply networks; repairs and warming up of roofs; replacement of windows; replacement of exterior doors; repairs and warming up of exterior walls; repairs of existing heating systems; installation of new heating systems;

	repairs of hot and cold water and circulation water-supply and wastewater systems; repairs of electrical installations and lighting systems.
Efficiency	According to this programme minimum 20 hostel renovation investment projects will be implemented upgrading energy systems in renovated hostels, improving energy performance of buildings, reducing energy consumption, ensuring conformity of technical condition and premises of buildings to the requirements of construction technical regulations and respective hygiene norms, improving living conditions of students and reducing dwelling costs. It is estimated that after the reconstruction and repair of hostels higher schools will be able to save on average about 30% of energy (20 buildings are planned to be renovated).
If available: annual energy savings target for 2010 and 2016	Energy savings target for 2010 – 6 GWh, and for 2016 – 6 GWh.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2006. End of implementation – 2009.

Table 16. Description of the Programme of renovation and provision with teaching aids of general education schools and vocational education and training establishments for 2006–2008

Measure	**4. *PROGRAMME OF RENOVATION AND PROVISION WITH TEACHING AIDS OF GENERAL EDUCATION SCHOOLS AND VOCATIONAL EDUCATION AND TRAINING ESTABLISHMENTS FOR 2006–2008***
Category	Financial instrument
Regional application	National level
Target group	Schools of general education and establishments of vocational education and training
Energy end-use efficiency improvement actions	Energy savings measures of the programme implementation: replacement of windows and exterior doors, reconstruction of heating units (boiler-rooms); reconstruction of heating, water-supply, hot-water supply, wastewater systems; warming up of roofs and walls; upgrading and installation of water-supply, electricity and ventilation systems.
Efficiency	It is planned to reconstruct 100 schools buildings (of which 20 public school buildings and 80 municipal school buildings). Upon implementation of this programme, schools will be able to save about LTL 2 million every year. In 2006–2007 from state and municipal budgets financing was provided to 52 schools and in 2008 48 schools were funded from 2007–2013 EU SF.
If available: annual energy savings target for 2010 and 2016	Energy savings target for 2010 – 7 GWh, for 2016 – 7 GWh.
Implementation stage	Measure is under implementation.

and exact period	Beginning of implementation – 2006. End of implementation – 2008.

Table 17. Description of the Programme of renovation and upgrading of libraries for 2003–2013

Measure	**5. *PROGRAMME OF RENOVATION AND UPGRADING OF LIBRARIES FOR 2003–2013***
Category	Financial instrument
Regional application	National level
Target group	Library buildings
Energy end-use efficiency improvement actions	Reconstruction of library buildings improving their energy efficiency
Efficiency	It is planned to reconstruct 15 public library buildings and 21 district public library buildings.
If available: annual energy savings target for 2010 and 2016	Energy savings targets for 2010 – 3 GWh, for 2016 – 5 GWh.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2003. End of implementation – 2013.

Table 18. Description of the Programme of renovation of imprisonment institutions and humanisation of imprisonment conditions for 2004–2009

Measure	**6. *PROGRAMME OF RENOVATION OF IMPRISONMENT INSTITUTIONS AND HUMANISATION OF IMPRISONMENT CONDITIONS FOR 2004–2009***
Category	Financial instrument
Regional application	National level
Target group	Institutions of imprisonment
Energy end-use efficiency improvement actions	Reconstruction of objects and buildings recognised as being in emergency status according to the established procedure. Reconstruction of heating, water supply and wastewater systems of imprisonment institutions reducing the costs of heating system, improving living environment and health care services for the inmates of such institutions.
Efficiency	It is planned to reconstruct 13 objects in total. At present reconstruction is completed in 3 objects and 4 objects are still under reconstruction.
If available: annual energy savings target for 2010 and 2016	Energy savings target for 2010 – 5 GWh, and for 2016 – 5 GWh.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2004. End of implementation – 2009.

Table 19. Description of the Programme of modernisation of cultural centres for 2007–2020

Measure	**7. *PROGRAMME OF MODERNISATION OF CULTURAL CENTRES FOR 2007–2020***
Category	Financial instrument
Regional application	National level
Target group	Municipal cultural centres
Energy end-use efficiency improvement actions	Reconstruction and repairs of buildings improving their energy efficiency.
Efficiency	It is planned to repair 63 buildings of cultural centres of municipalities using up to 95% of state financing.
If available: annual energy savings target for 2010 and 2016	Energy savings target for 2010 – 2 GWh, and for 2016 – 8 GWh.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2007. End of implementation – 2020.

Table 20. Description of the Programme for improvement of schools

Measure	**8. *PROGRAMME FOR IMPROVEMENT OF SCHOOLS***
Category	Financial instrument
Regional application	National level
Target group	Basic schools
Energy end-use efficiency improvement actions	Improvement of status, warming up and hygiene conditions of buildings of educational establishments.
Efficiency	Expected results of the Project "Reduction of energy consumption and improvement of learning conditions" implemented under the Programme: improvement of learning conditions for pupils of 62 basic schools of Lithuania, more efficient use of energy resources, investment of saved funds for improving the quality of education; thermal and electric energy savings; better learning conditions for pupils. The temperature of renovated premises will be around 18°C; and thermal energy savings will amount to about 30–40%. Actual energy savings were about 31%.
If available: annual energy savings target for 2010 and 2016	Energy savings targets for 2010 – 12 GWh, and for 2016 m. – 12 GWh.
Implementation stage and exact period	The Programme was implemented. Beginning of implementation – 2002. End of implementation – 2005.

Table 21. Description of the Programme of renovation and reconstruction of science and studies institutions for 2007–2009

Measure	**9. *PROGRAMME OF RENOVATION AND RECONSTRUCTION OF SCIENCE AND STUDIES INSTITUTIONS FOR 2007–2009***
Category	Financial instrument
Regional application	National level
Target group	State universities, colleges and research bodies
Energy end-use efficiency improvement actions	Implementation measures: replacement of windows; repairs of roof without warming up; repairs of roofs with warming up; repairs of exterior walls; replacement of heating units; reconstruction of exterior heat supply networks; partial renovation of heating systems; installation of new heating systems; repairs of hot, cold water and circulation water supply systems; installation of air supply and removal systems; replacement of exterior doors; repairs of electrical installations and lighting systems.
Efficiency	Main expected results of implementation of the Programme: creation of favourable and safe conditions for the process of studies and scientific research; improvement of general technical condition of buildings of science and studies institutions, architectural expression of facades; reduction of fuel and energy consumption in renovated and reconstructed buildings; positive influence on the comfort of buildings and health of people of improved indoor microclimate; provision of possibilities for efficient use of energy resources; reduced energy needs will contribute to positive environmental impact; reduction of budget expenditures of science and studies institutions for operation of buildings; possibility to use saved funds for the improvement of direct functions of science and studies institutions; extension of useful life of renovated buildings. It is estimated, that after implementation of this Programme it will be possible to save up to 17% (calculated at prices of 2006) of energy consumption in buildings of science and studies institutions. Average investments into energy saving measures will account for 81% of the total amount allocated for the Programme.
If available: annual energy savings target for 2010 and 2016	Energy savings target for 2010 – 17 GWh, and for 2016 – 17 GWh.
Implementation stage and exact period	The programme is under implementation. Beginning of implementation – 2007. End of implementation – 2009.

Table 22. Description of the Programme of modernization of museums for 2007–2015

Measure	**10. *PROGRAMME OF MODERNIZATION OF MUSEUMS FOR 2007–2015***
Category	Financial instrument
Regional application	National level
Target group	State, national and municipal museums
Energy end-use efficiency	Reconstruction and major repairs of museum buildings

improvement actions	
Efficiency	Project implementation is financed from state and municipal budgets
If available: annual energy savings target for 2010 and 2016	Energy savings targets for 2010 – 4 GWh, and for 2016 – 14 GWh
Implementation stage and exact period	The programme is under implementation. Beginning of implementation – 2007. End of implementation – 2015.

Table 23. Description of the special Programme "Implementation of energy saving projects"

Measure	**11. *SPECIAL PROGRAMME "IMPLEMENTATION OF ENERGY SAVING PROJECTS"***
Category	Financial instrument
Regional application	National level
Target group	Public buildings. In 2007, commercial and public services sector consumed 13% or 7.4 TWh of final energy. In 2007, commercial and public services sector consumed 2.5 TWh of thermal energy, 3.0 TWh of electric power, 0.8 TWh of natural gas, 0.6 TWh of coal and 0.3 TWh of fuel wood and wood waste.
Energy end-use efficiency improvement actions	Repair and (or) reconstruction of exterior building envelopes of public buildings, modernisation and (or) reconstruction of energy systems of buildings – improvement of their energy characteristics.
Efficiency	Financing (up to 100%) is provided for the implementation of energy saving projects in public buildings. 22 projects are planned to be implemented according to this Programme.
If available: annual energy savings target for 2010 and 2016	Energy savings targets for 2010 – 6 GWh, and for 2016 – 6 GWh
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2004. End of implementation – 2008.

Table 24. Description of Energy-saving programme for buildings of public bodies

Measure	**12. *ENERGY-SAVING PROGRAMME FOR BUILDINGS OF PUBLIC BODIES***
Category	Financial instrument
Regional application	National level
Target group	Buildings of health care institutions, public bodies and higher educational establishments (hostels)
Energy end-use efficiency improvement actions	Objectives of renovation of buildings of higher educational establishments: modernisation of energy system of student hostels and improvement of living, hygiene conditions, conditions of maintenance of premises and improvement of energy efficiency. Renovation of buildings of health care institutions: more than half of the Programme funds were allocated for replacement of windows

	and exterior doors as well as other building envelopes. Part of planned investments was used to upgrade the heating system (to renovate heating units and systems, reconstruct local boiler-rooms). Implementation of the projects facilitated in reducing heat consumption in buildings of health care institutions. Conditions of treatment of patients and working conditions of employees were improved. Hospitals will be able to use the funds saved for the procurement of additional equipment, medicines and for increasing staff salaries. Renovation of administrative buildings of public authorities: replacement of windows and exterior doors, complex reconstruction of heating system.
Efficiency	Renovation of buildings of higher educational establishments: Renovation was completed in 24 hostels of university students. Technical energy audit, investment project and technical designs were prepared for each renovated hostel. Renovation of buildings of health care institutions. Planned financial assistance was distributed among 25 health care institutions in consideration of performed energy audits of buildings of these institutions and prepared investment projects. More than half of funds provided for in this programme was used for replacement of windows and exterior doors and for renovation of other building envelopes. In 11 health care institutions part of planned investments were used for the renovation of heating system (renovation of heating units and systems, reconstruction of local boiler-rooms). Renovation of administrative buildings of public authorities. Part of the programme covered renovation of buildings of public and municipal bodies. Renovation of one building included replacement of windows and exterior doors. Complex reconstruction of the heating system was completed in 1 object – local boiler-room and more than 2 km of heating pipelines were reconstructed, 17 heating units were renovated and about 500 m^2 of windows were replaced.
If available: annual energy savings target for 2010 and 2016	Energy savings targets for 2010 – 4 GWh, and for 2016 m. – 4 GWh
Implementation stage and exact period	The programme is implemented. Beginning of implementation – 2003. End of implementation – 2005.

Table 25. Description of the Programmes of 2003, 2004, 2005, 2006, 2007 and 2008 of construction, reconstruction, repairs and material provision of municipal buildings used for educational, cultural, health care, social purposes

Measure	**13. *PROGRAMMES OF 2003, 2004, 2005, 2006, 2007 AND 2008 OF CONSTRUCTION, RECONSTRUCTION, REPAIRS AND MATERIAL PROVISION OF MUNICIPAL BUILDINGS USED FOR EDUCATIONAL, CULTURAL, HEALTHCARE, AND SOCIAL PURPOSES***
Category	Financial instrument

Regional application	Municipal level
Target group	Administrative and other municipal buildings used for educational, cultural, health care, social and other purposes, street lighting networks, heating systems and other objects.
Energy end-use efficiency improvement actions	Funds allocated for these programmes are used for repairs and reconstructions of nurseries-kindergartens, kindergartens, kindergartens-schools, school-kindergarten, school-nursery, schools, health care establishments, institutions providing social services and institutions of culture and sports, repairs and reconstruction of administrative buildings of municipalities and neighbourhoods, reconstruction of street lighting networks, maintenance of heating system, gas pipeline and water management systems, construction, repair or reconstruction of other buildings.
Efficiency	105 objects were included in the programme of 2008. 94 objects were included in the programme of 2007. 87 objects were included in the programme of 2006. 82 objects were included in the programme of 2005. 85 objects were included in the programme of 2004. 82 objects were included in the programme of 2003.
If available: annual energy savings target for 2010 and 2016	Energy savings targets for 2010 – 5 GWh, and for 2016 – 5 GWh
Implementation stage and exact period	Programmes of 2003–2007 had been implemented; programme of 2008 is under implementation. Beginning of implementation – 2003. End of implementation – not specified.

Table 26. Description of the Lithuanian Environmental Investment Fund

Measure	**14. *LITHUANIAN ENVIRONMENTAL INVESTMENT FUND***
Category	Financial instrument (subsidies, soft loans)
Regional application	National level
Target group	Legal persons
Energy end-use efficiency improvement actions	Support is provided to projects related with reduction of pollutants released into the atmosphere and emissions of greenhouse gases (use of cleaner fuel, installation of cleaner technologies and pollution treatment facilities, improvement of energy efficiency, etc.).
Efficiency	Financial support is provided in the form of subsidies and soft loans. Main financing source of the Fund – 20% of pollution taxes transferred since 2000 (from 1 January 2003 – 30%) to the special Lithuanian Environmental Investment Fund Programme according to the Law on Pollution Tax.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 1999. End of implementation – not specified.

Table 27. Description of the requirement to purchase energy-efficient goods

Measure	**15.** ***REQUIREMENT TO PURCHASE ENERGY-EFFICIENT GOODS***
Category	Voluntary agreements and joint instruments (energy efficient public procurement)
Regional application	National level
Target group	Government institutions and other public bodies and institutions subordinate to the Government of the Republic of Lithuania, Office of the Government of the Republic of Lithuania, ministries, institutions under the ministries and public bodies and institutions subordinate to the ministries. Other contracting authorities are also recommended to follow these requirements.
Energy end-use efficiency improvement actions	Requirement to procure goods which conform to the established energy efficiency standards: circular pumps, lamps, office equipment, domestic appliances and motor cars.
Efficiency	Government institutions and other public bodies and institutions subordinate to the Government of the Republic of Lithuania, Office of the Government of the Republic of Lithuania, ministries, institutions under the ministries and public bodies and institutions subordinate to the ministries conducting public procurement of goods specified in the list approved by the Government of the Republic of Lithuania must establish energy efficiency standards in the technical specifications of such goods, except those cases when there are no goods on the market the energy efficiency of which conforms to the aforementioned list. Other contracting authorities are recommended to follow the established requirements; however, it is planned to establish mandatory requirements for municipalities and their bodies.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2008. End of implementation – open-ended.

Table 28. Description of green procurements

Measure	**16.** ***NATIONAL GREEN PROCUREMENT IMPLEMENTATION PROGRAMME***
Category	Voluntary agreements and joint instruments (energy efficiency public procurement)
Regional application	National level
Target group	Government institutions and other public bodies and institutions subordinate to the Government of the Republic of Lithuania, Office of the Government of the Republic of Lithuania, ministries, institutions under the ministries and public bodies and institutions subordinate to the ministries. Other contracting authorities are also recommended to participate in

	this Programme.
Energy end-use efficiency improvement actions	More energy-efficient goods will be procured. Energy efficiency is one of the environmental criteria. This criterion applies to passenger vehicles (cars, coaches), passenger transportation services, office equipment (printers, facsimile apparatuses and photocopiers), information technology facilities (computers, monitors) and electric bulbs.
Efficiency	Government institutions and other public bodies and institutions subordinate to the Government of the Republic of Lithuania, Office of the Government of the Republic of Lithuania, ministries, institutions under the ministries and public bodies and institutions subordinate to the ministries carrying out public procurement of goods, services and works shall apply environmental criteria to no less than 10% of all procurement in 2008, no less than 15% – in 2009, no less than 20% – in 2010, and no less than 25% – in 2011.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2008. End of implementation – 2011.

III. ENERGY EFFICIENCY IMPROVEMENT IN INDUSTRIAL ENTERPRISES NOT PARTICIPATING IN THE EMISSION TRADING SYSTEM (ETS)

Industry (except energy sector) consists of extraction (mining and quarrying) and manufacturing industry. In 2005, mining and quarrying industry used 4% of the final energy, and manufacturing industry – 96%. Extraction industry includes petroleum and peat production and enterprises operating gravel, clay, dolomite and other quarries. Manufacturing industry creates considerably larger share of GDP and consists of the following branches: manufacture of foodstuffs, beverages and tobacco, manufacture of textiles and textile articles, manufacture of leather and leather goods, wood and wood products, manufacture of pulp, paper and paper products, publishing and printing, manufacture of coke, chemicals, chemical products and artificial fibres, manufacture of rubber and plastic articles, manufacture of other non-metal mineral products, manufacture of base metals and metal products, manufacture of other machinery and equipment n.e.c., manufacture of electrical and optical equipment, manufacture of transport equipment, other manufacture.

In 1996–2005, energy consumption intensity in the manufacturing industry decreased by 1.9 times and in mining and quarrying industry – by 2.8 times.

Some branches of industry of Lithuania have great possibilities to improve their energy efficiency. Investments into energy efficiency improvement technologies, introducing energy saving measures in common production processes (upgrading of lighting, ventilation, pressed air and hot water supply systems), optimisation of production process reduce consumption of energy and of energy resources while concurrently minimising the share of energy costs in the unit cost of production or supply of services. This facilitates more competitive sales of goods or provision of services at the level of both local and external markets. Further enhancement of energy consumption efficiency is related with technological development and innovations.

Energy efficiency improvement measures cover the period of 2007–2016.

1. SUMMARY OF ENERGY EFFICIENCY IMPROVEMENT MEASURES

This Section covers energy efficiency improvement measures in the sectors of industry which do not participate in emission allowance (EA) trading scheme. Improvement of energy efficiency in the sector of industry is envisaged through voluntary agreements concluded with enterprises promoting co-generation of heat and electricity and supporting the procurement of services of energy audits of production processes.

Table 29. Energy efficiency improvement measures in the sectors of industry not participating in the ETS

Seq. No.	**Title**	**Goals and tasks**	**Duration**	**Planned annual energy savings for 2016, GWh**
1.	Voluntary agreements with industrial enterprises *(a draft will be prepared)*	Goal – promotion of improvement of energy efficiency in industrial enterprises through voluntary agreements concluded with them.	from 2010	370
2.	Promotion of small-scale cogeneration	Goal – encouraging industrial enterprises to generate electricity under heat and power generation mode in CHPP.	from 2009	n/a
3.	2007–2013 EU SF (cogeneration)	Goal – support for renovation of boiler-rooms adapting them for combined generation of heat and power.	2007–2013	25
4.	2007–2013 EU SF (audits)	Goal – support for procurement of services of energy audits in production processes.	2007–2013	n/a
			Total	**395**

The amount of energy savings planned until 2016 in the industry sector totals 395 GWh of final energy or 8% of the established energy-savings target. This figure covers only those measures the amount of energy savings of which was measurable. Measures 2 and 4 of Table 29 will additionally contribute to expected savings.

Energy efficiency improvement measures in the sector of industrial enterprises which do not participate in emission allowance (EA) trading scheme cover the period of 2007–2016.

2. DESCRIPTION OF INDIVIDUAL ENERGY EFFICIENCY IMPROVEMENT MEASURES

This Section describes energy efficiency improvement measures the implementation of which is planned in the sectors of industry which do not participate in emission allowance (EA) trading scheme.

Table 30. Description of voluntary agreements with industrial enterprises

Measure	**1. *VOLUNTARY AGREEMENTS WITH INDUSTRIAL ENTERPRISES***
Category	Energy efficiency improvement mechanisms and other combinations of measures (voluntary agreements with industrial enterprises).
Regional application	National level
Target group	Industrial enterprises which do not participate in emission allowance (EA) trading scheme. In 2007, industrial sector of the country consumed 20% or 11.7 TWh of energy. Energy consumed in industrial enterprises falling within the scope of the Directive could approximately amount to 4–5 TWh.
Energy end-use efficiency improvement actions	Implementation of energy efficiency improvement measures in enterprises which do not participate in emission allowance (EA) trading scheme.
Efficiency	It is planned that competent public bodies will conclude voluntary agreements with industrial enterprises which do not participate in emission allowance (EA) trading scheme. Voluntary agreements would be based on energy consumption audits financed by the state under commitment of industrial enterprises to introduce economically efficient measures.
If available: annual energy savings target for 2010 and 2016	Energy savings targets for 2010 – 0 GWh, and for 2016 – 370 GWh.
Implementation stage and exact period	Implementation of the measure is pending. Beginning of implementation – 2010. End of implementation – not specified.

Table 31. Description of promotion of small-scale cogeneration

Measure	**2. *PROMOTION OF SMALL-SCALE COGENERATION***
Category	Financial instrument (exemption from tax)
Regional application	National level
Target group	Industrial enterprises which do not participate in emission allowance (EA) trading scheme. In 2007, industrial sector of the country consumed 20% or 11.7 TWh of energy. Energy consumed in industrial enterprises which do not participate in emission allowance (EA) trading scheme, could approximately amount to 4–5 TWh.
Energy end-use efficiency improvement actions	Installation of cogeneration power plants which do not participate in emission allowance (EA) trading scheme (small industrial enterprises).
Efficiency	Enterprises with less than 35 MW total installed capacity of CHP generation of electricity generation facilities of the plant are exempt from payment for services of public interest.
If available: annual energy savings target for 2010 and 2016	n/a

Implementation stage and exact period	The measure is in force and its implementation will commence as of 2009. Beginning of implementation – 2009. End of implementation – not specified.

Table 32. Description of 2007–2013 EU Structural Funds (cogeneration)

Measure	**3.** ***2007–2013 EU STRUCTURAL FUNDS (COGENERATION)***
Category	Financial instrument
Regional application	National level
Target group	Industrial enterprises which do not participate in emission allowance (EA) trading scheme. In 2007, industrial sector of the country consumed 20% or 11.7 TWh of energy. Energy consumed in industrial enterprises which do not participate in emission allowance (EA) trading scheme, could approximately amount to 4–5 TWh.
Energy end-use efficiency improvement actions	Upgrading of heat and power generation plants: improvement of energy generation efficiency and construction of high efficiency CHPP.
Efficiency	Financing (up to 50%) will be provided for the implementation of projects.
If available: annual energy savings target for 2010 and 2016	Energy savings targets for 2010 – 0 GWh, and for 2016 – 25 GWh.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2007. End of implementation – 2013.

Table 33. Description of 2007–2013 EU Structural Funds (audits)

Measures	**4.** ***2007–2013 EU STRUCTURAL FUNDS (AUDITS)***
Category	Financial instrument
Regional application	National level
Target group	Industrial enterprises which do not participate in emission allowance (EA) trading scheme. In 2007, the industrial sector of the country consumed 20% or 11.7 TWh of energy. Energy consumed in industrial enterprises which do not participate in emission allowance (EA) trading scheme, could approximately amount to 4–5 TWh.
Energy end-use efficiency improvement actions	Performance of energy audits of production process in industrial enterprises.
Efficiency	Goal – improvement of efficiency of enterprises through introduction of modern management methods, quality management systems, and more efficient use of energy in production process. Eligible expenditures of enterprises include expenses related with external consulting services procured by them, services of energy audits in production process according to the recognised methodology and procurement of technology audit services. It is planned that operating efficiency of the enterprises during three

	years after the implementation of the project will increase at least by 15%.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2007. End of implementation – 2013.

IV. ENERGY EFFICIENCY IMPROVEMENT IN THE TRANSPORT SECTOR

1. SUMMARY OF ENERGY EFFICIENCY IMPROVEMENT MEASURES

This Section deals with energy efficiency improvement measures in the transport sector. For the purposes of this Section improvement of energy efficiency is envisaged through essential control over the condition of motor vehicles and making public transport more attractive, also, by encouraging residents to travel less frequently by car and reducing traffic jams in cities.

As has already been mentioned before, the main reason for the growth of energy consumption in transport is related with growing numbers of motor vehicles.

Other problems in the transport sector are related with underdeveloped transport infrastructure and growth of Lithuanian cities. Due to inadequacy between the rates of quantitative growth of motor vehicles and development of the infrastructure, traffic jams are continuously increasing and this, in turn, reduces the efficiency of energy consumption and prolongs the time of trips. Decreasing of occupation density, expansion of cities and underdeveloped network of public transport stimulate the need to use private cars.

The best results in addressing problems of the transport sector are achieved through implementation of the full set of measures and combined use of different strategies. In practice, mobility of people and, consequently, consumption of energy depend upon many factors. In the first instance, it has to do with a group of social-economic indicators, such as people's income, age, gender, lifestyle, behaviour, etc. These indicators predetermine (limit) certain demand for transport services. Another group comprises geographical indicators, i.e. structural elements of living environment: size, density of working and living places, type of activity, etc. The third group includes factors of the transport system: throughput of transport infrastructure, accessibility and quality of public transport, vehicle maintenance costs, parking possibilities, etc. These groups of indicators are interrelated, thus, it is very important to apply effective measures in a coordinated manner. According to their nature these measures can be divided into technological, administrative and planning measures.

In Lithuania, likewise in the majority of other countries in the world, introduction of completely new and advanced technologies improving energy efficiency in the transport sector is not possible. It is very expensive, therefore, under current conditions in Lithuania it would be more useful to focus on administrative and sustainable development aspects. This would include investments into new vehicles, road infrastructure and use of renewable resources as had already been envisaged under the Long-term Development Strategy of the Transport System of Lithuania approved by Republic of Lithuania Government Resolution No. 692 of 23 June 2005 ("Valstybės žinios" (Official Gazette), 2005, No. 79-2860).

According to the data provided by the Ministry of Transport and Communications, the amount exceeding EUR 435 million is lost annually in traffic jams in Vilnius (the capital city of Lithuania). (EUR 174 million is made up of fuel price, another EUR 261 million is cost of residents' time spent in traffic jams; this figure does not include expenses for environmental pollution, damage to health, etc.).

It has been calculated, that after the renovation of the trolley-bus fleet in Kaunas (the second largest city of Lithuania) in 2007, compared to 2004, the number of passengers grew by 25%, whereas consumption of electricity per passenger transportation decreased from 0.45 to 0.39 kWh/passenger, which equals 15%. Following the renovation of the bus fleet in Kaunas, passenger flow in 2007, compared with 2003, increased by 88% and consumption of fuel per passenger transportation decreased by 30%. In 2008, the first trolleybus using energy accumulators (super-condensers) was introduced in Kaunas. It has been estimated that if such accumulators were installed in all trolleybuses, it would lead to savings of more than 50% of energy consumed by trolleybuses.

Energy efficiency improvement measures in the transport sector cover the period of 1994–2016.

Table 34. Energy efficiency improvement measures in the transport sector

Seq. No.	**Title**	**Goals and tasks**	**Duration**	**Planned annual energy savings for 2016, GWh**
1.	Energy resources and energy efficiency improvement programme in the transport sector *(being drafted*)	Goal – combine the development of all modes of transport with a view to improving efficiency of energy and energy resources in the transport sector, concurrently giving priority to more environment-friendly transport.	from 2009	335
2.	State technical inspection of vehicles	Goal – regular checks of conformity of vehicles with a view to ensuring that only vehicles that conform to the established technical and environmental requirements are used.	from 1994 (modified in 2003)	50
3.	Renovation and modernization of public transport	Goal – reduction of amount of fuel and energy consumed for transportation of the same passenger flow, improvement of attractiveness of the public transport by promoting larger numbers of people to use public transport instead of personal cars.	unlimited	25
4.	Improvement of road infrastructure and reduction of traffic jams	Goal – development of road transport infrastructure, modernisation of trunk and regional roads, consolidation of road surface in order to reduce road transport fuel consumption and control transport jams.	unlimited	50
5.	Campaign “In the city without a car”	Goal – attracting attention of the public to negative impact of transport on the environment, human health, traffic safety and stimulate town dwellers at least during the campaign not to travel by	from 2000	n/a

Seq. No.	Title	Goals and tasks	Duration	Planned annual energy savings for 2016, GWh
		personal car and choose more environment-friendly public transport or bicycles, or go on foot.		
6.	Support for scientific research projects related with improvement of efficiency of energy resources and energy	Goal – setting out of research-based methodological principles, recommendations and guidelines reflecting national specific features for the purpose of improving the efficiency of energy resources and energy.	from 2007	n/a
			Total	**460**

Amount of energy savings planned until 2016 in the transport sector makes up 460 GWh of the final energy or 10% of the established energy savings target. This figure covers only those measures the amount of energy savings of which was measurable. Measures 5 and 6 of Table 34 will additionally contribute the savings target.

2. DESCRIPTION OF INDIVIDUAL ENERGY EFFICIENCY IMPROVEMENT MEASURES

This Section describes individual energy efficiency improvement measures which were, are being and will be implemented in the transport sector.

Table 35. Description of energy resources and energy efficiency improvement programme in the transport sector

Measure	**1. *ENERGY RESOURCES AND ENERGY EFFICIENCY IMPROVEMENT PROGRAMME IN THE TRANSPORT SECTOR***
Category	Programme document
Regional application	National level
Target group	Transport sector, carriers, operators of vehicle fleets, educational establishments, mass media. In 2007, the transport sector consumed 37% or 21.4 TWh of final energy. Transport sector consumed 12.1 TWh of diesel fuel, 5.3 TWh of motor petrol and 2.7 TWh of liquefied petroleum gas.
Energy end-use efficiency improvement actions	The Programme covers measures aimed at facilitating the coordinated development of all modes of transport with a view to improving efficiency of energy resources and energy consumption in the transport sector as well as giving priority to more environment-friendly transport.
Efficiency	The Programme will include organisational, legal, economic measures, technological improvement and implementation measures, applied research, public education and awareness-raising measures aimed at improving efficiency of energy resources and consumption of energy. Planned measures include:

	▪ re-motorization and modernization of railway rolling-stock fleet; ▪ education and awareness-raising campaigns on the subject of fuel saving; ▪ promotion of eco-driving style and development of skills (advertising campaigns, trainings); ▪ use of alternative energy sources in the infrastructure development projects; ▪ other.
If available: annual energy savings target for 2010 and 2016	Energy savings targets for 2010 – 23 GWh, and for 2016 – 335 GWh.
Implementation stage and exact period	New measure (*being drafted*). Implementation pending.

Table 36. Description of state technical inspection of vehicles

Measure	**2. *STATE TECHNICAL INSPECTION OF VEHICLES***
Category	Regulation (rules)
Regional application	National level
Target group	All users of road transport vehicles. Transport sector has consumed 12.1 TWh of diesel fuel, 5.3 TWh of motor petrol and 2.7 TWh of liquefied petroleum gas.
Energy end-use efficiency improvement actions	The purpose of mandatory technical inspection of road vehicles is to assess conformity of the vehicle in use with the established technical requirements, ensure safety of use and reduction of carbon monoxide (CO) and hydrocarbon (C_n H_m) emissions. Fuel consumption directly depends upon optimal settings of the vehicle engine.
Efficiency	Conformity of vehicles with the established technical and environmental requirements is assessed during technical inspection which has been mandatory in Lithuania since 1994. Technical inspection precludes the use of vehicles that do not comply with technical requirements, are old and inefficient, because the use of road vehicles which do not pass the technical inspection at the established time is prohibited. In observance of the Rules of Technical Inspection of Road Vehicles approved by Order No. 3-275 of the Minister of Transport and Communications of the Republic of Lithuania of 18 April 2003 ("Valstybės žinios" (Official Gazette), 2003, No. 43-1992, 2007; No. 121-4970) technical inspection is carried out as follows: 1. for motorcycles (classes L3, L4 and L5) – every 24 months; 2. for motor cars of class M1: 2.1. three years after the date of first registration; 2.2. if duration of use from the first registration date is up to 13 years – every 24 months; 2.3. if duration of use from the first registration date is 13 years and more – every 12 months; 3. for motor cars (class M1) used for training of drivers – every 12 months; 4. for taxi and motor cars used for passenger transportation for

	business purposes (class M1), if their maintenance period is: 4.1. up to 5 years – every 12 months; 4.2. 5 years and more – every 6 months; 5. for residential vehicles (all categories and classes) – every 24 months; 6. for busses (classes M2 and M3) – every 6 months; 7. for trolleybuses – every 6 months; 8. for commercial vehicles (classes N1, N2 and N3) – every 12 months; 9. for EX/II, EX/III, FL, OX or AT type vehicles transporting dangerous goods according to vehicle ADR of vehicles subject to additional requirements (classes N1, N2, N3, O1, O2, O3 and O4) – every 12 months; 10. for special vehicles (classes M1, M2, M3, N1, N2, N3, O2, O3 and O4) which according to their design and equipment are intended for special work functions and/or technological processes – every 12 months; 11. for commercial trailers, semi-trailers (classes O2, O3 and O4) – every 12 months; and 12. for motor car trailers (class O1) – every 24 months.
If available: annual energy savings target for 2010 and 2016	Energy savings target for 2016 – 50 GWh.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – from 1994. End of implementation – not specified.

Table 37. Description of renovation and modernization of public transport

Measure	**3. *RENOVATION AND MODERNIZATION OF PUBLIC TRANSPORT***
Category	Procurement of technology
Regional application	Municipality level
Target group	Public transport users
Energy end-use efficiency improvement actions	Procurement of new public road transport vehicles is based on analysis and forecasts of passenger flow in consideration of vehicle capacity and fuel and energy consumed for transportation of passengers along the specified route. Use of lower capacity vehicles for routes with smaller passenger flow reduces fuel consumption in such routes.
Efficiency	Each municipality carries out the aforementioned measures in observance of laws, strategic plans and respective annual plans
If available: annual energy savings target for 2010 and 2016	Energy savings target for 2016 – 25 GWh.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – continuously. End of implementation – continuously.

Table 38. Description of improvement of road transport infrastructure and reduction of traffic jams

Measure	**4. *IMPROVEMENT OF ROAD TRANSPORT INFRASTRUCTURE AND REDUCTION OF TRAFFIC JAMS***
Category	Legal and economic taxation measures
Regional application	National and municipal level
Target group	Infrastructure managers, users of road transport infrastructure and road vehicles.
Energy end-use efficiency improvement actions	The Law on Roads establishes the requirements for roads, their design, construction and maintenance, technical traffic control measures and related responsibilities of road owners and other institutions ("Valstybės žinios" (Official Gazette), 1995, No. 44-1076; 2002, No. 101-4492). Financing of road maintenance and development is carried out in observance of the Republic of Lithuania Law on the Financing of the Road Maintenance and Development Programme ("Valstybės žinios" (Official Gazette), 2000, No. 92-2873; 2001, No. 112-4089; 2004, No. 171-6302). Operators of commercial transport are subject to taxes for use of certain road transport infrastructure. The tax amount is determined in consideration of conformity of the vehicle to the environmental EURO standards. The Gravel Roads Asphalting Programme which is under implementation ensures the reduction of consumption of road transport fuel up to 10%. Complex optimisation of the use of road transport infrastructure facilitates in reducing traffic jams. Smaller number of vehicle stopping/starting times reduces average fuel consumption per distance covered.
Efficiency	Examples of best practice of energy efficiency improvement (in terms of generated benefits) were predetermined by adequate planning of infrastructure and traffic control.
If available: annual energy savings target for 2010 and 2016	Energy savings targets for 2016 – 50 GWh.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – continuously. End of implementation – continuously.

Table 39. Description of campaign "In the city without a car"

Measure	**5. *CAMPAIGN "IN THE CITY WITHOUT CAR"***
Category	Awareness-raising
Regional application	Municipal level
Target group	Owners and users of individual cars
Energy end-use efficiency improvement actions	Residents are encouraged to leave their cars at home at least for one day and use public transport, bicycle, or go short distances on foot. During the campaign awareness raising of residents about negative environmental impact of transport is intensified concurrently promoting energy efficiency in the transport sector.
Efficiency	During this annual campaign municipalities organize press

	conferences and various public events (competitions, concerts, bike trips, etc.). Exhibitions of vehicles without engines are organised at schools. Schoolchildren are encouraged to put on creative displays.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2000. End of implementation – not specified.

Table 40. Description of support for scientific research projects related with improvement of efficiency of energy resources and consumption of energy

Measure	**6. *SUPPORT FOR SCIENTIFIC RESEARCH PROJECTS RELATED WITH IMPROVEMENT OF EFFICIENCY OF ENERGY RESOURCES AND CONSUMPTION OF ENERGY***
Category	Innovative activities
Regional application	National and municipal level
Target group	Public and municipal authorities, transport infrastructure managers, carriers, transport infrastructure and vehicle operators
Energy end-use efficiency improvement actions	Substantiation of decisions taken by public authorities, assessment of energy efficiency, development of the mechanism of implementation of energy resources and energy consumption efficiency improvement recommendations and guidelines.
Efficiency	Number of scientific research carried out.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – continuously. End of implementation – continuously.

V. HORIZONTAL AND CROSS-SECTORAL ENERGY EFFICIENCY IMPROVEMENT MEASURES

This Section deals with horizontal and cross-sectoral energy efficiency improvement measures. These measures cover both, strategic and programme documents including measures provided for in them and financial instruments, regulations and communication measures.

Horizontal and cross-sectoral energy efficiency improvement measures cover the period of 1999–2025.

1. SUMMARY OF ENERGY EFFICIENCY IMPROVEMENT MEASURES

Table 41. Horizontal and cross-sectoral energy efficiency improvement measures

Seq. No.	Title	Goals and tasks	Duration	Planned annual energy savings for 2016, GWh
1.	National Energy Strategy	One of the goals of this Strategy is to improve energy efficiency and increase energy savings. Tasks provided for in the Strategy: ▪ to increase the share of electricity generated in CHPP during the heating season to 35% of total energy balance in 2025; ▪ beginning from 1 January 2008, to save during nine years 9% of the final energy compared with the final energy consumption level of 2005; ▪ to strengthen energy sector institutions through the development of their specialists' know-how and skills; ▪ to maintain and build capacities of scientific research institutions which provide specialist training and are engaged in the area of energy; ▪ to further improve the efficiency of consumption of all types of energy so that in 2025 relative energy consumption in buildings, different equipment and devices, technological processes and transport systems are close to the indicators of the developed EU Member States.	2007–2025	In 2008–2016 to save 9% of final energy compared with final energy consumption level of 2005
2.	National Energy Efficiency Programme for 2006–2010	Goal – improvement of energy sources and energy consumption efficiency as well as use of renewable energy resources in all fields of national economy. Tasks: ▪ to pursue energy policy coordinated with sustainable development objectives, incorporate energy efficiency in the common policy of the state coordinating cross-sectoral actions, developing and applying appropriate regulation; ▪ to conduct applied scientific research, information and educational activity on the subject of energy efficiency and use of	2006–2010	1. Heat consumption in existing buildings will decrease by 7%; 2. Cogeneration will make up 20% of total energy generation balance; 3.Uuse of waste energy resources will increase by 2 TWh

Seq. No.	Title	Goals and tasks	Duration	Planned annual energy savings for 2016, GWh
		renewable and waste energy sources. Goals and tasks of this Programme are established separately for the sectors of buildings and engineering systems, cogeneration and DH (centralised district heating) supply, energy using facilities of enterprises, institutions and households, transport, local, renewable and waste energy resources. Programme goal in the sector of buildings and engineering system – renovation of existing buildings and upgrading of their energy systems. Tasks: ▪ to ensure cost-efficient use, renovation and modernisation of existing buildings; ▪ to build capacities of building owners, managers and other market players in maintaining, renovating and upgrading buildings and improving their energy performance. Programme goal in the sector of equipment and technological processes: to improve efficiency of generation and use of energy in the sectors of cogeneration and DH supply, technological processes of enterprises, facilities used by enterprises, institutions, households and transport. Tasks: ▪ to create conditions allowing that until 2020 amount of electricity produced by cogeneration regime is not less than 35% of the total amount of generated electricity; to improve efficiency of DH systems; ▪ to improve efficiency of DH systems; ▪ to develop industry sector focusing on innovative and environment-friendly technologies; ▪ to improve energy efficiency of facilities used by enterprises, institutions and households; ▪ to ensure coherent development		

Seq. No.	Title	Goals and tasks	Duration	Planned annual energy savings for 2016, GWh
		of all modes of transport giving priority to more environment-friendly transport.		
3.	Construction Technical Regulation STR 2.05.01:2005 "Thermal technique of building envelopes"	Regulation establishes more stringent thermal-technical requirements (heat transmission coefficients, etc.) for the design of residential and non-residential (public and industrial) building envelopes. It applies to the design of new buildings and buildings under reconstruction.	from 2005	830
4.	Construction Technical Regulation STR 2.05.01:1999 "Thermal technique of building envelopes" (*early actions*)	Regulation established more stringent thermal-technical requirements (heat transmission coefficients, etc.) for the design of residential and non-residential (public and industrial) building envelopes. It applies to the design of new buildings and buildings under reconstruction.	1999–2005	290
5.	Construction Technical Regulation STR 2.09.02:2005 "Heating, ventilation and air conditioning"	Regulation sets forth the principal requirements for the design and installation of heating, ventilation and air conditioning systems. It applies to the design and installation of heating, ventilation and air conditioning systems of buildings and engineering structures, excluding buildings envelopes of low (D<1.5 coefficient of thermal inertia of exterior wall) and particularly high thermal inertia (D>7 coefficient of thermal inertia of exterior wall) and premises of engineering structures as well as buildings and engineering structures related with use and generation of radioactive and explosive materials, technological systems and equipment. In case of reconstruction of a building and engineering structure, the requirements are mandatory only for parts of building or premises of engineering structure under reconstruction.	from 2005	n/a
6.	Construction Technical	Goals of the Regulation: ▪ to establish standard	from 2005	11

Seq. No.	Title	Goals and tasks	Duration	Planned annual energy savings for 2016, GWh
	Regulation STR 2.01.09:2005 "Energy performance of buildings. Certification of energy performance"	requirements for energy efficiency of buildings and draft their certification procedure and methodology; ▪ to use in sound and cost-efficient manner energy resources (petroleum products, natural gas, solid fuel, etc.) which represent the main sources of carbon dioxide emissions; ▪ to facilitate more efficient energy consumption; ▪ to facilitate control of energy needs; ▪ to reduce energy consumption in residential buildings and services sector which accounts for more than 40% of total energy consumption in the EU and keeps steadily growing; ▪ to reduce and limit carbon dioxide emissions; ▪ to ensure that calculation of energy performance of buildings is carried out according to the uniform methodology which is based on the European standards and guarantees equal conditions for EU Member States to apply energy savings measures in the housing sector and enables future owners or users to obtain precise information about energy performance in the real property market of the EC; ▪ efforts are made to ensure the conformity of new buildings to the standard energy efficiency, seeking optimal use of factors improving energy efficiency; ▪ efforts are made to ensure that major renovation of existing large buildings is viewed as an opportunity to implement cost-effective measures improving energy efficiency.		
7.	Voluntary agreements with energy enterprises on improvement of efficiency of final	Goal – to encourage energy enterprises to reduce energy consumption by final customers.	from 2009	740

Seq. No.	Title	Goals and tasks	Duration	Planned annual energy savings for 2016, GWh
	consumption of energy (*draft*)			
8.	Qualification and certification schemes	Goal – to ensure that energy consumption efficiency services are provided by experts who have high-level technical competence, are objective and reliable.	from 2005	n/a
9.	Requirements for final customers to submit individual meters precisely reflecting actual amount of energy consumed by them and precise time of such consumption	Goal – to enable final customers to monitor consumption of energy thus promoting its efficient use.	from 2008	n/a
10.	Requirements for energy accounting and installation of measuring devices for this purpose	Goal – to ensure that energy customers are provided with individual energy accounting and measuring devices.	from 2002	n/a
11.	Preferential VAT rate of 9%	Goal – to create more favourable investment conditions for the construction, renovation and warming-up of residential houses.	from 2002	n/a
12.	Profit tax rebate (*draft*)	Goal – to encourage enterprises to invest into advanced technologies and by doing this, to increase to a maximum their competitiveness and improve their energy efficiency.	n/a	n/a
13.	Environmental pollution tax rebate	Goal – to encourage legal persons to implement environmental pollution prevention (including energy efficiency improvement) measures.	from 2005	n/a
14.	Information, education and training activities	Goal – to inform, educate and train energy customers on energy efficiency improvement matters.	Open-ended	n/a
			Total	**1871**

Energy savings planned until 2016 through the implementation of horizontal and cross-sectoral measures amount to 1871 GWh of final energy or 40% of the established energy savings target. This figure covers only those measures the amount of energy savings of which was measurable. Measures 1, 2, 5 and 8–14 in Table 41 will additionally contribute to the planned amount of energy savings.

2. DESCRIPTION OF INDIVIDUAL ENERGY EFFICIENCY IMPROVEMENT MEASURES

Table 42. Description of the National Energy Strategy

Measure	**1.** ***NATIONAL ENERGY STRATEGY***
Category	Strategic document
Regional application	National level
Target group	All sectors of final energy consumption
Energy end-use efficiency improvement actions	▪ Modernisation and development of energy supply systems. Reconstruction of internal heating and hot water supply systems of buildings, installation of automatic heating units in buildings, removal of heat exchanger systems and replacement of the existing individual heating points by new ones. ▪ Drafting and improvement of legal acts and energy management. It is planned to draft the National Energy Efficiency Improvement Programme 2011–2015 and the plan of its implementation measures and table it to the Government of the Republic of Lithuania; it also provides for capacity-building of energy sector and other institutions; training and development of specialists employed by those institutions. ▪ Scientific research, specialist training and implementation of other objectives of the EU set forth in the National Energy Strategy. This group of measures include funds earmarked for carrying out different energy efficiency related studies. ▪ Development of the use of renewable energy resources and improvement of energy efficiency. This group of measures includes renovation and upgrading of multi-dwelling buildings; implementation of energy-saving measures in other branches of economy facilitating the reduction of comparative end-use of energy by 1.5% within the period of three years starting from 2008.
Efficiency	For the purpose of achieving the objectives of the National Energy Strategy, every four years the National Energy Strategy Implementation Plan is approved, stipulating concrete measures for achieving those objectives.
If available: annual energy savings target for 2010 and 2016	In implementing measures of the National Energy Strategy Implementation Plan, 9% of final energy, compared with final energy consumption level of 2005, will be saved during 9 years, starting from 1 January 2008.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2007. End of implementation – 2025.

Table 43. Description of the National Energy Efficiency Programme for 2006–2010

Measure	**2.** ***NATIONAL ENERGY EFFICIENCY PROGRAMME FOR 2006–2010***
Category	Programme document
Regional application	National level
Target group	All sectors of final energy consumption
Energy end-use efficiency	Implementation of this Programme will result in the achievement of the following quality indicators: improvement of living conditions –

improvement actions	renovation of buildings and their energy systems, their appropriate use and maintenance; monitoring of good management projects of energy efficiency and energy needs and summarising such monitoring; drafting of legal and methodological documents for positive control of energy efficiency and environmental pollution in the sectors of transport and industry; improvement and development of legal and normative documents dealing with Lithuania's commitments at international and EU level related with energy efficiency and use of renewable and waste energy resources; conducting scientific research, informing the public and raising its awareness about energy efficiency and use of waste energy resources. Heat consumption in existing buildings will be decrease by 7%.
Efficiency	The Programme covers organisational, legal and economic measures, technological improvement and implementation measures, measures of applied scientific research, public education and information on the issues of improvement of efficiency of energy resources and energy and monitoring of implementation of these measures in the sectors of buildings and their engineering systems, cogeneration, DH heat supply, installations used by enterprises, institutions, households and transport, local, renewable and waste energy resources.
If available: annual energy savings target for 2010 and 2016	1. Heat consumption in existing buildings will decrease by 7%. 2. Cogeneration will make up 20% of the total energy balance. 3. Use of renewable energy resources – 2 TWh.
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2006. End of implementation – 2010.

Table 44. Description of Construction Technical Regulation STR 2.05.01:2005 "Thermal technique of building envelopes"

Measure	**3. *CONSTRUCTION TECHNICAL REGULATION STR 2.05.01:2005 "THERMAL TECHNIQUE OF BUILDING ENVELOPES"***
Category	Regulation (building standards)
Regional application	National level
Target group	Residential houses Public buildings Industrial buildings
Energy end-use efficiency improvement actions	Building envelopes of newly designed and reconstructed existing buildings must meet standard thermal characteristics (See Table 2.1 of Annex 2).
Efficiency	The Regulation sets forth thermal technical requirements for the design of building envelopes of residential and non-residential buildings. It applies to newly designed and reconstructed existing buildings.
If available: annual energy savings target for 2010 and 2016	Energy savings targets for 2010– 350 GWh, and for 2016 – 830 GWh.

Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2005. End of implementation – open-ended.

Table 45. Description of Construction Technical Regulation STR 2.05.01:1999 "Thermal technique of building envelopes"

Measure	**4. *CONSTRUCTION TECHNICAL REGULATION STR 2.05.01:1999 "THERMAL TECHNIQUE OF BUILDING ENVELOPES"***
Category	Regulation (building standards)
Regional application	National level
Target group	Residential houses Public buildings Industrial buildings
Energy end-use efficiency improvement actions	Building envelopes of newly designed and reconstructed existing buildings must meet standard minimal thermal characteristics (Table 2.2 of Annex 2).
Efficiency	The Regulation sets forth thermal technical requirements for the design of building envelopes of residential and non-residential buildings. It applies to newly designed and reconstructed existing buildings.
If available: annual energy savings target for 2010 and 2016	Energy savings targets for 2010– 290 GWh, and for 2016 – 290 GWh.
Implementation stage and exact period	Measure was already implemented. Beginning of implementation – 1999. End of implementation – 2005.

Table 46. Description of Construction Technical Regulation STR 2.09.02:2005 "Heating, ventilation and air conditioning"

Measure	**5. *CONSTRUCTION TECHNICAL REGULATION STR 2.09.02:2005 "HEATING, VENTILATION AND AIR CONDITIONING"***
Category	Regulation (building norms)
Regional application	National level
Target group	Buildings and their heating, ventilation and air conditioning systems
Energy end-use efficiency improvement actions	Buildings must be provided with designed and mounted heating, ventilation and air conditioning systems maintaining and controlling microclimate and air quality parameters enabling under regular operation of premises in normal outdoor conditions to maintain standard parameters of microclimate and air quality in all zones of operation or certain specific places of the given building.
Efficiency	The Regulation establishes that: ▪ Buildings must be provided with such designed and mounted heating, ventilation and air conditioning systems which can be controlled in order guarantee that comfort temperature fluctuations do not have negative impact on comfort or working productivity of people.

	▪ Buildings used for public, manufacturing and industrial purposes must be provided with such designed and mounted heating, ventilation and air conditioning systems which can be operated at lower than normal capacity after business hours. The heating system operating under lower heating mode must maintain minimum 5°C indoor air temperature (unless technological requirements for maintaining different temperature apply) and raise it again to the projected temperature at the beginning of working hours. Residential buildings must be provided with the possibility to control the flows of both, entire heating system and heat supply devices. Heating units of buildings provided with heat from heat supply networks must have in place heat accounting meters adapted for commercial accounting purposes. ▪ Design of heating systems of multi-dwelling buildings must enable measuring heat consumption in each flat without entering it. ▪ Heat release of each heating device or group of devices must be controlled according to alternating heat releases in heated premises or according to customer needs. ▪ Heat insulation of heating or heat supply pipelines must conform to the established requirements. ▪ Ventilation, air conditioning and heating by using air technique as well as systems design must be selected according to the purpose and specifics of the building in order to guarantee standard microclimate of premises and air cleanness when they are used both under normal and outdoor air conditions. ▪ Ventilation and heating of premises must ensure maintaining standard air quality through efficient use of energy. ▪ Automation of heating, ventilation and air conditioning systems must ensure reliable and energy-efficient operation of the systems.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2005. End of implementation – open-ended.

Table 47. Description of Construction Technical Regulation STR 2.01.09:2005 "Energy performance of buildings. Certification of energy performance"

Measure	**6. *CONSTRUCTION TECHNICAL REGULATION STR 2.01.09:2005 "ENERGY PERFORMANCE OF BUILDINGS. CERTIFICATION OF ENERGY PERFORMANCE"***
Category	Regulation (building norms)
Regional application	National level
Target group	Housing sector
Energy end-use efficiency improvement actions	In case of newly designed buildings and buildings subject to capital renovation of useful area exceeding 1,000 m^2, energy performance of buildings must comply with the following requirements: ▪ Energy performance of new buildings (parts thereof) must be at least of class C. This requirement applies to buildings of new construction the list of design conditions whereof was issued after

	the enforcement of this Regulation. ▪ In case of buildings subject to capital renovation of useful area exceeding 1,000 m^2, energy performance of buildings (parts thereof) must be at least of class D. This requirement applies to buildings under capital renovation the list of design conditions whereof was issued after the enforcement of this Regulation.
Efficiency	Energy performance requirements of buildings are mandatory for: ▪ Buildings of new construction. ▪ Buildings under capital renovation with total useful area exceeding 1,000 m^2. Requirements of this item apply to the extent possible in technical, functional and economic terms. Projected energy performance of newly designed buildings and buildings under capital renovation of over 1,000 m^2 useful area must meet the established energy performance requirements. Building certification is mandatory: ▪ for buildings under construction, offered for sale, or leased; ▪ for buildings of total useful area exceeding 1,000 m^2 used as hotels, administrative, commercial buildings, buildings used for provision of services, catering, transport, culture, education, health care and recreational purposes.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2006. End of implementation – open-ended.

Table 48. Description of voluntary agreements with energy enterprises on improvement of efficiency of final consumption of energy

Measure	**7. *VOLUNTARY AGREEMENTS WITH ENERGY ENTERPRISES ON IMPROVEMENT OF FINAL CONSUMPTION OF ENERGY***
Category	Energy efficiency improvement mechanisms and other combinations of measures (voluntary agreements with energy enterprises)
Regional application	National level
Target group	Households Trade and services sector Industrial enterprises
Energy end-use efficiency improvement actions	Implementation of energy efficiency improvement in buildings of the sectors of households, trade and services and industry, technological processes and facilities.
Efficiency	Agreements will be signed between a competent public body and energy enterprises which will include certain energy efficiency improvement targets, their implementation schedule as well as monitoring and reporting requirements for the implementation of agreement concluded.
If available: annual energy savings target for	Energy savings targets for 2010 – 110 GWh, and for 2016 – 740 GWh.

2010 and 2016	
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2009. End of implementation – 2016.

Table 49. Description of qualification and certification schemes

Measure	**8. *QUALIFICATION AND CERTIFICATION SCHEMES***
Category	Awareness-raising (training and education)
Regional application	National level
Target group	All final customers of energy
Energy end-use efficiency improvement actions	Creating conditions for customers to use services of respective specialists guaranteeing the quality of servicing.
Efficiency	Qualification and certification schemes are regulated by the following legal acts: Procedure of energy audits and certification of auditors (*draft).* Construction Technical Regulation STR 1.02.06:2006 "Practice Statement for Acquiring the Right to Occupy Positions of Managers in the Main Areas of Construction Technical Activities" approved by Order No. D1-321 of 23 June 2005 of the Minister of Environment of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2005, No. 80-2914; 2007, No. 8-339). This Regulation was superseded by the Construction Technical Regulation STR 1.02.06:2007 "Practice Statement for Acquiring the Right to Occupy Positions of Managers in the Main Areas of Construction Technical Activities and for Certification of the Territorial Planning Specialists" approved by Order No. D1-601 of 10 November 2007 of the Minister of Environment of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2007, No. 120-4945). Construction Technical Regulation STR 1.02.09:2005 "Practice Statement for Acquiring the Right to Carry out the Certification of Energy Performance of Buildings" approved by Order No. D1-641 of 28 December 2005 of the Minister of Environment of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2006, No. 2-19); Regulations for Certification of Employees Constructing and Operating Energy Objects and Equipment approved by Order No. 4-122 of 24 March 2005 of the Minister of Economy of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2005, No. 41-1321; 2006, No.112-4288); Regulation on the efficiency testing of heating boilers installed in buildings burning non-renewable solid or liquid fuel of minimum rated capacity of 20 kW and of heating systems with heating boilers not older than 15 years burning non-renewable solid or liquid fuel of minimum rated output of 20 kW, and the Regulation on the efficiency testing of air conditioning systems of rated output exceeding 12kW installed in buildings approved by Order No. 4-73 of 28 February 2006 of the Minister of Economy of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2006, No. 27-902). Training programme for inspectors of heating boilers and heating

	systems and Training Programme for efficiency inspectors of air conditioning systems of rated output exceeding 12kW installed in buildings approved by Order No. V(6)-193 of 4 July 2007 of the Director of Training Service of Labour Exchange of Lithuania under the Ministry of Social Security and Labour of the Republic of Lithuania.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2005. End of implementation – open-ended.

Table 50. Description of requirements for final customers to submit individual meters precisely reflecting their energy actually consumed by them and precise time of such consumption

Measure	**9. *REQUIREMENTS FOR FINAL USERS TO SUBMIT INDIVIDUAL METERS PRECISELY REFLECTING THEIR ENERGY ACTUALLY CONSUMED BY THEM AND PRECISE TIME OF SUCH CONSUMPTION***
Category	Communication, regulation (rules)
Regional application	National level
Target group	Heat, electricity and natural gas customers
Energy end-use efficiency improvement actions	Heat, electricity and natural gas customers are provided with possibility of monitoring and measuring energy amounts consumed during a particular period, and of remote recording of the readings of meters facilitating reduction of energy consumption.
Efficiency	Heat, electricity and natural gas customers are required to install advanced meters which precisely reflect actual amount of energy consumed by the final customer and record the precise time of such consumption. Heat meters must measure and display the following parameters: 1) integrated amount of heat energy; 2) integrated amount of coolant (volume or mass); 3) flow; 4) instantaneous heat power; 5) coolant temperatures and temperature differences; 6) pressure (when heat energy supplied by steam is measured); 7) operating and idle time from the beginning of operation. Heat meters intended for heat sources and users of the first accounting group (the first accounting group includes all heat customers, excluding residential buildings, total effective heating capacity of which exceeds 1 MW, and customers who have underground networks behind the heating unit or an open heat supply system) must measure average temperatures per hour and the amount of supplied and returned coolant per hour for a period of at least one month or must be provided with computer interface for downloading such data. The functionality must be provided for reviewing data accumulated in the heat meter's indicator and reading them with the help of portable data storage device or other

	means. Electricity customers, whose allowed power output exceeds 50 kW, are provided with electricity meters recording average actual capacity of integration period (hour) during at least one month period enabling the customer to review data stored in the indicator of electricity meter and (or) to read them in remote manner or by other means in the following cases: ▪ connecting electric devices of new customers to electricity networks of the operator; ▪ replacing the existing meters by new ones, except in cases when installation of such meters requires to reconstruct internal network or when installation of such meters is not cost-efficient; ▪ reconstructing or carrying out major repairs of the building of total area exceeding 1,000 m^2 which belongs to the customer, when the price of reconstruction or major repairs of exterior building envelopes and engineering systems (heating, ventilation, air conditioning, hot water and lighting) exceeds 25% of residual value of the building, excluding value of the land plot occupied by the building or in cases when more than 25% area of exterior building envelopes is reconstructed by warming them up. This item applies in those cases when the customer provides the operator with documents supporting the aforementioned circumstances. Users of natural gas, who at the place of supply of gas annually consume more than 100,000 m^3 of gas are provided with gas measuring devices of gas accounting systems which record average actual output of integrated period (hour) for at least one-month period and enable the customer to review data accumulated in the metering device's indicator and read them using remote reading devices or other means in the following cases: ▪ when connecting gas systems of new customers; ▪ when replacing the existing installed gas accounting system devices used for measuring gas quantity when they become warn-out, except in cases when installation of such gas measuring systems is possible only after reconstruction of the internal network or when their installation is not cost-efficient; ▪ reconstructing or carrying out major repairs of the building of total area exceeding 1,000 m^2, when the price or reconstruction or major repairs of exterior building envelopes and engineering systems (heating, ventilation, air conditioning, hot water and lighting) exceeds 25% of residual value of the building, excluding value of the land plot occupied by the building or in cases when an area of more than 25% of exterior building envelopes is reconstructed by warming them up. This item applies in those cases when the customer provides the gas company with documents supporting the aforementioned circumstances.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2008. End of implementation – open-ended.

Table 51. Description of requirements for energy accounting and installation of measuring devices for accounting purpose

Measure	**10. *REQUIREMENTS FOR ENERGY ACCOUNTING AND INSTALLATION OF MEASURING DEVICES FOR ACCOUNTING PURPOSE***
Category	Communication
Regional application	National level
Target group	All final customers of energy
Energy end-use efficiency improvement actions	Each customer provided with individual accounting meters is able to monitor own energy consumption and reduce it. A customer who uses such individual accounting devices is interested in energy saving.
Efficiency	The Law of the Republic of Lithuania on Energy ("Valstybės žinios" (Official Gazette), 2002, No. 56-2224) stipulates that energy which is transmitted, distributed and sold must be accounted for by the help of measuring instruments registered with the Register of Measuring Instruments of the Republic of Lithuania. Newly installed energy measuring instruments must conform to the specifications of measuring instruments used in the EU Member States. Energy measuring instruments shall be installed by energy enterprises using their own funds. Regulation on Measuring Instruments approved by Order No. V-31 of the Director of the State Metrology Service under the Ministry of Environment of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2006, No. 40-1451) establishes mandatory essential and special requirements applied to measuring instruments. The general principles of electricity accounting are defined in the Law of the Republic of Lithuania on Electricity ("Valstybės žinios" (Official Gazette), 2000, No. 66-1984; 2004, No. 107-3964), which establishes that operators of distribution networks are responsible for the organisation of measuring and accounting of electricity transmitted via distribution networks owned by them. In observance of the Rules on Supply and use of Electricity approved by Order No. 4-350 of 7 October 2005 of the Minister of Economy of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2005, No. 120-4328), an operator is responsible for the installation and maintenance of accounting meters. Electricity meters in multi-dwelling buildings must be installed for each individual flat. Electricity meters for customers shall be installed in observance of the General Rules for Installation of Electrical Equipment approved by Order No. 4-40 of 31 January 2007 of the Minister of Economy of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2007, No. 24-936) and the Code of Electricity Networks approved by Order No. 398 of 29 December 2001 of the Minister of Economy of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2005, No. 120-4328). District heat and hot water consumption accounting principles are established in the Republic of Lithuania Law on Heat Sector ("Valstybės žinios" (Official Gazette), 2003, No. 51-2254; 2007, No. 130-5259), which stipulates that accounting meters for supplied

	heat shall be installed at the place of purchase–sale of heat. Heat supplier shall install heat meters with its own funds and shall be responsible for their maintenance. In multi-dwelling buildings heat meters shall be installed at the place of heat purchase–sale. If necessary technical conditions allow and at the request of customers, heat suppliers may install in multi-dwelling buildings heat meters at the point of heat supply-consumption boundary in a customer's flat or in other premises. The procedure of installation of thermal energy and coolant quantity accounting meters, requirements applicable to accounting meters installed in the accounting unit and flats of dwellers are established by Thermal Energy and Coolant Quantity Accounting Rules approved by Order No. 424 of 21 December 1999 of the Minister of Economy of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 1999, No. 112-3270). The Construction Technical Regulation STR 2.09.02:2005 "Heating, ventilation and air conditioning" defines requirements for the place installation of accounting devices at customers' dwelling places. The natural gas consumption accounting is regulated by the Rules for Transmission, Distribution, Storage and Supply of Natural Gas approved by Order No. 43 of 5 February 2002 of the Minister of Economy of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2002, No. 15-598; 2008, No. 58-2189). Pursuant to these Rules, gas accounting systems must be installed and operated by the supplier of natural gas using its own funds within the customers' premises or at their boundaries.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 2002. End of implementation – open-ended

Table 52. Description of preferential VAT rate of 9%

Measure	**11. *PREFERENTIAL VAT RATE OF 9%***
Category	Financial instrument (tax rebate)
Regional application	National level
Target group	Housing sector Households consume 27% of final energy (2007).
Energy end-use efficiency improvement actions	Renovation and warming up of residential buildings.
Efficiency	Preferential rate applies to services of construction, renovation and warming up of residential buildings which are paid for from the state and municipal budgets using soft credits provided by the state and special state funds.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage	Measure is under implementation.

and exact period	Beginning of implementation – 2004. End of implementation – open-ended.

Table 53. Description of profit tax rebate

Measure	**12. *PROFIT TAX REBATE***
Category	Financial instrument (taxes)
Regional application	National level
Target group	Enterprises
Energy end-use efficiency improvement actions	Investments into fixed assets used for manufacturing of new, additional products or provision of services, or for building production (or service provision) capacities, or implementation of new production (or service provision) process, or material change of existing process (part thereof) related with the introduction of advanced technologies through improvement of energy efficiency.
Efficiency	For the purpose of stimulating enterprises' investments into innovative technologies through maximum enhancement of their competitiveness and improvement of their energy efficiency, the possibility is provided to reduce taxable profit calculated for the tax period by expenses incurred for investments – up to 35% of taxable amount of profit calculated during the tax period.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	New measure (draft). Beginning of implementation – 2009. End of implementation – 2013.

Table 54. Description of environmental pollution tax rebate

Measure	**13. *ENVIRONMENTAL POLLUTION TAX REBATE***
Category	Financial instrument (tax rebate)
Regional application	National level
Target group	Energy customers
Energy end-use efficiency improvement actions	Implementation of energy efficiency improvement measures at stationary pollution sources
Efficiency	Natural and legal persons who implement environmental measures which allow to reduce emissions of pollutants into the environment from stationary sources of pollution by at least 5% calculating from the established maximum permissible pollution limit, in the established manner are exempt from pollution tax when the amount of pollutants is reduced by 5%, except in cases when the measure is implemented using the funds from the state budget and also in cases when environmental protection measures are aimed at using biofuel.
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage	Measure is under implementation.

and exact period	Beginning of implementation – 2004. End of implementation – open-ended.

Table 55. Description of information, education and training activities

Measure	**14. *DESCRIPTION OF INFORMATION, EDUCATION AND TRAINING ACTIVITIES***
Category	Information
Regional application	National level
Target group	Energy customers
Energy end-use efficiency improvement actions	▪ Energy enterprises must inform energy customers about efficiency of energy and energy resources, safe and efficient operation of energy objects and facilities, energy objects under construction and reconstruction, as well as about energy prices and services provided to customers. ▪ Provision of information, methodological and organizational support to cooperating business entities of Lithuania and EU and to educational establishments and consulting bodies participating in the EU programmes aimed at improving efficiency of energy and energy resources. ▪ Provision of consultations to and awareness-raising of final customers, organisation of their training on energy efficiency improvement issues. ▪ Publicizing of information about programmes in progress, provision of consultations and organisation of training how to use the possibilities offered by the programmes. ▪ Organisation of preparation and publishing of information material about saving of energy and energy resources. ▪ Disseminating energy saving ideas over TV and radio. ▪ Organisation of conferences, workshops, contests, exhibitions, which enhance abilities of national specialists and of the public to use energy and energy resources more efficiently. ▪ Recommendations on the use of energy efficiency improvement criterion in carrying out public procurement (draft). ▪ Sharing examples of good practice of efficient use of energy and energy resources between public sector institutions. ▪ Publicising in mass media of examples of good practice of efficient use of energy and energy resources of the public sector. ▪ Organisation and performance of energy consumption audit in public buildings and implementation of measures recommended in audit report. ▪ Organisation and implementation of energy consumption management in public buildings and industry. ▪ Example of agreements of financial instruments between potential buyers of energy services and improvement of energy efficiency in buildings and of the providers of such services. For more information see Annex 3.
Efficiency	Provision of information is regulated by the following legal acts: ▪ Republic of Lithuania Law on Energy (“Valstybės žinios” (Official Gazette), 2002, No. 56-2224; 2007, No. 55-2124; 2008, No. 135-5228); ▪ Republic of Lithuania Law on Electricity (“Valstybės žinios”

	(Official Gazette), 2000, No. 66-1984; 2004, No. 107-3964); ▪ Republic of Lithuania Law on Natural Gas ("Valstybės žinios" (Official Gazette), 2000, No. 89-2743; 2007, No. 43-1626); ▪ Republic of Lithuania Law on Heat Sector ("Valstybės žinios" (Official Gazette), 2003, No. 51-2254; 2007, No. 130-5259); ▪ Republic of Lithuania Law on Construction ("Valstybės žinios" (Official Gazette), 1996, No. 32-788; 2001, No. 101-3597); ▪ National Energy Strategy approved by Resolution No. X-1046 of 18 January 2007 of the Seimas of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2007, No. 11-430); ▪ National Energy Efficiency Improvement Programme for 2006–2010 approved by Resolution No. 443 of 11 May 2006 of the Government of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2006, No. 54-1956); ▪ Housing Strategy of Lithuania approved by Resolution No. 60 of 21 January 2004 of the Government of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2004, No. 13-387); ▪ Multi-dwelling Buildings Modernisation Programme approved by Resolution No. 1213 of 23 September 2004 of the Government of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2004, No. 143-5232; 2005, No. 78-2839; 2008, No. 36-1282); ▪ Provision of Information on Energy Activities to Public Authorities, Institutions and Third Parties approved by Order No. 4-136 of 28 April 2004 of the Minister of Economy of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2004, No. 75-2598; 2008, No. 72-2777).
If available: annual energy savings target for 2010 and 2016	n/a
Implementation stage and exact period	Measure is under implementation. Beginning of implementation – 1996. End of implementation – open-ended.

VI. MEASURES ON WHICH REPORTS MUST BE SUBMITTED UNDER THE DIRECTIVE

Article 14 of the Directive requires describing in Energy Efficiency Action Plans the energy efficiency improvement measures to be taken in implementing provisions of Articles 5(1) and 7(2) of the Directive with regard to exemplary role of the public sector and provision of information and advice to final customers.

For the purpose of implementation of provisions of the Directive a number of measures aimed at improving energy efficiency in the public sector are envisaged. Description of measures under implementation and of planned measures is provided in Tables 56 to 68. More detailed information about the measures is included in Section 5.2.2 of the Action Plan and in Annex 3.

1. ARTICLE 5 OF THE DIRECTIVE ON THE PUBLIC SECTOR

Pursuant to Article 5 of the Directive Member States are required to ensure that the public sector fulfils an exemplary role in the context of this Directive. To this end, they shall

communicate effectively the exemplary role and actions of the public sector to citizens and (or) companies, as appropriate.

Member States shall ensure that energy efficiency improvement measures are undertaken by the public sector, focussing on cost-effective measures which generate the largest energy savings in the shortest span of time. Such measures shall be taken at the appropriate national, regional and/or local level, and may consist of legislative initiatives and/or voluntary agreements, or other schemes with an equivalent effect. Without prejudice to national and Community public procurement legislation:

— at least two measures shall be used from the list set out in Annex VI of the Directive,

— Member States shall facilitate this process by publishing guidelines on energy efficiency and energy savings as a possible assessment criterion in competitive tendering for public contracts.

Member States shall facilitate and enable the exchange of best practices between public sector bodies, for example, on energy efficient public procurement practices, both at national and international level.

Programmes and funds implemented in Lithuania and related with energy efficiency improvement in buildings of the public sector are listed in Table 56. Implementation of these programmes is planned during the period of 2003–2020 and they are aimed at renovation of buildings of institutions of research and studies, cultural centres, libraries, museums, imprisonment institutions and other public establishments founded by the state or municipalities. Renovation of buildings facilitates in guaranteeing efficient consumption of energy, fulfilment of essential building requirements and reduction of building operation costs.

For the purpose of implementing these programmes and for the purpose of obtaining financial support under the EU Structural Support Strategy during the period of 2007–20013 according to the Measures “Renovation of public buildings at the national level” and “Renovation of public buildings at the national level” of the Operational Programme for Promotion of Cohesion, it is mandatory to carry out energy audit of the building in observance of the Methodology of comprehensive audit on the use of energy, energy resources and cold water in public buildings approved by Order No. 4-184 of 29 April 2008 of the Minister of Economy of the Republic of Lithuania. Energy audit assesses energy losses in buildings, establishes a reasonable plan of energy saving measures to reduce energy losses and provides for investments required for the implementation of such measures.

In addition to the aforementioned financial instruments aimed at energy efficiency improvement in the public sector, measures of the category of voluntary agreements and joint instruments have also been provided for. One of such measures is the National Green Procurement Implementation Programme (Tables 12 and 58 of the Action Plan), which defines the term of green procurement and requires from the contracting authority carrying out public procurement to include one or several environmental criteria into the public procurement conditions to ensure that goods, services and works are selected not only according to their price and quality, but also in consideration of lesser environmental impact in one, several or all phases of the product lifecycle. This measure promotes procurement of more energy-efficient goods. For the purpose of adequate implementation of the National Green Procurement Implementation Programme on 3 March 2008 the Minister of Environment of the Republic of Lithuania issued Order No. D1-122 on approval of the Green Procurement Training Programme aimed at providing knowledge and developing skills of civil servants responsible for public procurement necessary for carrying out green procurement in a prescribed manner. The Green Procurement Training Programme sets forth the training plan and training subjects, introducing green procurement policy, legal matters of organisation of green procurement, product groups and list of environmental protection criteria.

Besides, the public sector is subject to the requirement to procure energy efficient products (Table 57 of the Action Plan). When carrying out public procurement of goods specified in the list approved by the Government of the Republic of Lithuania the energy efficiency requirements must be established in the specifications of such goods. One of the goods included in the list – energy-efficient fluorescent lamps which are expected to replace inefficient incandescent bulbs and reduce energy amount consumed for lighting about 5 times.

As part of implementation of the National Energy Efficiency Programme for 2006–2010, information, education and consulting activities are being carried out, publications are prepared and published on the subjects of efficiency of energy and energy resources as well as wider use of local, renewable and waste energy resources, seminars, conferences and contests are organised, also participating in TV and radio broadcasts.

For the purpose of more successful and quicker implementation of projects concurrently encouraging the launch of new products, the Law Amending and Supplementing Articles 2, 4, 6, 16, 17, 21, 27 and 28 and Annex of the Law on Energy and supplementing the Law with Article 7^1 was passed ("Valstybės žinios" (Official Gazette), 2008, No. 135-5228), which establishes such measures as sharing expertise in the area of efficiency of energy and energy resources between public bodies, institutions, enterprises and organisations at national and international level.

Table 56. Description of programmes and funds related with energy efficiency improvement in buildings of the public sector

Title	**1. *PROGRAMMES AND FUNDS RELATED WITH ENERGY EFFICIENCY IMPROVEMENT IN BUILDINGS OF THE PUBLIC SECTOR***
Appropriate energy efficiency improvement measures	Specified in Tables 13–25 of the Action Plan
Title of legal act	1. Practice statement of project financing conditions of Measure "Renovation of public buildings at the national level", Practice statement of project financing conditions of the Measure "Renovation of public buildings at the regional level", Practice statement of project financing conditions of the "Public buildings renovation projects satisfying the criteria of assessment of use and quality under Measure 1.2. "Ensuring stability and accessibility of energy supply and improvement of energy efficiency" under 2004–2006 SPD of Lithuania approved by Order No. 4-265 of 25 June 2008 of the Minister of Economy of the Republic of Lithuania. 2. 2004–2006 Single Programming Document of Lithuania approved by Resolution No. 935 of 2 August 2004 of the Government of the Republic of Lithuania. 3. Programme of renovation of university student hostels approved by Republic of Lithuania Government Resolution No. 843 of 1 September 2006. 4. Programme of renovation and provision with teaching aids of general education schools and vocational education and training establishments for 2006–2008 approved by Republic of Lithuania Government Resolution No. 1230 of 16 November 2005. 5. Programme of renovation and upgrading of libraries for 2003–2013 approved by Republic of Lithuania

	Government Resolution No. 1454 of 17 September 2002. 6. Programme of renovation of imprisonment institutions and humanisation of imprisonment conditions for 2004–2009 approved by Republic of Lithuania Government Resolution No. 619 of 24 May 2004. 7. Programme of modernisation of cultural centres for 2007–2020 approved by Republic of Lithuania Government Resolution No. 785 of 4 August 2006. 8. Programme for improvement of schools approved by Republic of Lithuania Government Resolution No. 759 of 28 May 2002. 9. Programme of renovation and reconstruction of science and studies institutions for 2007–2009 approved by Order No. ISAK-2456 of 28 December 2006 of the Minister of Education and Science of the Republic of Lithuania. 10. Programme of modernization of museums for 2007–2015 approved by Republic of Lithuania Government Resolution No. 275 of 14 March 2007. 11. Special programme “Implementation of energy savings measures” reorganised from the Energy Savings Fund by Order No.1849 of 26 November 2002 of the Government of the Republic of Lithuania. 12. Energy-savings programme for public authority buildings according to Loan Agreement concluded between the Ministry of Finance of the Republic of Lithuania and North Investment Bank on 28 October 2002. 13. Respective 2003, 2004, 2005, 2006, 2007 and 2008 programmes of construction, reconstruction, repairs and material provision of municipal buildings used for educational, cultural, health care, social and other purposes approved by Republic of Lithuania Government Resolutions No. 425 of 8 April 2003; No. 449 of 19 April 2004; No. 595 of 30 May 2005; No. 481 of 29 May 2006; No. 720 of 11 July 2007; and No. 694 of 9 July 2008.
Reference to the official publication	1. “Valstybės žinios” (Official Gazette), 27 June 2008, No. 73-2839; 2. “Valstybės žinios” (Official Gazette), 6 August 2004, No. 123-4486; 3. “Valstybės žinios” (Official Gazette), 5 September 2006, No. 94-3699; 4. “Valstybės žinios” (Official Gazette), 19 November 2005, No. 137-4919; 5. “Valstybės žinios” (Official Gazette), 18 September 2002, No. 92-3943; 6. “Valstybės žinios” (Official Gazette), 24 May 2004, No. 85-3081; 7. “Valstybės žinios” (Official Gazette), 12 August 2006, No. 88-3470; 8. “Valstybės žinios” (Official Gazette), 31 May 2002, No. 54-2130; 9. “Valstybės žinios” (Official Gazette), 11 January 2007,

	No. 4-174; 10. “Valstybės žinios” (Official Gazette), 24 March 2007, No. 34-1238; 11. “Valstybės žinios” (Official Gazette), 29 November 2002, No. 114-5096; 12. — 13. “Valstybės žinios” (Official Gazette), 11 April 2003, No. 35-1480; 21 April 2004, No. 58-2059; 2 June 2005, No. 69-2474; 31 May 2006, No. 61-2192; 19 July 2007, No. 80-3237; 22 July 2008, No. 83-3298, respectively.
Enforcement date	1. 28 June 2008; 2. 7 August 2004; 3. 6 September 2006; 4. 20 November 2005; 5. 19 September 2002; 6. 27 May 2004; 7. 13 August 2006; 8. 1 June 2002; 9. 12 January 2007; 10. 25 March 2007; 11. 30 November 2002; 12. — 13. 12 April 2003; 22 April 2004; 3 June 2005; 1 June 2006; 20 July 2007; 23 July 2008, respectively.

Table 57. Description of requirement to purchase energy-efficient goods

Title	**2. *REQUIREMENT TO PURCHASE ENERGY-EFFICIENT GOODS***
Appropriate energy efficiency improvement measures	Specified in Table 27 of the Action Plan
Title of legal act	Resolution No. 1023 of the Government of the Republic of Lithuania “On goods public procurement of which is subject to energy efficiency requirements and approval of the list energy efficiency requirements for such goods”.
Reference to the official publication	“Valstybės žinios” (Official Gazette), 21 October 2008, No. 121-4600
Enforcement date	22 October 2008

Table 58. Description of green procurement

Title	**3. *NATIONAL GREEN PROCUREMENT IMPLEMENTATION PROGRAMME***
Appropriate energy efficiency improvement measures	Specified in Table 28 of the Action Plan
Title of legal act	1. National Green Procurement Implementation Programme approved by Republic of Lithuania Government Resolution No. 804 of 8 August 2007. 2. List of products public procurement of which from 2008 is subject to environmental criteria (product group 1) approved by Order No. D1-697 of 22 December 2007 of the Minister of Environment of the Republic of Lithuania. 3. Green Procurement Training Programme

Reference to the official publication	1. “Valstybės žinios” (Official Gazette), 18 August 2007, No. 90-3573; 2. “Valstybės žinios” (Official Gazette), 29 December 2007, No. 138-5692; 3. “Valstybės žinios” (Official Gazette), 6 March 2008, No. 27-995
Enforcement date	1. 19 August 2007; 2. 30 December 2007; 3. 7 March 2008.

Table 59. Description of recommendations for application of energy efficiency improvement criterion in public procurement

Title	**4.** ***RECOMMENDATIONS FOR APPLICATION OF ENERGY EFFICIENCY IMPROVEMENT CRITERION IN PUBLIC PROCUREMENT***
Appropriate energy efficiency improvement measures	Specified in item 5, Annex 3 of the Action Plan
Title of legal act	Amendment to the Public procurement assessment recommendations approved by Order No. 1S-53 of 12 October 2006 of the Director of Public Procurement Service under the Government of the Republic of Lithuania (“Valstybės žinios” (Official Gazette), 2006, No. 113-4329).
Reference to the official publication	Draft
Enforcement date	Q4 2008

Table 60. Description of sharing examples of best practice in the area of efficiency of energy and energy resources between public bodies

Title	**5.** ***SHARING EXAMPLES OF BEST PRACTICE IN THE AREA OF EFFICIENCY OF ENERGY AND ENERGY RESOURCES BETWEEN PUBLIC BODIES***
Appropriate energy efficiency improvement measures	Specified in item 6, Annex 3 of the Action Plan
Title of legal act	Law Amending and Supplementing Articles 2, 4, 6, 16, 17, 21, 27 and 28 and Annex of the Law on Energy and supplementing the Law with Article 7^1
Reference to the official publication	“Valstybės žinios” (Official Gazette), 25 November 2008, No. 135-5228
Enforcement date	1 January 2009

Table 61. Description of publicising in mass media examples of best practice in the area of efficiency of energy and energy resources in the public sector

Title	**6. *PUBLICISING IN MASS MEDIA EXAMPLES OF BEST PRACTICE IN THE AREA OF EFFICIENCY OF ENERGY AND ENERGY RESOURCES IN THE PUBLIC SECTOR***
Appropriate energy efficiency improvement measures	Specified in item 6, Annex 3 of the Action Plan
Title of legal act	Law Amending and Supplementing Articles 2, 4, 6, 16, 17, 21, 27 and 28 and Annex of the Law on Energy and supplementing the Law with Article 7^1
Reference to the official publication	"Valstybės žinios" (Official Gazette), 25 November 2008, No. 135-5228
Enforcement date	1 January 2009

Table 62. Description of organisation and performance of energy audits in public buildings and implementation of measures recommended in audit report

Title	**7. *ORGANISATION AND PERFORMANCE OF ENERGY AUDITS IN PUBLIC BUILDINGS AND IMPLEMENTATION OF MEASURES RECOMMENDED IN AUDIT REPORT***
Appropriate energy efficiency improvement measures	Specified in item 7, Annex 3 of the Action Plan
Title of legal act	National Energy Efficiency Programme for 2006–2010 approved by Resolution No. 443 of 11 May 2006 of the Government of the Republic of Lithuania
Reference to the official publication	"Valstybės žinios" (Official Gazette), 16 May 2006, No. 54-1956
Enforcement date	17 May 2006

Table 63. Description of consulting, informing and training of the public sector employees on energy efficiency improvement matters

Title	**8. *CONSULTING, INFORMING AND TRAINING OF THE PUBLIC SECTOR EMPLOYEES ON ENERGY EFFICIENCY IMPROVEMENT MATTERS***
Appropriate energy efficiency improvement measures	Specified in item 4, Annex 3 of the Action Plan
Title of legal act	1. Republic of Lithuania Law on Energy. 2. National Energy Strategy approved by Resolution No. X-1046 of 18 January 2007 of the Seimas of the Republic of Lithuania; 3. National Energy Efficiency Programme for 2006–2010 approved by Resolution No. 443 of 11 May 2006 of the Government of the Republic of Lithuania
Reference to the official publication	1. "Valstybės žinios" (Official Gazette), 7 June 2002, No. 56-2224; 19 May 2007, No. 55-2124; 25 November 2008, No. 135-5228; 2. "Valstybės žinios" (Official Gazette), 26 January 2007, No. 11-430; 3. "Valstybės žinios" (Official Gazette), 16 May 2006, No.

	54-1956
Enforcement date	1. 1 July 2002, 19 May 2007, 1 January 2009; 2. 27 January 2007; 3. 16 May 2006

II. ARTICLE 7 OF THE DIRECTIVE ON AVAILABILITY OF INFORMATION

Pursuant to Article 7 of the Directive Member States are required to ensure that information on energy efficiency mechanisms and financial and legal frameworks adopted with the aim of reaching the national indicative energy savings target is transparent and widely disseminated to the relevant participants of the market.

Member States are also required to ensure that greater efforts are made to promote energy end-use efficiency. They shall establish appropriate conditions and incentives for market operators to provide more information and advice to final customers on energy end-use efficiency.

In implementing this provision of the Directive requirements have been imposed on energy enterprises to provide information about efficient use of energy resources and energy to energy customers and municipal bodies and provide advise to final customers and organise their training on energy efficiency improvement matters.

With a view to implementing different programmes related with improvement of efficiency of energy resources and consumption of energy in the public sector, provisions of these programmes require publicizing information about the programmes under implementation, providing advice and organising training about implementation of measures, offered by the programmes, rendering information, methodological and organisational assistance to cooperating business entities of Lithuania and EU as well as to academic establishments and advisory bodies, organising preparation and publishing of information material on the subject of saving of energy and energy resources, disseminating energy saving ideas via TV and radio, disseminating information about financing possibilities of energy efficiency improvement projects.

Table 64. Description of the requirement for energy enterprises to provide information about efficiency of energy and energy resources to energy customers and municipal bodies

Title	**1. *REQUIREMENT FOR ENERGY ENTERPRISES TO PROVIDE INFORMATION ABOUT EFFICIENCY OF ENERGY AND ENERGY RESOURCES TO ENERGY CUSTOMERS AND MUNICIPAL BODIES***
Appropriate energy efficiency improvement measures	Specified in item 1, Annex 3 of the Action Plan
Title of legal act	1. Republic of Lithuania Law on Energy. 2. Rules for provision of information related with energy activities to public bodies, institutions and third parties approved by Order No. 4-136 of 28 April 2004 of the Minister of Economy of the Republic of Lithuania.
Reference to the official publication	1. “Valstybės žinios” (Official Gazette), 7 June 2002, No. 56-2224; 19 May 2007, No. 55-2124; 25 November 2008, No. 135-5228; 2. “Valstybės žinios” (Official Gazette), 5 May 2004, No. 75-2598; 26 June 2008, No. 72-2777
Enforcement date	1. 1 July 2002, 19 May 2007, 1 January 2009; 2. 6 May 2004, 27 June 2008.

Table 65. Description of provision of information, methodological and organisational assistance to cooperating business entities of Lithuania and EU and to academic and advisory bodies participating in EU programmes for improvement of efficiency of energy and energy resources

Title	**2. *PROVISION OF INFORMATION, METHODOLOGICAL AND ORGANISATIONAL ASSISTANCE TO COOPERATING BUSINESS ENTITIES OF LITHUANIA AND EU AND TO ACADEMIC AND ADVISORY BODIES PARTICIPATING IN EU PROGRAMMES FOR IMPROVEMENT OF EFFICIENCY OF ENERGY AND ENERGY RESOURCES***
Appropriate energy efficiency improvement measures	Specified in item 2, Annex 3 of the Action Plan
Title of legal act	National Energy Efficiency Programme for 2006–2010 approved by Resolution No. 443 of 11 May 2006 of the Government of the Republic of Lithuania
Reference to the official publication	"Valstybės žinios" (Official Gazette), 16 May 2006, No. 54-1956
Enforcement date	17 May 2006

Table 66. Description of provision of advice and information to final customers and organisation of training for them on energy efficiency improvement matters

Title	**3. *PROVISION OF ADVICE AND INFORMATION TO FINAL CUSTOMERS AND ORGANISATION OF TRAINING FOR THEM ON ENERGY EFFICIENCY IMPROVEMENT MATTERS***
Appropriate energy efficiency improvement measures	Specified in item 4, Annex 3 of the Action Plan
Title of legal act	1. Republic of Lithuania Law on Energy. 2. Republic of Lithuania Law on Electricity. 3. Republic of Lithuania Law on Heat Sector. 4. Republic of Lithuania Law on Natural Gas. 5. National Energy Strategy approved by Resolution No. X-1046 of 18 January 2007 of the Seimas of the Republic of Lithuania. 6. National Energy Efficiency Programme for 2006–2010 approved by Resolution No. 443 of 11 May 2006 of the Government of the Republic of Lithuania. 7. Housing Strategy of Lithuania approved by Resolution No. 60 of 21 January 2004 of the Government of the Republic of Lithuania. 8. Provision of Information on Energy Activities to Public Authorities, Institutions and Third Parties approved by Order No. 4-136 of 28 April 2004 of the Minister of Economy of the Republic of Lithuania.
Reference to the official publication	1. "Valstybės žinios" (Official Gazette), 7 June 2002, No. 56-2224; 19 May 2007, No. 55-2124; 25 November 2008, No. 135-5228). 2. "Valstybės žinios" (Official Gazette), 4 August 2000, No. 66-1984; 10 July 2004, No. 107-3964).

	3. “Valstybės žinios” (Official Gazette), 28 May 2003, No. 51-2254; 11 December 2007, No. 130-5259. 4. “Valstybės žinios” (Official Gazette), 25 October 2000, No. 89-2743; 19 April 2007, No. 43-1626. 5. “Valstybės žinios” (Official Gazette), 26 January 2007, No. 11-430. 6. “Valstybės žinios” (Official Gazette), 16 May 2006, No. 54-1956. 7. “Valstybės žinios” (Official Gazette), 24 January 2004, No. 13-387. 8. “Valstybės žinios” (Official Gazette), 5 May 2004, No. 75-2598; 26 June 2008, No. 72-2777.
Enforcement date	1. 1 July 2002, 19 May 2007, 1 January 2009. 2. 1 January 2001, 10 July 2004. 3. 1 July 2003, 1 January 2008. 4. 1 January 2001, 19 April 2007. 5. 27 January 2007. 6. 16 May 2006. 7. 25 January 2004. 8. 6 May 2004, 27 June 2008.

Table 67. Description of publicizing of information about programmes being implemented, provision of advice and information how to use the programme measures

Title	**4. *PUBLICIZING OF INFORMATION ABOUT PROGRAMMES BEING IMPLEMENTED, PROVISION OF ADVICE AND INFORMATION HOW TO USE THE PROGRAMME MEASURES***
Appropriate energy efficiency improvement measures	Specified in item 3, Annex 3 of the Action Plan
Title of legal act	1. National Energy Efficiency Programme for 2006–2010 approved by Resolution No. 443 of 11 May 2006 of the Government of the Republic of Lithuania. 2. Multi-dwelling Buildings Modernisation Programme approved by Resolution No. 1213 of 23 September 2004 of the Government of the Republic of Lithuania. 3. Housing Strategy of Lithuania approved by Resolution No. 60 of 21 January 2004 of the Government of the Republic of Lithuania. 4. 2004–2006 Plan of Measures of Implementation of Housing Strategy of Lithuania approved by Resolution No. 1145 of 8 September 2004 of the Government of the Republic of Lithuania. 5. Programme of renovation and provision with teaching aids of general education schools and vocational education and training establishments for 2006–2008 approved by Resolution No. 1230 of 16 November 2005 of the Government of the Republic of Lithuania. 6. Programme of renovation of university student hostels approved by Resolution No. 843 of 1 September 2006. 7. Programme of renovation of imprisonment institutions and humanisation of imprisonment conditions for 2004–2009 approved by Resolution No. 619 of 24 May 2004 of

	the Government of the Republic of Lithuania. 8. Programme of modernisation of cultural centres for 2007–2020 approved by Resolution No. 785 of 4 August 2006 of the Government of the Republic of Lithuania.
Reference to the official publication	1. “Valstybės žinios” (Official Gazette), 16 May 2006, No. 54-1956. 2. “Valstybės žinios” (Official Gazette), 25 September 2004, No. 143-5232; 23 June 2005, No. 78-2839; 29 March 2008, No. 36-1282. 3. “Valstybės žinios” (Official Gazette), 24 January 2004, No. 13-387. 4. “Valstybės žinios” (Official Gazette), 10 September 2004, No. 137-4996. 5. “Valstybės žinios” (Official Gazette), 19 November 2005, No. 137-4919. 6. “Valstybės žinios” (Official Gazette), 5 September 2006, No. 94-3699; 7. “Valstybės žinios” (Official Gazette), 24 May 2004, No. 85-3081. 8. “Valstybės žinios” (Official Gazette), 4 August 2006, No. 88-3470.
Enforcement date	1. 16 May 2006. 2. 26 September 2004, 24 June 2005, 30 March 2008. 3. 25 January 2004. 4. 11 September 2004. 5. 20 November 2005. 6. 5 September 2006. 7. 27 May 2004. 8. 13 August 2006.

Table 68. Description of organisation of preparation and dissemination of information about savings of energy and energy resources and about the possibilities of financing of energy efficiency improvement projects

Title	**5. *ORGANISATION OF PREPARATION AND PUBLISHING OF INFORMATION MATERIAL ABOUT SAVINGS OF ENERGY AND ENERGY RESOURCES; DISSEMINATION OF ENERGY SAVING IDEAS OVER TV AND RADIO; ORGANISATION OF CONFERENCES, WORKSHOPS, CONTESTS, EXHIBITIONS, WHICH ENHANCE ABILITIES OF NATIONAL SPECIALISTS AND OF THE PUBLIC TO USE ENERGY AND ENERGY RESOURCES MORE EFFICIENTLY; AND PREPARATION AND DISSEMINATION OF INFORMATION ABOUT THE POSSIBILITIES OF FINANCING OF ENERGY EFFICIENCY IMPROVEMENT PROJECTS***
Appropriate energy efficiency improvement measures	Specified in item 4, Annex 3 of the Action Plan
Title of legal act	1. Republic of Lithuania Law on Energy. 2. Republic of Lithuania Law on Electricity. 3. Republic of Lithuania Law on Heat Sector. 4. Republic of Lithuania Law on Natural Gas.

	5. National Energy Strategy approved by Resolution No. X-1046 of 18 January 2007 of the Seimas of the Republic of Lithuania. 6. National Energy Efficiency Programme for 2006–2010 approved by Resolution No. 443 of 11 May 2006 of the Government of the Republic of Lithuania. 7. Housing Strategy of Lithuania approved by Resolution No. 60 of 21 January 2004 of the Government of the Republic of Lithuania. 8. Provision of Information on Energy Activities to Public Authorities, Institutions and Third Parties approved by Order No. 4-136 of 28 April 2004 of the Minister of Economy of the Republic of Lithuania.
Reference to the official publication	1. "Valstybės žinios" (Official Gazette), 7 June 2002, No. 56-2224; 19 May 2007, No. 55-2124; 25 November 2008, No. 135-5228). 2. "Valstybės žinios" (Official Gazette), 4 August 2000, No. 66-1984; 10 July 2004, No. 107-3964). 3. "Valstybės žinios" (Official Gazette), 28 May 2003, No. 51-2254; 11 December 2007, No. 130-5259. 4. "Valstybės žinios" (Official Gazette), 25 October 2000, No. 89-2743; 19 April 2007, No. 43-1626. 5. "Valstybės žinios" (Official Gazette), 26 January 2007, No. 11-430. 6. "Valstybės žinios" (Official Gazette), 16 May 2006, No. 54-1956. 7. "Valstybės žinios" (Official Gazette), 24 January 2004, No. 13-387. 8. "Valstybės žinios" (Official Gazette), 5 May 2004, No. 75-2598; 26 June 2008, No. 72-2777.
Enforcement date	1. 1 July 2002, 19 May 2007, 1 January 2009. 2. 1 January 2001, 10 July 2004. 3. 1 July 2003, 1 January 2008. 4. 1 January 2001, 19 April 2007. 5. 27 January 2007. 6. 16 May 2006. 7. 25 January 2004. 8. 6 May 2004, 27 June 2008.

VII. RESPONSIBLE AUTHORITIES AND MONITORING OF ENERGY EFFICIENCY IMPROVEMENT

I. AUTHORITIES RESPONSIBLE FOR ENERGY EFFICIENCY IMPROVEMENT

In implementing energy efficiency improvement goals at the national level, respective authorities were assigned in Lithuania responsible for the improvement of energy efficiency and the limits of their competence were defined.

The Republic of Lithuania Law on Energy establishes the limits of competence of different authorities in energy efficiency improvement area.

According to its competence, the Ministry of Economy of the Republic of Lithuania drafts and approves legal acts regulating the matters of efficient use of energy objects and equipment. Also, this Ministry is authorised to establish efficiency requirements and

efficiency control procedure for:

- hot-water boilers;
- boilers and other equipment which use energy and have rated thermal output exceeding 0.4 MW;
- domestic appliances using electricity;
- heating boilers installed in buildings of minimum 20 kW rated output and heating systems with such boilers as well as air conditioning systems of rated output exceeding 12 kW.

The Ministry of Economy of the Republic of Lithuania also carries out other functions established by laws or assigned by the Government of the Republic of Lithuania which are related with energy efficiency improvement.

The Republic of Lithuania Law on Amending and Supplementing Articles 2, 4, 6, 16, 17, 21, 27 and 28 of the Law on Energy and Adding Article 7^1 to the Law ("Valstybės žinios" (Official Gazette), 2008, No. 135-5228) establishes that the Ministry of Economy of the Republic of Lithuania drafts the procedure and conditions for the performance of energy consumption audits of buildings, technological processes and equipment, approves methodologies of the performance of such audits and procedure of concluding voluntary agreements and enters into voluntary agreements with energy enterprises. The Ministry of Economy establishes the procedure of training and certification of specialists carrying out energy consumption audits of buildings, technological processes and equipment. Also, the Ministry of Economy is tasked with organising the sharing of experience in the area of efficient use of energy sources and energy between public authorities, institutions, enterprises and organisations at national and international level.

In implementing Article 5 of the Directive, on 8 October 2008 the Government of the Republic of Lithuania adopted Resolution No. 1023 "On goods public procurement of which is subject to energy efficiency requirements and approval of the list energy efficiency requirements for such goods". By virtue of this Resolution the Ministry of Economy of the Republic of Lithuania was instructed to revise once in three years the List of energy efficiency requirements for the goods public procurement of which is subject to energy efficiency requirements and where appropriate furnish the Government of the Republic of Lithuania with the draft of amendments to the List.

The Ministry of Environment of the Republic of Lithuania in concert with the Ministry of Economy of the Republic of Lithuania drafts and provides recommendations on the use of energy resources.

Also, the task of the Ministry of Environment of the Republic of Lithuania is to create favourable conditions for the modernisation of residential buildings reducing energy consumption, regulate thermal characteristics of building envelopes, certification of energy performance of buildings and draft proposals to the Government of the Republic of Lithuania on financial support for modernisation of dwellings reducing consumption of energy.

According to the aforementioned Law on Amending and Supplementing Articles 2, 4, 6, 16, 17, 21, 27 and 28 of the Law on Energy and Adding Article 7^1 to the Law, the Ministry of Transport and Communications of the Republic of Lithuania shall:

- prepare the programmes of improvement of efficiency of energy sources and consumption of energy in transport objects and coordinate implementation of such programmes;
- provide recommendations and implement measures aimed at improving the efficiency of energy use and energy resources in transport objects;
- establish the procedure and conditions for performance of energy audit in transport objects (except buildings), approve methods for performance of such energy audit;
- establish the procedure of training and certification of specialists performing energy audit in transport objects (except buildings);

- carry out information and awareness-raising activities promoting efficient use of energy resources and energy in transport objects.

The State Control Commission for Prices and Energy of Lithuania in establishing the prices regulated by the state must provide for energy efficiency, use of indigenous and renewable energy sources, and fulfilment of public interest obligations.

By virtue of the Resolution of the Government of the Republic of Lithuania "On goods public procurement of which is subject to energy efficiency requirements and approval of the list energy efficiency requirements for such goods" referred to above the Public Procurement Office under the Government of the Republic of Lithuania has been tasked with supplementing applicable Recommendations for assessment of public procurement tenders with energy efficiency as one of the criteria to be used in assessing public procurement tenders; monitoring the implementation of this Resolution accumulating statistics on performed procurement of goods specified in the list approved by the Resolution under consideration in the monitoring information system and furnishing the Ministry of Economy of the Republic of Lithuania with aggregate statistical data.

The State Energy Inspectorate under the Ministry of Economy controls energy efficiency of energy objects and equipment in the established manner.

The State Non Food Products Inspectorate under the Ministry of Economy carries out market supervision to ensure that all legal entities and (or) branches (including foreign branches) and all natural persons (including foreign natural persons) comply with product labelling requirements established by laws of the Republic of Lithuania, resolutions of the Government of the Republic of Lithuania and other legal acts.

The state enterprise Energy Agency, according to its competence, carries out the National Energy Efficiency Programme and the Plan of its implementation measures. This enterprise also carries out promotion and information work in the area of efficiency of energy and energy resources and energy efficiency improvement functions assigned to it by the Ministry of Economy of the Republic of Lithuania.

In observance of the Law on Energy, energy companies of Lithuania participate in preparation and development of the plans for efficient supply, distribution and transmission of energy. They carry out their activities in the manner which guarantees efficient generation, supply, transmission and distribution of energy. Energy companies also inform energy customers and municipal bodies about efficient use of energy resources and energy.

Municipalities of Lithuania are involved in designing educational public-awareness raising measures conducive to efficient use of energy and energy resources. Moreover, municipalities implement energy efficiency improvement programmes.

Educational establishments of the country are responsible for incorporating the issues of efficient use of energy and energy resources into the training programmes of employees engaged in construction and operation of energy objects and equipment.

II. MONITORING THE IMPROVEMENT OF ENERGY EFFICIENCY

Pursuant to the Republic of Lithuania Law on Energy, for the purpose of carrying out the state management of energy system, the Government of the Republic of Lithuania or institutions authorised thereby establish the procedure of monitoring the efficiency of energy resources and energy.

In observance of the Republic of Lithuania Law on Energy and in implementing the National Energy Strategy and provisions of the Directive, on 9 July 2008 the Government of the Republic of Lithuania adopted Resolution No. 692 ("Valstybės žinios" (Official Gazette), 2008, No. 83-3296) on approval of the Rules for efficiency of energy resources and energy (hereinafter the Rules). The Rules establish monitoring requirements for buildings, technological processes, equipment or transport objects in which energy efficiency improvement measures were implemented using the funding from energy efficiency

improvement programmes carried out by public authorities. By virtue of this Resolution the Ministry of Economy of the Republic of Lithuania was commissioned to draft and approve the rules for the calculation of amount of energy saved at the national level and recommended to involve municipal bodies in the monitoring of efficiency of energy resources and energy.

Beneficiaries of financing granted under the programmes take part in the monitoring process: participants register readings and collect data, public bodies or institutions carrying out the administration of programmes implemented by public bodies (programme administrators collect information and include it into the monitoring report at the national level) and the Ministry of Economy of the Republic of Lithuania which assesses the readings, summarises the monitoring at the national level, provides forecasts, organises preparation of the report and prepares an overview of the programmes for the Government of the Republic of Lithuania.

The work carried out throughout 2008 included applied scientific research and the drafting of legal acts (methodologies) aimed at measuring the improvement of energy efficiency at the national level and the amount of energy saved through the implementation of energy efficiency improvement measures in separate branches of economy and separate areas of energy activities (generation, transportation, end-use).

Annex 1
to Energy Efficiency Action Plan

HEATING (CALORIFIC) VALUES OF FUEL

Table. Net heating values of fuel of energy resources

Seq. No.	Energy source	Net heating value of burning fuel, toe/kg
1.	Coal	0.60
2.	Brown coal	0.35
3.	Peat	0.28
4.	Peat briquettes	0.36
5.	Coke and semi-coke	0.70
6.	Wood and wood waste	0.342
7.	Agricultural waste	0.35
8.	Charcoal	0.651
9.	Bioethanol	0.884
10.	Biodiesel	0.884
11.	Biogas	0.48
12.	Natural gas	1.176
13.	Oil shale	0.932
14.	Fuel oil	0.955
15.	Diesel	1.022
16.	Motor petrol	1.05
17.	Liquefied petroleum gas	1.11
18.	Petroleum coke	0.73
19.	Gas oils	1.022

Annex 2
to Energy Efficiency Action Plan

HEAT TRANSITION COEFFICIENT VALUES AND THERMAL ENERGY CONSUMPTION NORMS

Table 2.1. Standard values of heat transition coefficient U_N, W/(m^{2}K) of building envelopes and of heat transition coefficient Y_N, W/(mK) of linear thermal bridges according to the Construction Technical Regulation STR 2.05.01:2005 "Thermal technique of building envelopes" approved by Order No. D1-156 of 18 March 2005 of the Minister of Environment of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2005, No. 100-3733).

Type of envelope	**Residential buildings**	**Non-residential buildings**	
		public	**industrial**
Roofs	U_N=0.16×k*****	U_N=0.20×k	U_N=0.25×k
Partitioning bordering with the exterior			
Partitioning of heated premises bordering with soil	U_N=0.25×k	U_N=0.30×k	U_N=0.40×k
Partitioning above non-heated cellars and basements			
Walls	U_N=0.20×k	U_N=0.25×k	U_N=0.30×k
Windows and other transparent envelopes	U_N=1.60×k	U_N=1.60×k	U_N=1.90×k
Doors, gates	U_N=1.60×k	U_N=1.60×k	U_N=1.90×k
Linear thermal bridges	Y_N=0.18×k	Y_N=0.20×k	Y_N=0.25×k

*****k=20/(q_i-q_e) – temperature correction, q_i – indoor air temperature of premises, ^{o}C; q_e – average outdoor air temperature during heating season or projected indoor temperature of adjacent room, ^{o}C. When the indoor projected air designed temperature of premises q_i=20 ^{o}C and outdoor temperature – q_e=0 ^{o}C, then k=1.

Table 2.2. Standard values of heat transition coefficient U, W/(m^{2}K) of building envelopes and of heat transition coefficient Y, W/(mK) of linear thermal bridges according to the Construction Technical Regulation STR 2.05.01:1999 "Thermal technique of building envelopes" approved by Order No. 117 of 29 April 1999 of the Minister of Environment of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 1999, No. 41-1297).

Envelopes	**Residential buildings**	**Public buildings**	**Industrial buildings**
	U_N standard value, W/(m^{2}K)		
Roofs	0.18×k	0.20×k	0.25×k
Partitioning bordering with the exterior	0.18×k	0.20×k	0.25×k
Partitioning and floors	0.26×k	0.30×k	0.40×k
Walls	0.26×k	0.30×k	0.40×k
Windows and doors	1.90×k	1.90×k	1.90×k
Linear thermal bridges	Y_N≤0.18×k	Y_N≤0.20×k	Y_N≤0.25×k

Table 2.3. Standard values of heat transition coefficient *k*, W/(m^{2}K) of walls of residential, public and industrial buildings according to the National Construction Norms RSN 143-92 "Thermal technique of building envelopes" approved by Order No. 97 of 20 May 1992 of the Ministry of Construction and Urban Planning of the Republic of Lithuania ("Valstybės žinios" (Official Gazette),1994, No. 22-367; 1995, No. 95-2143).

Wall construction type	***k*, W/(m^{2}K)**		
	Indoor temperature, ºC		
	$t_v \geq 18$	**10–17**	**5–9**
One-layer	0.50	0.60	0.70
Lightweight stonework	0.60	0.70	0.80
Multilayer (weight is more than 200 kg/m^2)	0.30	0.42	0.50
Light frame and "sandwich" type (weight up to 200 kg/m^2), etc.	0.28	0.36	0.43

Table 2.4. Standard values of heat transition coefficient *k*, W/(m^{2}K) of roofing of residential and public buildings according to the National Construction Norms RSN 143-92 "Thermal technique of building envelopes" approved by Order No. 97 of 20 May 1992 of the Ministry of Construction and Urban Planning of the Republic of Lithuania ("Valstybės žinios" (Official Gazette),1994, No. 22-367; 1995, No. 95-2143).

Roof construction type	***k*, W/(m^{2}K)**	
	Indoor temperature, ºC	
	$t_v \geq 18$	**10–17**
Flat roof with reinforced concrete panels base	0.25	0.31
Flat roof made of light weight-bearing structures (with reinforcement, metal or any other base)	0.22	0.27
Attic partitioning (attic not heated)	0.21	0.26
Sloping roof (attic heated)	0.24	0.29

Table 2.5. Standard values of heat transition coefficient *k*, W/(m^{2}K) of all type basement and cellar partitioning according to the National Construction Norms RSN 143-92 "Thermal technique of building envelopes" approved by Order No. 97 of 20 May 1992 of the Ministry of Construction and Urban Planning of the Republic of Lithuania ("Valstybės žinios" (Official Gazette),1994, No. 22-367; 1995, No. 95-2143).

Partitioning construction type	***k*, W/(m^{2}K)**	
	Until 31 12 1995	**From 01 01 1996**
Partitioning of not heated cellar and basement, when difference between the temperature of the cellar and first floor is:		
Δt=(5÷13 ºC)	0.75	0.50
$\Delta t \geq$14 ºC	0.65	0.40
Partitioning above passageway	0.26	0.26

Table 2.6. Standard values of heat transition coefficient *k*, W/(m^{2}K) of the roofs of heated industrial buildings according to the National Construction Norms RSN 143-92 "Thermal technique of building envelopes" approved by Order No. 97 of 20 May 1992 of the Ministry of Construction and Urban Planning of the Republic of Lithuania ("Valstybės žinios" (Official Gazette),1994, No. 22-367; 1995, No. 95-2143).

Roof construction type	***k*, W/(m^{2}K)**		
	Indoor temperature, ºC		
	$t_v \geq 18$	**10–17**	**$5 \leq t_v \leq 9$**
Flat roof with reinforced concrete span plate base	0.25	0.31	0.37
Flat roof made of light weight-bearing structures (reinforcement, metal, wood and other base)	0.22	0.27	0.32
Roofs-terraces when additional loads exceed 300 kg/m^2	0.50	0.60	0.65

Table 2.7. Standard values of heat transition coefficient *k*, W/(m^{2}K) of floors according to the National Construction Norms RSN 143-92 "Thermal technique of building envelopes" approved by Order No. 97 of 20 May 1992 of the Ministry of Construction and Urban Planning of the Republic of Lithuania ("Valstybės žinios" (Official Gazette),1994, No. 22-367; 1995, No. 95-2143).

Floor construction type	***k*, W/(m^{2}K)**
Floor on soil	0.30
Floor above soil with air layer without contact with outdoor air	0.28

Table 2.8. Standard values of heat transition coefficient *k*, W/(m^{2}K) of building doors, windows and gates according to the National Construction Norms RSN 143-92 "Thermal technique of building envelopes" approved by Order No. 97 of 20 May 1992 of the Ministry of Construction and Urban Planning of the Republic of Lithuania ("Valstybės žinios" (Official Gazette),1994, No. 22-367; 1995, No. 95-2143).

Partitioning type	***k*, W/(m^{2}K)**	
	Indoor temperature, ºC	
	$t_v \geq 18$	**$t_v < 18$**
Windows		
Residential buildings, hospitals, clinics, health centres and other medical and children's care institutions	1.90	2.80
Other public buildings and amenities of industrial enterprises	1.90	2.95
Windows of industrial buildings	1.90	2.95
Doors		
Exterior doors of buildings	2.00	3.30
Interior doors of buildings when temperature difference of premises is $\Delta t \geq 10$ ºC	2.00	3.30
Gates	2.00	3.30

Table 2.9. Norms (kWh/m^2) of consumption of heat energy per unit of total area of heated premises of residential buildings during the heating season according to the National Construction Norms RSN 143-92 “Thermal technique of building envelopes” approved by Order No. 97 of 20 May 1992 of the Ministry of Construction and Urban Planning of the Republic of Lithuania (“Valstybės žinios” (Official Gazette),1994, No. 22-367; 1995, No. 95-2143).

Group of buildings with similar heating regime	**Total heated area, m^2**	**Heat energy consumption norm per heating season, kWh/m^2**
One-flat, single-storey buildings	60–120	195
One-two storey buildings, including attics	100–250	170
One-flat complex shape and developed capacity volume buildings of one-three stores, including attics	180–400	160
Two-storey blocked buildings	250–550	150
Multi-dwelling 3-4-storey buildings	500–1800	135
Multi-dwelling 5-storey buildings	1,500–4,000	130
Multi-dwelling 9-12-storey tower buildings	2,500–5,000	125

Annex 3
to Energy Efficiency Action Plan

INFORMATION, EDUCATION AND TRAINING ACTIVITIES

1. Requirement for energy companies to provide information to energy customers and municipal authorities on efficiency of energy resources and energy, safe and efficient use of energy objects and equipment, energy objects and equipment under construction and reconstruction, energy prices and services rendered to energy customers.

By virtue of the Law on Amending and Supplementing Articles 2, 4, 6, 16, 17, 21, 27 and 28 of the Law on Energy and Adding Article 7^1 to the Law ("Valstybės žinios" (Official Gazette), 2008, No. 135-5228) the Ministry of Economy of the Republic of Lithuania is tasked with organizing the sharing of experience between public authorities, institutions, enterprises and organisations in the field of efficiency of energy and energy resources at the national and international level.

In implementing Article 13(3) of Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC (OJ 2006 L 114, p. 64) (hereinafter – the Directive), the Rules on the provision of information related with energy activities to public authorities, institutions and third parties were amended by Order No. 4-136 of 19 June 2008 of the Minister of economy of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2008, No. 72-2777) and were set forth in a new version. The aim of the Rules is to guarantee the right of public authorities, institutions and third parties (energy end-users, municipalities, EU bodies and institutions) to receive energy activities related information from energy enterprises and natural persons engaged in energy activities and establish the procedure for the provision of such information. The Rules define the procedure for the provision of energy activities related information, its amount and conditions, as well as relationships between information providers and third parties. The Rules apply to energy enterprises, natural persons engaged in energy activities, public bodies, institutions and respective third parties.

Heat, electricity and gas enterprises according to their competence provide to final customers of energy in the territory of their activities the following information about:

- energy and services provided to final customers;
- principles of concluding energy supply agreements and rights of final customers;
- energy prices and tariffs;
- safe and efficient use of energy objects and equipment;
- energy objects and equipment under construction or reconstruction;
- efficient use of energy sources and energy.

Heat, electricity and gas enterprises make available to final customers their phone numbers and e-mail addresses for contacting them for obtaining the aforementioned information.

Heat, electricity and gas enterprises holding licenses issued by public authorities to engage in respective activity shall provide at least once a year alongside the bill to the final customer and if energy is supplied to a multi-dwelling building, to the association of multi-dwelling building owners or its administration body in clear and understandable form, unless different settlement methods are established in the contract, or separately by ordinary mail or e-mail depending upon the form in which the customer receives payment documents, or in the internet self-service websites the following information:

- Comparison of the final customer's energy consumption amount with minimum and average energy amount consumed by the final customer belonging to the same group of

final customers. Where appropriate, minimum and average amount of energy consumed by the final customer is recalculated in consideration of all factors that affect energy consumption and do not depend upon behaviour and actions of the final customer of energy, for example, weather conditions, building use hours, etc. Alongside the comparison the energy enterprise also provides the description of final customers being compared.

- Comparison of energy amount consumed by the final customer during the reference period with the amount of energy consumed by the same final customer during the same period of the previous year, where appropriate specifying parameters predetermining consumption of energy. This comparison shall be optional if submission of bills is not required by legal acts.

Heat, electricity and gas enterprises and retail petroleum product sales companies submit to final customers the bills and contact details of organisations, institutions, entities and enterprises, including their website addresses, where information about energy efficiency improvement measures, comparison of energy consumed by final customers and (or) technical specifications of equipment using energy, etc. can be found, providing such information in contracts, vouchers or in any other form and where appropriate on the internet website of the enterprise.

Information to final customers may be provided in one of ways specified below:

- preparing, publishing and circulating brochures, booklets, leaflets, posters and other information publications;
- organising conferences, seminars, workshops and meetings;
- preparing radio and TV broadcasts, discussions and (or) participating in them;
- preparing articles and submitting them to mass media;
- using electronic and other means of communication.

Control of information provided to final customers is carried out by the State Energy Inspectorate under the Ministry of Economy of the Republic of Lithuania.

2. Rendering of information, methodological and organizational assistance to cooperating business entities of Lithuania and EU and to academic and advisory bodies participating in EU programmes aimed at the improvement of efficiency of energy and energy resources.

These activities are carried out according to the needs of business, academic and advisory bodies of the Republic of Lithuania and the European Union which maintain or seek maintaining cooperation in the specified programmes of the European Union.

3. Publicizing information about programmes under implementation, providing advise and organising training about use of the programme measures.

Information about energy efficiency improvement related programmes implemented in the country which are aimed at achieving the national indicative energy savings target and advise on the use of measures established under the programmes is provided by authorities responsible for the implementation of such programmes:

Information on measures of the EU Structural Support Strategy for 2007-2013 according to Activity Group 4 “Promotion of energy generation and consumption efficiency and use of renewable energy resources” of Priority 3 “Environment and sustainable development” of the Operational Programme “Promotion of Cohesion”:

- Promotion of energy generation efficiency;
- Renovation of public buildings at the national level;
- Renovation of public buildings at the regional level; and
- Renovation projects of public buildings conforming to benefits and quality assessment criteria of SPD Measure 1.2. is provided by the Ministry of Economy of the Republic of Lithuania and posted on its website: http://www.ukmin.lt.

Information on the programme of implementation of the National Energy Strategy approved by Resolution No. X-1046 of 18 January 2007 of the Seimas of the Republic of Lithuania (“Valstybės žinios” (Official Gazette), 2007, No. 11-430) is provided by the

Ministry of Economy of the Republic of Lithuania and posted on its website: http://www.ukmin.lt.

Information about the National Energy Efficiency Programme for 2006–2010 approved by Resolution No. 443 of 11 May 2006 of the Government of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2006, No. 54-1956) and its implementation is provided by the Ministry of Economy of the Republic of Lithuania and posted on its website: http://www.ukmin.lt.

Information on the Housing Strategy of Lithuania approved by Resolution No. 60 of 21 January 2004 of the Government of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2004, No. 13-387) and on 2004–2006 Plan of Measures of Implementation of the Housing Strategy of Lithuania approved by Resolution No. 1145 of 8 September 2004 of the Government of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2004, No. 137-4996) is provided by the Ministry of Environment of the Republic of Lithuania and posted on its website: http://www.am.lt.

Information on the Programme of Modernisation of Multi-dwelling Buildings approved by Republic of Lithuania Government Resolution No. 1213 of 23 September 2004 ("Valstybės žinios" (Official Gazette), 2004, No.143-5235; 2005, No.78-2839; 2008, No. 36-1282) and its implementation is provided by a public institution the Housing and Urban Development Agency and by the Ministry of Environment of the Republic of Lithuania and posted on their websites: http://www.bkagentura.lt and http://www.am.lt, respectively.

Information about the Programme of renovation and provision with teaching aids of general education schools and vocational education and training establishments for 2006–2008 approved by Republic of Lithuania Government Resolution No. 1230 of 16 November 2005 ("Valstybės žinios" (Official Gazette), 2005, No. 137-4919) and its implementation is provided by the Ministry of Education and Science of the Republic of Lithuania and posted on its website: http://www.smm.lt.

Information about the Programme for improvement of schools (C component) and its implementation is provided by the public institution the Central Project Management Agency and by the Ministry of Education and Science of the Republic of Lithuania and posted on their websites: http://www.cpva.lt and http://www.mtp.smm.lt, respectively.

Information about the Energy-savings programme for public authority buildings is provided by the Central Project Management Agency and posted on its website at http://www.cpva.lt.

Information about MATRA programme of implementation of EU directives is provided by the public institution the Central Project Management Agency and posted on its website: http://www.cpva.lt.

Information about the Programme of renovation and reconstruction of science and studies institutions for 2003–2006 is provided by the public institution the Central Project Management Agency and posted on its website: http://www.cpva.lt.

Information about the Municipal infrastructure development programme (2000–2004) is provided by the public institution the Central Project Management Agency and posted on its website: http://www.cpva.lt.

Information about the Programme of renovation of university student hostels approved by Republic of Lithuania Government Resolution No. 843 of 1 September 2006 ("Valstybės žinios" (Official Gazette), 2006, No. 94-3699) and its implementation is provided by the Ministry of Education and Science of the Republic of Lithuania and posted on its website: http://www.smm.lt.

Information about the Programme of renovation of imprisonment institutions and humanisation of imprisonment conditions for 2004–2009 approved by Republic of Lithuania Government Resolution No. 619 of 24 May 2004 ("Valstybės žinios" (Official Gazette), 2004, No. 85-3081) and its implementation is provided by the Prison Department under the

Ministry of Justice of the Republic of Lithuania and posted on its website: http://www.kalejimudepartamentas.lt.

Information about the Programme of modernisation of cultural centres for 2007–2020 approved by Republic of Lithuania Government Resolution No. 785 of 4 August 2006 ("Valstybės žinios" (Official Gazette), 2006, No. 88-3470) and its implementation is provided by the Ministry of Culture of the Republic of Lithuania and publicised on its website: http://www.muza.lt.

4. Providing advise and information to final customers, organising their training on energy efficiency improvement matters and organising the preparation and publishing of information material about savings of energy resources and energy; disseminating energy savings ideas via TV and radio; organising conferences, seminars, contests and exhibitions which enhance capacities of the country's specialists and of the public to use more efficiently energy resources and energy; prepare and disseminate information about energy efficiency improvement projects' financing possibilities.

Information, education and consulting activities carried out in implementing the National Energy Efficiency Programme include preparation and publishing of more than 50 different publications on efficiency of energy resources and energy as well as wider use of indigenous and waste energy resources, and organisation of more than 40 seminars, conferences, contests; organisation of and participation in TV and radio broadcasts, preparation of information for press.

Souvenirs with symbols of Multi-dwelling buildings modernisation programme on caps, T-shirts, ball-point pens, key-holders, meters, levels, etc. were produced and circulated. The afore mentioned information, education and consulting activities are aimed at the country's residents and their individual groups: pupils, students, specialists.

The draft educational programme "Saving of energy and energy resources, warm and ecological dwellings" was worked out and integrated into the teaching programmes of different subjects for pupils, accompanied by the preparation of methodological material and recommendations for implementation of this programme. The programme was submitted to the Ministry of Education and Science for enforcement in the established manner.

Recommendations have been prepared for municipalities for educating, informing and encouraging people to use energy resources and energy in an efficient manner. Also, recommendations have been prepared for energy enterprises how, according to their competence, they should provide energy users with information about energy activities and safe use of energy resources, energy in energy objects and equipment.

Employees of the public institution Housing and Urban Development Agency drafted training programmes "Introduction of energy management in multi-dwelling buildings" and "Implementation of energy performance certification of multi-dwelling buildings" according to which owners of multi-dwelling buildings, associations of multi-dwelling buildings, natural persons authorised to manage and maintain common-use objects of multi-dwelling buildings according to the joint activity agreement, enterprises authorised to administer joint ownership of multi-dwelling buildings were trained.

In 2006–2007 on order of the Ministry of Environment of the Republic of Lithuania, the Federation of Associations of Owners of Multi-dwelling Buildings of the Republic of Lithuania organised training for employees engaged in management and administration activities of associations of owners of multi-dwelling buildings. 886 employees engaged in management and administration activities of associations of owners of multi-dwelling buildings and individuals concerned participated in the training.

5. Recommendations for application of energy efficiency improvement criterion to public procurement (draft).

In implementing Article 5 of the Directive, the Government of the Republic of Lithuania adopted Resolution "On goods public procurement of which is subject to energy efficiency requirements and approval of the list energy efficiency requirements for such

goods". By virtue of this Resolution the Public Procurement Service under the Government of the Republic of Lithuania was charged with supplementing the Recommendations for the assessment of public procurement tenders approved by Order No. 1S-53 of the Director of Procurement Service under the Government of the Republic of Lithuania of 12 October 2006 ("Valstybės žinios" (Official Gazette), 2006, No. 113-4329) with energy efficiency as one of the criteria of assessment of public procurement tenders and to coordinate the amendments to the aforementioned Recommendations with the Ministry of Economy of the Republic of Lithuania.

6. Sharing between bodies of the public sector the examples of best practice in the field of efficiency of energy and energy resources and publishing examples of best practice of the public sector in the field of efficiency of energy and energy resources in mass media.

By virtue of the Law on Amending and Supplementing Articles 2, 4, 6, 16, 17, 21, 27 and 28 of the Law on Energy and Adding Article 7^1 to the Law the Ministry of Economy of the Republic of Lithuania was charged with the task of organising the sharing of experience between public bodies, institutions, enterprises and organisations in the field of efficient use of energy and energy resources at the national and international level.

7. Organising and performing energy audits in public buildings and implementing measures recommended in the audit report.

In implementing Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and its Article 12, the Minister of Economy of the Republic of Lithuania issued Order No. 4-184 of 29 April 2008 on the approval of the Methodology of comprehensive audit of the use of energy, energy resources and cold water in public buildings ("Valstybės žinios" (Official Gazette), 2008, No. 55-2097). The Methodology defines the stages of performance of audit of the use of energy, energy resources and cold water in public buildings and the preparation of audit report. The purpose of a comprehensive audit of the use of energy, energy resources and cold water is to assess the current status of the building envelopes and engineering systems of buildings, identify the factors which influence the consumption of energy, energy resources and cold water, select and recommend appropriate measures the implementation of which would facilitate both in reducing consumption of energy, energy resources and cold water, improving comfort conditions and extending useful life of the building or parts thereof.

Energy audits are carried out in implementing different energy efficiency improvement programmes. Multi-dwelling buildings modernisation programme which included 720 audits and the Programme of renovation and reconstruction of science and studies institutions for 2003–2006 covering more than 120 audits can be mentioned here as examples.

It has been provided that applicants included in the List of state projects proposed for the financing from EU SF under the measure "Renovation of public buildings at the national level" approved by Order No. 4-328 of 18 July 2008 of the Minister of Economy of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2008, No. 89-3572) and receiving financing from the EU Structural Support Strategy for 2007–2013 according to the measure "Renovation of public buildings at the national level" of the Operational Programme "Promotion of Cohesion" will have to perform over 130 audits; more than 120 audits have already been carried out according to the measure "Renovation projects of public buildings complying with use and quality assessment the criteria under SPD measure 1.2.

Also, audits will be performed in order to obtain funding under the measure "Renovation of public buildings at the regional level" of the Operational Programme "Promotion of Cohesion".

It is required to perform energy audits in order to obtain financing under energy efficiency improvement programmes.

8. Standard contracts for financial instruments between potential purchasers and providers of energy services and other energy efficiency improvement measures of the public and private sector.

In implementing Article 9(2) of the Directive and with a view to stimulating energy customers to conclude energy efficiency contracts with providers of energy services, the Standard Contract for Energy Efficiency of Buildings was approved by Order No. 4-511 of 27 October 2008 of the Minister of Economy of the Republic of Lithuania ("Valstybės žinios" (Official Gazette), 2008, No. 130-5000). The approved Standard Contract will be used for the purpose of concluding energy efficiency contracts between owners of buildings (or authorised representatives representing the owners' interests) and legal persons providing energy services.

Legal persons providing energy services under the contract, will guarantee the saving of the contractual amount of energy resources and (or) energy through implementation of energy saving measures provided for in the contract. Beneficiaries of the services will pay to the provider of energy savings services the fee equal to the price for energy resources and (or) energy saved during the previous contractual period. If savings of energy resources and (or) energy are smaller than established in the contract, the fee due from beneficiaries for the services will be reduced by the difference between expenses and income of beneficiaries of services resulting from the saved amount of energy resources and (or) energy. If savings of energy resources and (or) energy are larger than established in the contract, the resulting amount of funds will go to service providers.