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ENERGY EFFICIENCY
ACTION PLAN
2014

LITHUANIA

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Abbreviations

Action Plan	Energy Efficiency Action Plan
Measure	Measure to increase energy efficiency
Horizontal measure	Horizontal measure to increase energy efficiency
Directive 2012/27/EU	Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC
Directive 2006/32/EC	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
Directive 2009/72/EC	Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC
EU	European Union
GDP	Gross domestic product
STR	Technical construction regulation
Calculation Rules	Rules for calculating national energy savings approved by Order No 1-33 of the Minister for Energy of the Republic of Lithuania of 10 April 2009
Monitoring Rules	Rules for monitoring efficient consumption of energy resources and energy approved by Resolution No 692 of the Government of the Republic of Lithuania of 9 July 2008
RM system	Remote data collection and management system
SPD	Single Programming Document
TFES	Total final energy savings
BETA	Public body Housing Energy Saving Agency
Appraisal Procedure	Procedure for and conditions of conducting energy audits in buildings, installations and technological processes and for the training and appraisal of specialists conducting energy audits in buildings, installations and technological processes approved by Order No 1-148 of the Minister for Energy of the Republic of Lithuania of 2 August 2012
Methodology for conducting audits of technological processes and installations	Methodology for conducting energy, energy resources and water consumption audits in technological processes and installations approved by Order No 1-141 of the Minister for Energy of the Republic of Lithuania of 10 May 2010
Methodology for conducting audits in public buildings	Methodology for conducting comprehensive energy, energy resources and cold water consumption audits in public buildings approved by Order No 4-184 of the Minister for the Economy of the Republic of Lithuania of 29 April 2008
Programme for renovating multi-apartment buildings	Programme for renovating (modernising) multi-apartment buildings approved by Resolution No 1213 of the Government of the Republic of Lithuania of 23 September 2004

SEI	State Energy Inspectorate under the Ministry of Energy
CPMA	Public body Central Project Management Agency
LBSA	Public body Lithuanian Business Support Agency
LEIF	Budgetary institution Lithuanian Environmental Investment Fund
EE	Energy efficiency
List	List of goods subject to energy efficiency requirements during the public procurement procedure and of energy efficiency requirements to these goods approved by Resolution No 1023 of the Government of the Republic of Lithuania of 8 October 2008; List of goods subject to energy efficiency requirements during the public procurement procedure, except for road transport, and of energy efficiency requirements to these goods approved by Order No 1-266 of the Minister for Energy of the Republic of Lithuania of 27 October 2011
EEA	European Economic Area
Public buildings	Heated and/or cooled buildings owned by the state and used by public authorities and bodies that are public administration entities
List of public buildings	List of heated and/or cooled buildings owned by the state and used by public authorities and bodies that are public administration entities approved by Order No 1-7 of the Minister for Energy of the Republic of Lithuania of 23 January 2014
ESC	Energy services company
CHS	District heating supply
Obligation scheme	Energy efficiency obligation scheme
Alternative measure	Alternative policy measure (outside of the scope of the energy efficiency obligation scheme)

1. INTRODUCTION

The Action Plan has been drawn up in accordance with the provisions of Directive 2012/27/EU and having regard to Commission Implementing Decision of 22 May 2013 establishing a template for National Energy Efficiency Action Plans under Directive 2012/27/EU of the European Parliament and of the Council (notified under document C(2013) 2882).

The Action Plan describes important energy efficiency improvement measures and energy savings planned and/or achieved including measures concerning energy supply, transmission and distribution as well as final consumption to attain the national energy efficiency targets.

It offers an overview of national energy efficiency improvement targets and energy savings planned, the national energy efficiency target for 2020, complementary energy efficiency targets, primary and final energy savings, energy efficiency improvement measures, annexes concerning the annual energy efficiency report, the setting of minimal energy savings for 2014-2020 in accordance with Article 7 of Directive 2012/27/EU, consumer information programmes and training and a long-term strategy for channelling investments to the renovation of the national pool of residential and commercial buildings owned both publicly and privately.

The Action Plan presents programmes implemented nationally to enhance energy resources and energy efficiency and other measures approved or to be approved with a view to implementing the principal provisions of Directive 2012/27/EU as well as data on energy efficiency indicators and their evolution trends in the sectors of the national economy and final energy consumption in the sectors, and an overview of measures implemented on a national scale.

The Action Plan is based on the data supplied by Statistics Lithuania, energy companies and other authorities and organisations. The measures cover household, services, industry, energy and transport sectors as well as horizontal measures to enhance energy efficiency.

Measures ongoing in the household sector:

- Programme for renovating (upgrading) multi-apartment buildings;
- Programmes for the development of municipal problem areas for 2011-2013;
- EU Structural Funds for 2007-2013 (Measure “Promoting the upgrading of multi-apartment buildings”);
- Special Climate Change Programme;
- Ignalina Programme for 2007-2013;
- EU Structural Funds for 2014-2020.

Measures ongoing in the services sector:

- Renovation of heated and/or cooled buildings owned by the state and used by public authorities and bodies that are public administration entities;
- EU Structural Funds for 2007-2013 (Operational Programme for Promotion of Cohesion);
- Programme for upgrading educational institutions;
- Programme for renovating and upgrading of libraries for 2007-2013;
- Programme for upgrading cultural centres for 2007-2020;
- Programme for upgrading museums for 2007-2015;
- EEA and Norwegian Financial Mechanisms;
- Ignalina Programme for 2007-2013;
- Energy efficiency requirements to public procurement procedures;
- Green procurement;
- Special Climate Change Programme;
- EU Structural Funds for 2014-2020.

Measures ongoing in the industry sector:

- EU Structural Funds for 2007-2013 (cogeneration);

- EU Structural Funds for 2007-2013 (audits) – Procesas LT;
- Programme of the Lithuanian Environmental Investment Fund; Special Climate Change Programme (Measure “Increasing energy efficiency in the industry sector”);
- European Economic Area and Norwegian Financial Mechanisms;
- Measures implemented by industries;
- EU Structural Funds for 2014-2020.

Measures implemented in the energy sector:

- Support from EU Structural Funds for 2007-2013 (Operational Programme for Economic Growth);
- Support from EU Structural Funds for 2007-2013 (Operational Programme for Promotion of Cohesion);
- Voluntary agreements with energy companies;
- Lithuanian Environmental Investment Fund;
- Special Climate Change Programme;
- Support from the EU Structural Funds for 2014-2020;
- Requirements to energy accounting and to the installation of metering devices to carry out such accounting;
- Installation of smart energy meters at final customers.

Measures implemented in the transport sector:

- Roadworthiness tests of road vehicles;
- EU Structural Funds for 2007-2013 (integrated development of green public transport);
- EU Structural Funds for 2007-2013 (Priority “Essential economic infrastructure” of the Operational Programme for Economic Growth);
- Improvement of road infrastructure and reduction of traffic congestion;
- A Day Without Cars Initiative;
- Special Climate Change Programme;
- EU Structural Funds for 2014-2020.

Horizontal measures include various legislation, regulations, norms and public awareness raising activities. Horizontal measures are of a broad scope and affect all sectors and all areas including buildings, installations, technological processes and consumer behaviour.

Horizontal measures:

- Long-term strategy for the renovation of the national pool of buildings (draft);
- STR 2.05.01:2005 “Heating technology of building envelopes”;
- STR 2.05.01:2013 “Energy performance design of buildings”;
- STR 2.09.02:2005 “Heating, ventilation and air conditioning”;
- STR 2.01.09:2005 “Energy performance of buildings. Energy performance certification”;
- Checking the compliance of heating systems with energy efficiency requirements;
- Checking the compliance of air conditioning systems of buildings with energy efficiency requirements;
- Pollution tax concessions;
- Labelling of products relating to energy consumption;
- Ecodesign;
- Information, educational and training activities;
- Qualification and certification systems;
- Obligation scheme to ensure energy efficiency and alternative policy measures;

- Energy audit and energy management systems.

2. OVERVIEW OF NATIONAL ENERGY EFFICIENCY IMPROVEMENT TARGETS AND ENERGY SAVINGS PLANNED

2.1. National energy efficiency improvement target

The indicative national energy efficiency target for 2020 (Article 3(1) of Directive 2012/27/EU) is 740 ktoe of final energy.

A forecast of energy needs in 2020 has considered actual primary and final energy needs in 2011 and taken into account the key factors to affect energy consumption in the future:

- GDP growth and related growth in energy consumption (in individual sectors);
- changes in the population and related changes in energy consumption (in individual sectors).

The evaluation of the GDP growth is based on the assumption that the average annual GDP growth until 2020 will be 3%. Thus, in 2020 Lithuania's GDP will be 133% of the GDP level in 2011. The evaluation of population trends is based on the assumption that in 2020 Lithuania's population will be 93% of the 2011 population level. So, the GDP per capita in Lithuania in 2020 will be 43% higher than in 2011.

The evaluation has also covered the dependence of the final energy needs in various sectors of the economy on the GDP growth and changes in the population (see Table 1). The evaluation has specifically considered how electricity needs increase or decrease in various sectors with the GDP growth or changes in the population and also, specifically, how heat and final fuel consumption change in various sectors of the economy.

Table 1. Dependence of the final energy needs in various sectors of the economy on the GDP growth and changes in the population

	GDP growth by 1%	Population decrease by 1%
Electricity		
Industry, construction and agriculture	+1	-0
Services sector	+0.5	-0.2
Transport	+0.3	-0.2
Households	+0.1	-0.5
Fuel and heat energy		
Industry, construction and agriculture	+0.5	-0
Services sector	+0.2	-0.2
Transport	+0.3	-0.2
Households	0	-0.5

The said assumptions and the actual final energy consumption data for 2011 (4 696 ktoe) are used to evaluate the total final energy demand in Lithuania in the future in various sectors of the economy and in Lithuania as a whole. This is a forecast for the total final energy demand without taking into account the effects of energy saving measures.

The forecast for the final energy demand without taking into account the effects of energy saving (energy efficiency improvement) measures in 2020 would be 5 018 ktoe.

On 23 May 2013 a meeting at the Ministry for Energy of the Republic of Lithuania decided to calculate the indicative national energy efficiency target for final energy consumption, which is why it is impossible to provide data on how much primary energy is to be saved in 2020 in total and by sector.

In accordance with Article 7 of Directive 2012/27/EU, Member States are to establish the TFES indicator which must be achieved by obligated parties under the energy efficiency obligation scheme by 2020.

Every year between 1 January 2014 and 31 December 2020 new energy savings must be ensured amounting to at least 1.5% of average annual energy sales to final customers. The average is calculated for three years before 2013, i.e. for 2010, 2011 and 2012. The calculation must include the sales of all energy sellers and/or distributors of all kinds of energy and energy resources to final customers, except for energy consumed in the transport sector (it may be included or excluded at the discretion of the Member State). The TFES indicator is described in Annex 2 to the Action Plan.

2.2. Complementary energy efficiency targets

In accordance with the requirements of Directive 2006/32/EC, the Member States are to set a general indicative national energy saving target of 9% by 2016. The target set by the Republic of Lithuania by 2016 is 3 797 GWh (327 000 toe). This target and the schedule for implementing it are shown in Figure 1.

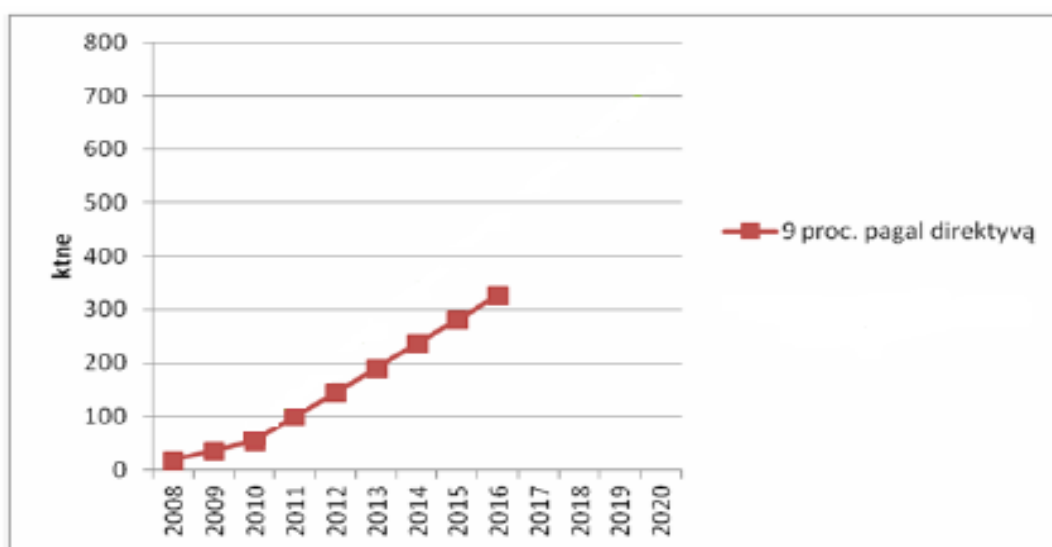


Fig. 1. Complementary target to improve energy efficiency as required by Directive 2006/32/EC

2.3. Primary energy savings

As mentioned in Chapter 2.1 of the Action Plan, a decision was made to calculate the indicative national energy efficiency target for final energy consumption, which is why it is impossible to provide data on how much primary energy is to be saved in 2020 in total and by sector, and it is impossible to provide data on the total primary energy savings before the submission of the report.

The final energy savings by the end of 2012 by groups of measures in all sectors is 137.8 ktoe.

The absolute primary energy consumption in 2020 is forecasted to be 6 485 ktoe.

2.4. Final energy savings

Final energy savings in 2010 and in 2016 is established by applying the “bottom-up” approach taking into consideration energy savings of each measure.

Data on final energy savings in 2010 and by 2016 are presented in Table 2.

Table 2. Energy savings in 2010 and by 2016

Sector	2010, thousand toe	By 2016, thousand toe
Households	6.87	47.97
Services sector	9.45	33.27
Industry	n/a	48.58
Energy sector	n/a	63.62
Transport sector	n/a	40.58
Horizontal measures	50.73	106.62
Total	67.06	340.67

Final energy savings are calculated on the basis of the following documents and methods:

1. The Monitoring Rules set out the monitoring requirements to buildings, technological processes, installations or transport units covered by energy efficiency improvement measures and receiving financial support from energy efficiency improvement programmes implemented by the public authorities. Monitoring of efficient consumption of energy resources and energy covers the following:

- regular registration of the entity's proper indicators¹ on energy resources and energy;
- regular registration of ambient energy indicators²;
- evaluation of the entity's proper and ambient indicators;
- reviewing the evaluation of the entity's proper and ambient indicators, the entity's status and its changes and making forecasts.

The evaluation of the entity's indicators during the monitoring exercise, the review of the monitoring exercise and the forecast are used to establish energy savings by entities, to ensure efficient consumption of energy resources and energy on a national scale, to draft energy efficiency improvement programmes and to develop mechanisms for energy resources and energy efficiency.

The monitoring process involves persons receiving financial support from programmes, the public authorities or bodies administrating programmes implemented by the public authorities and the Ministry of Energy of the Republic of Lithuania.

Upon completing the implementation of energy efficiency measures, persons receiving financial support from programmes register the entity's ambient and proper indicators during the same calendar year and for one calendar year afterwards and then transmit the data collected to the administrator of the respective programme. Apart from each entity's proper and ambient indicators, the monitoring of energy resources and energy consumption covers the following: the type and number of measures implemented, energy properties and the amount of investment in specific measures. It is relevant programme administrators who evaluate individual programme indicators, review the monitoring exercise and make the forecast and file the programme monitoring report on efficient consumption of energy resources and energy for the previous calendar year to the Ministry of Energy.

2. The Calculation Rules set out the calculation rules for energy resources and energy savings by implementing measures on the national level, energy efficiency indicators used for these calculations and the procedure for calculating them. The provisions of the calculation rules for national energy savings apply when calculating national energy savings and drawing up energy efficiency action plans in accordance with the requirements of Article 14 of Directive 2006/32/EC.

Energy savings are calculated for specific energy efficiency improvement programmes and mechanisms where their effect on the improvement of energy efficiency can be measured or

¹ Proper indicators mean indicators depending on the final customer such as energy resources and energy consumption at the site, the size of the site, the scale of activity conducted at the site and comparative consumption indicators of energy resources and energy.

² Ambient indicators mean indicators independent of the final customer such as prices of energy resources, energy and site maintenance and local climate properties of the site.

calculated and verified. Energy savings and energy efficiency indicators are established by combining the “bottom-up” approach with the “top-down” approach.

The bottom-up method is used to establish energy savings due to each individual measure implemented. Energy savings of individual measures can be evaluated using measurement-based data:

- directly metering the energy consumption at the entity where the measure is implemented (a specific technological installation, process, a building’s heating system, lighting equipment, etc.);
- data of energy bills for a specific period submitted by energy companies before and after implementing the measure;
- energy sales data of energy companies collected before and after implementing the measure;
- equipment and devices sales data;
- data of applied research and surveys.

Energy savings are calculated using usual methods without verifying the results (e.g. applying default values) or more complex methods where final results are verified.

When using the top-down approach, energy savings are calculated starting with national or sector-specific energy savings. Annual data are revised taking into account side factors (degree-days, structural changes, range of products, etc.). Using the top-down approach, energy savings and energy efficiency indicators are calculated on the basis of changes of energy efficiency indicators in individual sectors of the economic activity or in sectors of final energy consumption identified on the grounds of the data collected by Statistics Lithuania and other national data.

On the national level it is the state enterprise the Energy Agency that carries out calculations of energy savings.

3. The European Commission has drafted the recommended methodology “Recommendations on measurement and verification methods within the framework of Directive 2006/32/EC on energy end-use efficiency and energy services”.

3. ENERGY EFFICIENCY IMPROVEMENT MEASURES

3.1. Horizontal measures

This Chapter presents a description of horizontal measures completed, ongoing and planned, energy savings by 2012 and energy savings by 2020. The savings are calculated using the bottom-up approach.

Table 3.1.1. Summary results of horizontal measures completed, ongoing and planned

Table No	Measure	Period, years	Energy savings by the end of 2012, GWh	Energy savings by the end of 2020, GWh
–	Energy efficiency obligation scheme and alternative policy measures	2014-2020	not applicable	11 677*
–	Energy audit and energy management systems	Start in 2008	n/a	n/a
3.1.2	Long-term strategy for the renovation of the national pool of buildings (draft)	2014-2025 (2030)	not applicable	n/a
3.1.3	STR 2.05.01:2005 “Heating technology of building envelopes”	2005-2013	470.4	470.4
3.1.4	STR 2.05.01:2013 “Energy performance design of buildings”	Start in 2013	n/a	n/a
3.1.5	STR 2.09.02:2005 “Heating, ventilation and air conditioning”	Start in 2005	n/a	n/a
3.1.6	STR 2.01.09:2005 “Energy performance of buildings. Energy performance certification”	Start in 2006	n/a	n/a
3.1.7	Checking the compliance of heating systems with energy efficiency requirements	Start in 2013	n/a	n/a
3.1.8	Checking the compliance of air conditioning systems of buildings with energy efficiency requirements	Start in 2013	n/a	n/a
3.1.9	Pollution tax concessions	Start in 2004	n/a	n/a
3.1.10	Labelling of products relating to energy consumption	Start in 2004	n/a	n/a
3.1.11	Ecodesign	Start in 2005	n/a	n/a
3.1.12	Information, educational and training activities	Start in 1996	n/a	n/a
3.1.13	Qualification and certification systems	Start in 2005	n/a	n/a
TOTAL:			470.4	12 147.4

* - calculated using the cumulative method

3.1.1. Energy efficiency obligation scheme and alternative policy measures

The total final energy savings target in Lithuania starting from 2015 and up to 31 December 2020 is 11 677 TWh (calculated using the cumulative method). It has been calculated on the basis of Articles 7(2)(a), 7(2)(c) and 7(2)(d) of Directive 2012/27/EU, without prejudice to Article 7(3) of Directive 2012/27/EU. Moreover, in accordance with the second paragraph of Article 7(1), the calculations did not include the total energy consumed in the transport sector. The target will be achieved by implementing the obligation scheme and combining it with alternative measures. The Ministry of Energy of the Republic of Lithuania is responsible for the attainment of this target. The first phase of the obligation scheme will cover the period between 1 January 2014 and 31 December 2016. The second phase will last from 1 January 2017 until 31 December 2020.

Measures improving energy efficiency at final customers that are not covered by the obligation scheme are treated as alternative measures. These measures can be financed by the EU Structural Funds, the state budget and other support programmes.

The calculation of minimal energy savings in 2014-2020 under Article 7 of Directive 2012/27/EU is presented in Annex 2 to the Action Plan.

A system for the implementation, quality control, monitoring and evaluation of the obligation scheme is described below. The implementation of the obligation scheme is to help to save about 80% of the TFES target. Alternative measures are to save about 20% of the said target.

The following criteria will be followed in administrating the obligation scheme:

Two interim periods are established for the obligation scheme:

- 1 January 2014 to 31 December 2016;
- 1 January 2017 to 31 December 2020.

During the first phase of the obligation scheme, the obligated parties are to be as follows: the electricity distribution network operator AB Lesto, the natural gas distribution network operators AB Lietuvos dujos and heating companies whose heat sales exceed 90 GWh. A specific energy savings target is set for each obligated party.

The Ministry of Energy has appointed a designated authority (the state enterprise the Energy Agency) to administrate the obligation scheme.

In accordance with the model of the obligation scheme being developed, the key participants and their functions are set in the draft Law of the Republic of Lithuania on energy efficiency:

The Ministry of Energy:

- lays down the procedure for appointing obligated parties and for publishing their respective energy savings targets and information on energy savings achieved by the obligated parties within the energy efficiency obligation scheme;
 - approves the list of standard energy efficiency improvement measures;
 - sets out the procedure for measuring, controlling and verifying energy savings.
- The National Control Commission for Prices and Energy:
- lays down the procedure for and conditions of including costs incurred by obligated parties when implementing energy efficiency improvement measures in state-regulated prices and tariffs.

Energy savings by 31 December 2020 reaching 11 677 TWh (calculated using the cumulative method) to be achieved by implementing the obligation scheme are calculated in

accordance with the requirements of Directive 2012/27/EU and the recommendations drafted by the European Commission. This figure is established by the Ministry of Energy of the Republic of Lithuania. Energy savings are expressed as final energy.

The obligation scheme focuses on the implementation of energy efficiency improvement measures in the sectors of buildings and the industry. Obligated parties can implement energy efficiency improvement measures at all final customers. Although the implementation of the measures is to be promoted in the sectors of the industry and buildings, there are no limitations preventing obligated parties from seeking optimal energy savings in other areas as well.

The key categories of energy efficiency measures are not currently known. They will be established by approving the list of standard energy efficiency improvement measures. In accordance with the model of the obligation scheme currently under development, the administrator of the obligation scheme will perform system monitoring and evaluation functions and make suggestions regarding the inclusion of additional measures in the list of standard energy efficiency improvement measures or changes in existing measures if the current progress is deemed insufficient and the savings target may remain unattained.

Until new procedures/methodologies for calculating/establishing energy savings, auditing, control and verification are approved, the said actions will be performed in accordance with the respective legislation currently in force:

- energy savings are calculated in accordance with the Calculation Rules and the Monitoring Rules;
- audits are conducted in accordance with the current Appraisal Procedure as well as the Methodology for conducting audits in public buildings and the Methodology for conducting audits of technological processes and installations;
- monitoring and verification reports and their independence of obligated, participating or entrusted parties are ensured in accordance with the requirements of the said Calculation Rules and the Monitoring Rules.

The western part (the seaside) and the eastern part of Lithuania are marked by little difference in climate conditions but it does have a tangible effect on energy consumption. When dealing with the matter of different climate conditions and calculating heat energy savings, this is taken into account, and energy savings are recalculated having regard to degree-days.

A system for implementing alternative policy measures. Alternative measures are to save about 20% of the TFES target. The type of alternative measures is the renovation of buildings improving their energy properties. Alternative measures cover multi-apartment buildings and public buildings. State aid is offered to owners of flats and other premises in multi-apartment buildings implementing renovation (upgrading) projects in accordance with the Government-approved Programme for renovating multi-apartment buildings or equivalent municipal programmes where the measures provided for in the renovation (upgrading) project ensure that the building will be of at least Class D in terms of energy performance. Public buildings are renovated in accordance with the requirements of Article 5 of Directive 2012/27/EU on the exemplary role of public bodies' buildings. Where necessary, the list of alternative measures may be extended.

The following criteria will be followed in administrating alternative measures:

Two interim periods are established for alternative measures:

- 1 January 2014 to 31 December 2016;
- 1 January 2017 to 31 December 2020.

Energy savings are calculated in accordance with the requirements of Directive 2012/27/EU and the recommendations drafted by the European Commission. This figure is established by the Ministry of Energy of the Republic of Lithuania. Total energy savings are expressed as final energy.

Energy savings will be calculated/established, monitored and verified and audits will be conducted in accordance with the same procedure, methodologies and rules as the obligation scheme.

3.1.2. Energy audit and energy management systems

In Lithuania the procedure for and conditions of conducting energy audits in buildings, installations and technological processes and for the training and appraisal of specialists conducting energy audits in buildings, installations and technological processes is laid down in the Appraisal Procedure.

Stages of conducting audits of energy, energy resources and cold water consumption in public buildings as well as the drafting of the respective audit report are provided for in the Methodology for conducting audits in public buildings.

The main stages of conducting audits of energy, energy resources and water consumption in technological processes and installations as well as the drafting of the audit report are provided for in the Methodology for conducting audits in technological processes and installations.

The transposition of the provisions and requirements of Directive 2012/27/EU relating to energy audit and energy management systems will also cover amendments to the said Methodology and the Procedure.

In implementing programmes to improve energy efficiency, Lithuania conducts energy audits. An example to be mentioned is the Programme for renovating multi-apartment buildings that has included over 700 audits.

An energy audit of a building is recommended in implementing public renovation programmes and is a must in order to receive support under the EU Structural Support Strategy for 2007-2013 under the measures “Renovation of public buildings on the national level” and “Renovation of public buildings on the regional level” of the Operational Programme for Cohesion in accordance with the Methodology for conducting audits in public buildings. 304 audits have been conducted under the measure “Renovation of public buildings on the national level”, 21 audits have been completed under the measure “Renovation projects of public buildings meeting benefit and quality assessment criteria of the SPD Measure 1.2” and 318 audits have been conducted under the measure “Renovation of public buildings on the regional level” of the Operational Programme for Cohesion. Energy audits evaluate energy losses in buildings, yield a justified plan of energy saving measures to reduce losses and suggest investments needed to implement these measures.

To receive financial support from energy efficiency improvement programmes, energy audits must be conducted.

In accordance with Directive 2012/27/EU Member States are to promote high-quality energy audits which are cost-effective and carried out in an independent manner.

Directive 2012/27/EU also stipulates that enterprises that are not SMEs are subject to an energy audit at least every four years. In 2010 Lithuania had 281 non-financial enterprises employing 250 and more employees with the annual income of more than LTL 138 million or with the value of the accounted assets of more than LTL 93 million. Before now energy audits in large companies in Lithuania has not been a requirement. Following the transposition of Directive 2012/27/EU in the national legislation of the Republic of

Lithuania, the requirement to conduct energy audits in large companies will become mandatory.

3.1.3. Long-term strategy for the renovation of the national pool of buildings (draft)

Table 3.1.2. Long-term strategy for the renovation of the national pool of buildings (draft)

Measure	Long-term strategy for the renovation of the national pool of buildings (draft)
Period	2014-2025 (2030)
Objective	To improve energy performance of the national stock of buildings
Legislation	Long-term strategy for channelling investments to the renovation of the national pool of residential and commercial buildings owned both publicly and privately
Budget and source of funding	State and municipal budgets, EU Structural Funds, other programmes and funds, legal and/or natural persons
Responsible authority	Ministry of Energy of the Republic of Lithuania
Supervisory authority	Ministry of the Environment and Ministry of Energy of the Republic of Lithuania
Outcomes of the measure	not applicable

3.1.4. STR 2.05.01:2005 “Heating technology of building envelopes”

Table 3.1.3. STR 2.05.01:2005 “Heating technology of building envelopes”

Measure	STR 2.05.01:2005 “Heating technology of building envelopes”
Period	2005-2013
Objective	To reduce energy costs in buildings
Legislation	STR 2.05.01:2005 “Heating technology of building envelopes” approved by Order No D1-156 of the Minister for the Environment of the Republic of Lithuania of 18 March 2005 approving Technical Construction Regulation STR 2.05.01:2005 “Heating technology of building envelopes”; STR 2.05.01:1999 “Heating technology of building envelopes” approved by Order No 117 of the Minister for the Environment of the Republic of Lithuania of 29 April 1999 approving Technical Construction Regulations
Activities supported	The Regulations lay down technical heating requirements to the design of walls in residential and non-residential buildings. The Regulation applies to the design of both new buildings and buildings under renovation
Budget and source of funding	Not established
Implementing	None

authority	
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes	<p>Energy savings are calculated in accordance with the recommended methodology drafted by the European Commission “Recommendations on measurement and verification methods within the framework of Directive 2006/32/EC on energy end-use efficiency and energy services”. Energy savings are calculated using the following formula:</p> $UFES = \frac{SHD_{incode}}{\eta_{incode}} - \frac{SHD_{newcode}}{\eta_{newcode}} \text{ [kWh/m}^2\text{/year]},$ <p>where</p> <p>SHD_{incode} is comparative energy demand for buildings calculated in accordance with the regulatory requirements to building walls laid down in STR 2.05.01:1999;</p> <p>SHD_{newcode} is comparative energy demand for buildings calculated in accordance with the regulatory requirements to building walls laid down in STR 2.05.01:2005;</p> <p>η_{incode}, $\eta_{newcode}$ is energy efficiency of the heating system.</p> <p>Calculations are made using NRG-sert Programme approved by the Ministry of the Environment of the Republic of Lithuania developed in accordance with the methodology of STR 2.01.09:2005 “Energy performance of buildings. Energy performance certification” used to establish the energy performance class of buildings. See more: http://www.spsc.lt/nrg/cms/index.php.</p> <p>Comparative energy consumption of typical buildings in kWh/m² is calculated applying regulatory requirements of the 1999 Technical Construction Regulation STR 2.05.01:1999 and the 2005 Technical Construction Regulation STR 2.05.01:2005 to heat transmission coefficients of walls of residential and public buildings by entering the data of surface areas of walls in the selected typical buildings, their measurements, parameters and orientation towards the sides of the horizon and taking into account typical heating and ventilation systems and their control level.</p> <p>Average standard energy consumption of a multi-apartment building in accordance with the standard heat transmission values of walls established in STR 2.05.01:1999 taking into account the efficiency of the heating system are 194.69 kWh/m²_{heated area}. In accordance with the standard heat transmission values of walls established in STR 2.05.01:2005, standard energy costs taking into account the efficiency of the heating system are 171.40 kWh/m²_{heated area}. Calculations of average energy costs of residential buildings are based on conditions that the average indoor air temperature is 20°C and the outdoor temperature is 0°C.</p> <p>Average standard energy consumption of a public building in accordance with the standard heat transmission values of walls established in STR 2.05.01:1999 taking into account the efficiency of the heating system is 197.25 kWh/m²_{heated area}. In accordance with the standard heat transmission values of walls in public buildings</p>

	<p>established in STR 2.05.01:2005, standard energy consumption taking into account the efficiency of the heating system is 178.08 kWh/m²_{heated area}.</p> <p>The heating system efficiency coefficient in buildings erected before 2005 under STR 2.05.01:1999 is $\eta = 0.93$, and in buildings subject to STR 2.05.01:2005, it is $\eta = 0.98$.</p> <p>Total energy savings by 2010 under this technical construction document are 340 GWh.</p> <p>In 2011, energy savings in residential buildings were 68.35 GWh and in public buildings – 12.75 GWh.</p> <p>In 2012, energy savings in residential buildings were 44.1 GWh and in public buildings – 5.2 GWh.</p>
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3.1.5. STR 2.05.01:2013 “Energy performance design of buildings”

Table 3.1.4. STR 2.05.01:2013 “Energy performance design of buildings”

Measure	STR 2.05.01:2013 “Energy performance design of buildings”
Period	Start in 2013
Objective	To reduce energy costs in buildings
Legislation	STR 2.05.01:2013 “Energy performance design of buildings” approved by Order No D1-909 of the Minister for the Environment of the Republic of Lithuania of 9 December 2013 approving Technical Construction Regulation STR 2.05.01:2013 “Energy performance design of buildings”
Activities supported	<p>The Regulation applies to the design of energy performance of residential and non-residential buildings (parts thereof) (except for buildings that are structures of cultural heritage where the application of the requirements would adversely alter their characteristic properties or appearance; prayer houses and other religious buildings; temporary buildings to be used for no more than 2 years; manufacturing and industrial, storage and agricultural non-residential buildings consuming little energy; isolated buildings of the total usable indoor surface area is no more than 50 square metres; recreational and gardening buildings used for no more than four months a year; unheated buildings) and technical heat properties of building structures.</p> <p>The requirements of the Regulation are mandatory when designing new buildings (parts thereof) and buildings (parts thereof) under reconstruction, renovation (upgrading) or repairs.</p>
Budget and source of funding	Not established
Implementing authority	None
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes	It is impossible to offer a quantitative assessment of the impact of the measure and to calculate energy savings

3.1.6. STR 2.09.02:2005 “Heating, ventilation and air conditioning”

Table 3.1.5. STR 2.09.02:2005 “Heating, ventilation and air conditioning”

Measure	STR 2.09.02:2005 “Heating, ventilation and air conditioning”
Period	Start in 2005
Objective	To reduce energy costs in buildings
Legislation	STR 2.09.02:2005 “Heating, ventilation and air conditioning” approved by Order No D1-289 of the Minister for the Environment of the Republic of Lithuania of 9 June 2005 approving Technical Construction Regulation STR 2.09.02:2005 “Heating, ventilation and air conditioning”
Activities supported	<p>The Regulation sets out that:</p> <p>Heating, ventilation and air conditioning systems shall make it possible to control them in such a manner that fluctuations of the air feel temperature of the room or its active zone do not have any negative effect on human comfort or work productivity;</p> <p>Heating systems in public, manufacturing and industrial buildings shall be designed and installed so that lower capacity than normal under such conditions could be used outside of working hours. The heating system functioning in a lower heating mode shall maintain the air temperature of at least 5°C (where there are no technological requirements to maintain other air temperatures) and before the start of the working hours increase it to the rated temperature level. In residential buildings it shall be possible to control heat flows of both the entire heating system and individual heating appliances. Heating stations of buildings receiving heat from heating networks shall be equipped with heat meters fit for commercial settlements;</p> <p>Heating systems of multi-apartment residential buildings shall be designed so as to allow evaluating heat consumption in each flat without entering it;</p> <p>Heat emission of each heating appliance or groups of appliances shall be controlled in accordance with changing heat emissions in the heated room or the needs of those who use the room;</p> <p>Thermal insulation of the heating and heating pipes shall meet the relevant requirements;</p> <p>The method of ventilation, air conditioning and air-heating as well as system structure shall be selected in accordance with the purpose and specific use of the building to ensure the standard indoor climate and air cleanliness under normal use and outdoor air conditions;</p> <p>Rooms shall be ventilated and heated so that the standard air quality is maintained with energy savings;</p> <p>The automation of heating, ventilation and air conditioning systems shall ensure the reliable and cost-efficient functioning of the systems.</p>
Budget and source of funding	Not established
Implementing authority	Persons installing systems
Supervisory	Ministry of the Environment of the Republic of Lithuania

authority	
Outcomes	Efficient engineering systems of a building reduce the heat demand in buildings and make it possible to consumer less energy. It is impossible to offer a quantitative assessment of the impact of the measure and to calculate energy savings

3.1.7. STR 2.01.09:2005 “Energy performance of buildings. Energy performance certification”

Table 3.1.6. STR 2.01.09:2005 “Energy performance of buildings. Energy performance certification”

Measure	STR 2.01.09:2005 “Energy performance of buildings. Energy performance certification”
Period	Start in 2006
Objective	To ensure that construction sites and their facilities are designed and installed so that taking into account the local climate conditions and the comfort of residents energy consumption is lower. The objective is that new buildings meet the minimal energy performance requirements so that factors enhancing energy performance of buildings are employed in the optimal manner.
Legislation	STR 2.01.09:2012 “Energy performance of buildings. Energy performance certification” approved by Order No D1-624 of the Minister for the Environment of the Republic of Lithuania of 20 December 2005 approving Technical Construction Regulation STR 2.01.09:2005 “Energy performance of buildings. Energy performance certification”
Activities supported	When designing new buildings and buildings of more than 1 000 sq. m of usable surface area undergoing major renovation, their scheduled energy performance must meet the following requirements: new buildings (parts of buildings) must have the energy performance of at least Class C. This requirement applies to new buildings for which the set of design terms and conditions is issued after the entry into force of the Regulation. The energy performance class of buildings (parts of buildings) undergoing major renovation must be at least Class D. Energy performance requirements to buildings are mandatory for: newly constructed buildings; buildings of more than 1 000 sq. m of usable surface area undergoing major renovation; when designing new buildings and buildings of more than 1 000 sq. m of usable surface area undergoing major renovation, their scheduled energy performance must meet the set energy performance requirements. Building certification is mandatory: when constructing, selling or renting buildings; for hotels, administrative, commercial, services, catering, transport, cultural, research, medical treatment and recreational buildings of more than 1 000 sq. m of usable surface area
Budget and source of funding	Not established
Implementing	Ministry of the Environment of the Republic of Lithuania

authority	
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes	It is impossible to offer a quantitative assessment of the impact of the measure and to calculate energy savings

3.1.8. Checking the compliance of heating systems with energy efficiency requirements

Table 3.1.7. Checking the compliance of heating systems with energy efficiency requirements

Measure	Checking the compliance of heating systems with energy efficiency requirements
Period	Start in 2013
Objective	<p>For heating systems of more than 20 kW maximum heating capacity declared by the manufacturer guaranteeing that it can be reached and maintained in the course of uninterrupted operation of the heating boiler with the default heat performance coefficient as well as installations for transmitting the heat carrier in the heating system (water or another liquid) and the heat emitted by the fuel-burning process and heating and consumption installations interconnected by the common heating networks in buildings which are roofed structures using energy to maintain the indoor climate and having one or more rooms or other premises separated by walls and partitions and used as residential premises for humans or for agricultural, commercial, cultural, transport or other activities, except for buildings listed in Article 431(2) of the Law of the Republic of Lithuania on construction, the Regulation sets out that:</p> <ol style="list-style-type: none"> 1. with a view to ensuring that the degree of efficient fuel and energy consumption in heating systems meets the requirements laid down in the Regulation, regular energy efficiency compliance checks are to be carried out for accessible parts; 2. there are alternative compliance-checking measures to evaluate and improve energy efficiency of heating systems, of which the overall result is to be equivalent to the compliance check results.
Legislation	Regulation on the improvement of boiler-heating energy efficiency of heating systems of buildings with nominal outgoing capacity of more than 20 kW approved by Order No 1-256/4-1205 of the Minister for Energy of the Republic of Lithuania and of the Minister for the Economy of the Republic of Lithuania of 10 December 2012 approving regulations
Activities supported	<p>The compliance check covers the following:</p> <ol style="list-style-type: none"> 1. compliance of the accessible parts of the heating system such as heating boilers, circulating pumps, management and control equipment, heat distribution systems and heating appliances with the energy efficiency requirements laid down in the Regulation; 2. the ratio of the product of the heat quantity transmitted to the heat carrier in the heating boiler, the lower calorific value (under constant fuel pressure) and the fuel consumption per unit of time; 3. compliance of the nominal outgoing capacity of the heating boiler with the building's heating needs.

Budget and source of funding	The provision of compliance check services to individual customers is financed with the state funds in accordance with the procedure laid down by the Inspectorate. Other consumers pay for compliance check services provided themselves against contracts with checkers
Implementing authority	Checkers may be self-employed natural persons and the staff of legal persons holding qualification certificates issued by a training institution in accordance with the requirements laid down in the Regulations for the appraisal of employees building and operating energy facilities and installations approved by Order No 4-122 of the Minister for the Economy of the Republic of Lithuania of 24 March 2005 and certificates for operating heating installations and turbines issued by the Inspectorate in accordance with the requirements of the Rules for the appraisal of persons entitled to operate energy installations approved by Order No 1-274 of the Minister for Energy of the Republic of Lithuania of 4 October 2010 and who are registered with the Inspectorate.
Supervisory authority	SEI
Outcomes	It is impossible to offer a quantitative assessment of the impact of the measure and to calculate energy savings

3.1.9. Checking the compliance of air conditioning systems of buildings with energy efficiency requirements

Table 3.1.8. Checking the compliance of air conditioning systems of buildings with energy efficiency requirements

Measure	Checking the compliance of air conditioning systems of buildings with energy efficiency requirements
Period	Start in 2013
Objective	<p>For air conditioning systems consisting of component parts necessary to prepare the air intended to automatically maintain the default indoor climate parameters (the air temperature, relative humidity, traffic intensity) in buildings which are roofed structures using energy to maintain the indoor climate and having one or more rooms or other premises separated by walls and partitions and used as residential premises for humans or for agricultural, commercial, cultural, transport or other activities, except for buildings listed in Article 43¹(2) of the Law of the Republic of Lithuania on construction, the Regulation sets out that:</p> <ol style="list-style-type: none"> 1. with a view to ensuring that the degree of efficient energy consumption in air conditioning systems meets the requirements laid down in the Regulation, regular energy efficiency compliance checks are to be carried out for accessible parts such as ventilators, gears, filters, heat-exchange units, control valves, interconnections, management and control equipment of the air condition system and air ducts installed in air conditioning systems (depending on the specific composition of the air conditioning system); 2. there are alternative compliance-checking measures to evaluate and improve energy efficiency of air conditioning systems, of which the overall result is to be equivalent to the compliance check results.

Legislation	Regulation on the improvement of energy efficiency of air conditioning systems of buildings with nominal outgoing capacity of more than 12 kW approved by Order No 1-256/4-1205 of the Minister for Energy of the Republic of Lithuania and of the Minister for the Economy of the Republic of Lithuania of 10 December 2012 approving regulations
Activities supported	The compliance check covers the following: 1. the performance coefficient of air conditioning equipment; 2. compliance of the maximum cooling capacity of the air conditioning system declared by the manufacturer guaranteeing that it can be reached and maintained in the course of uninterrupted operation with the building's cooling needs.
Budget and source of funding	The provision of compliance check services to individual customers is financed with the state funds in accordance with the procedure laid down by the Inspectorate. Other consumers pay for compliance check services provided themselves against contracts with checkers
Implementing authority	<p>For air conditioning systems containing no fluorinated greenhouse gases listed in Regulation (EC) No 842/2006 of the European Parliament and of the Council of 17 May 2006 on certain fluorinated greenhouse gases (OJ 2006 L 161, p. 1), checkers may be self-employed natural persons and the staff of legal persons holding qualification certificates issued by a training institution in accordance with the requirements laid down in the Regulations for the appraisal of employees building and operating energy facilities and installations approved by Order No 4-122 of the Minister for the Economy of the Republic of Lithuania of 24 March 2005 and certificates for operating heating installations and turbines issued by the Inspectorate in accordance with the requirements of the Rules for the appraisal of persons entitled to operate energy installations approved by Order No 1-274 of the Minister for Energy of the Republic of Lithuania of 4 October 2010 and who are registered with the Inspectorate.</p> <p>For air conditioning systems containing fluorinated greenhouse gases listed in Regulation (EC) No 842/2006, checkers may be self-employed natural persons and the staff of legal persons meeting the conditions laid down in paragraphs 8 or 10 of the Regulation and holding:</p> <ol style="list-style-type: none"> 1. either qualification certificates certifying their qualification to carry out a check of possible leakage of fluorinated greenhouse gases, to install, operate, maintain and/or collect the said gases from such equipment issued by a responsible authority specified in the Procedure for the issuance, suspension, renewal and withdrawal of certificates for handling fluorinated greenhouse gases approved by Order NO D1-420 of the Minister for the Environment of the Republic of Lithuania of 20 July 2009, and certificates for handling fluorinated greenhouse gases issued by the Environmental Protection Agency in accordance with the requirements of the Procedure; 2. or equivalent certificates issued by responsible authorities of other Member States and recognised in the Republic of Lithuania or other documents as set out in the Procedure.

Supervisory authority	State Energy Inspectorate under the Ministry of Energy
Outcomes	It is impossible to offer a quantitative assessment of the impact of the measure and to calculate energy savings

3.1.10. Pollution tax concessions

Table 3.1.9. Pollution tax concessions

Measure	Pollution tax concessions
Period	Start in 2004
Objective	To apply economic measures to encourage polluters to reduce environment pollution, to prevent and manage waste, not to exceed the standard quantities of pollutants emitted into the environments and to raise funds from this tax to implement environmental measures
Legislation	Law No VIII-1183 of the Seimas of the Republic of Lithuania of 13 May 1999 on pollution tax
Activities supported	–
Budget and source of funding	Not established
Implementing authority	Ministry of the Environment of the Republic of Lithuania
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes	It is impossible to offer a quantitative assessment of the impact of the measure and to calculate energy savings

3.1.11. Labelling of products relating to energy consumption

Table 3.1.10. Labelling of products relating to energy consumption

Measure	Labelling of products relating to energy consumption
Period	Start in 2004
Objective	To inform final customers about energy consumed by products, thus enabling consumers to choose the most energy-efficient appliances
Legislation	Order No 163 of the Minister for the Economy of the Republic of Lithuania of 10 May 2002 approving regulations; Technical Regulation on the labelling of consumption of energy and other resources by energy-related products and on the provision of standard information about these products approved by Order No 1-212/4-624 of the Minister for Energy of the Republic of Lithuania and the Minister for the Environment of the Republic of Lithuania of 2 September 2011 approving Technical Regulation on the labelling of consumption of energy and other resources by energy-related products and on the provision of standard information about these products
Activities supported	All products sold, leased, offered for hire-purchase or demonstrated must be labelled with a printed label and contain a table of nominal parameters reflecting the information on the consumption of energy

	<p>and other key resources by the product when operated as well as additional information.</p> <p>Advertising of product models giving information relating to the product's energy consumption or price indicates the product's energy efficiency class.</p> <p>Technical advertising materials of products describing specific technical parameters of the product, technical handbooks and manufacturer's brochures (irrespective of whether they are printed or published online) present information on the product's energy consumption or indicate the product's energy efficiency class</p>
Budget and source of funding	None
Implementing authority	State Non-Food Products Inspectorate under the Ministry of the Economy of the Republic of Lithuania
Supervisory authority	Ministry of Energy of the Republic of Lithuania
Outcomes	Consumption of energy and other key resources declared on product labels and in standardised tables of nominal parameters of products enables the consumer to choose the most efficient products. It is impossible to offer a quantitative assessment of the impact of the measure and to calculate energy savings

3.1.12. Ecodesign

Table 3.1.11. Ecodesign

Measure	Ecodesign
Period	Start in 2005
Objective	Ecodesign seeks to improve the environment-friendliness of products throughout their lifecycle (selection and use of raw materials; production; packaging, transportation and distribution; installation and operation; use; end of lifecycle) by including environmental aspects at the earliest stages of product design
Legislation	Technical Regulation on a system of setting ecodesign requirements to energy-related products and on the application of related implementing measures approved by Order No 4-928 of the Minister for the Economy of the Republic of Lithuania of 17 December 2010 amending Order No 4-438 of the Minister for the Economy of the Republic of Lithuania of 23 October 2007 approving Technical Regulation on a system of setting ecodesign requirements to energy-consuming products and on the application of related implementing measures
Activities supported	All products subject to implementing measures laying down ecodesign requirements to certain products or environmental aspects of these products must be marketed and/or commissioned only when in line with these measures and labelled with the CE compliance mark
Budget and source of funding	None
Implementing	Ministry of the Economy of the Republic of Lithuania

authority	
Supervisory authority	Ministry of the Economy of the Republic of Lithuania
Outcomes	It is impossible to offer a quantitative assessment of the impact of the measure and to calculate energy savings

3.1.13. Information, educational and training activities

Table 3.1.12. Information, educational and training activities

Measure	Information, educational and training activities
Period	Start in 1996
Objective	To inform, educate and train energy consumers in the area of energy efficiency improvement
Legislation	–
Activities supported	<ul style="list-style-type: none"> ▪ Energy companies must provide information to energy consumers on efficient consumption of energy resources and energy, safe and efficient use of energy facilities and installations, energy facilities and installations under construction and reconstruction, energy prices and services provided to energy consumers; ▪ Information, methodological and organisational support provided to cooperating Lithuanian and EU business entities and research and consultancy institutions involved in EU programmes aiming at the improvement of the efficiency of use of energy and energy resources; ▪ Final energy consumers are consulted and informed, training is organised for them in the area of energy efficiency improvement; ▪ Information is published on ongoing programmes, consultations and training sessions offered as well as on how to use programme measures; ▪ The drafting and printing of information materials on saving energy resources and energy is organised; ▪ Energy saving ideas are disseminated on TV and radio; ▪ Conferences, seminars, competitions and exhibitions are organised enhancing the capacity of the country's specialists and the public to make more efficient use of energy resources and energy; ▪ Recommendations on the application of the energy efficiency improvement criterion during public procurement procedures; ▪ Exchange of good practices in efficient consumption of energy and energy resources between public authorities; ▪ Publishing of good practices in efficient consumption of the public sector's energy and energy resources in mass media; ▪ Organisation and conducting of energy audits in public buildings and implementation of measures recommended in the audit report; ▪ Organisation and implementation of energy management in public buildings and industry; ▪ Sample contracts on financial measures between prospective customers and providers of energy services and energy efficiency improvement in buildings

Budget and source of funding	None
Implementing authority	–
Supervisory authority	Ministry of Energy of the Republic of Lithuania, Ministry of the Environment of the Republic of Lithuania and Ministry of the Economy of the Republic of Lithuania
Outcomes	The provision of information on energy efficiency encourages consumers to save energy and implement energy-saving measures. It is impossible to offer a quantitative assessment of the impact of the measure and to calculate energy savings

See more on informing the public on matters of energy efficiency in Annex 3 to the Action Plan.

3.1.14. Qualification and certification systems

Table 3.1.13. *Qualification and certification systems*

Measure	Qualification and certification systems
Period	Start in 2005
Objective	To create conditions for consumers to use services of specialists of adequate qualifications ensuring the quality of the services
Legislation	<p>Procedure for and conditions of conducting audits of energy consumption in buildings, installations and technological processes and for the training and appraisal of specialists conducting audits of energy consumption in buildings, installations and technological processes approved by Order No 1-148 of the Minister for Energy of the Republic of Lithuania of 2 August 2012 approving the Procedure for and conditions of conducting audits of energy consumption in buildings, installations and technological processes and for the training and appraisal of specialists conducting audits of energy consumption in buildings, installations and technological processes;</p> <p>Technical Construction Regulation STR 1.02.06:2012 “Qualification requirements to and the Procedure for the appraisal and entitlement of managers of the key areas of technical construction-related activity and spatial planning specialists” approved by Order No D1-601 of the Minister for the Environment of the Republic of Lithuania of 10 November 2007 approving Technical Construction Regulation STR 1.02.06:2007 “Procedure for acquiring the right to act as managers of the key areas of technical construction-related activity and for the appraisal of spatial planning specialists”;</p> <p>Technical Construction Regulation STR 1.02.09:2011 “Procedure for acquiring the right to conduct energy performance certification of buildings” approved by Order No D1-641 of the Minister for the Environment of the Republic of Lithuania of 28 December 2005 approving Technical Construction Regulation STR 1.02.09:2005 “Procedure for acquiring the right to conduct energy performance certification of buildings”;</p>

	Procedure for the appraisal of the staff constructing and operating energy facilities and installations approved by Order No 1-220 of the Minister for Energy of the Republic of Lithuania of 7 November 2012 approving the Procedure for the appraisal of the staff constructing and operating energy facilities and installations										
Activities supported	<p>With a view to ensuring the quality provision of services relating to energy consumption, the following persons are appraised:</p> <ul style="list-style-type: none"> • specialists conducting energy audits in buildings, technological processes and installations; • managers of the key areas of technical construction-related activity and spatial planning specialists; • specialists conducting energy performance certification of buildings; • specialists assembling, testing, fine-tuning, commissioning and operating energy installations and managers organising these works 										
Budget and source of funding	None										
Implementing authority	Ministry of the Environment of the Republic of Lithuania and Ministry of Energy of the Republic of Lithuania										
Supervisory authority	State enterprise the Construction Products Certification Centre and the state enterprise the Energy Agency										
Outcomes	<p>It is impossible to measure or calculate and verify the impact of the measure. Quality services of qualified specialists contribute to final energy savings.</p> <p>Auditor's qualifications to conduct energy audits granted by the state enterprise the Energy Agency: in 2010 – 53, 2011 – 6, 2012 – 8, 2013 – 8.</p> <p>Certificates issued by the state enterprise the Construction Products Certification Centre to experts of energy performance certification of buildings (published only subject to experts' consent): in 2007 – 123, 2008 – 85, 2009 – 113, 2011 – 17, 2012 – 107, 2013 – 121.</p>										
	Distribution of buildings to which energy performance certificates are granted by energy performance classes in 2007-2010	Energy performance class							Total		
		A	B	C	D	E	F	G			
		2007	-	183	178	17	11	-		-	389
		2008	1	444	292	55	36	1		-	829
		2009	6	629	672	191	118	13		10	1 639
2010	2	519	586	117	93	6	2	1 325			
2 325 energy performance certificates were granted to buildings in											

	2011, in 2012 – 4 078 energy performance certificates of buildings, and in 2013 – 39 977 certificates
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In accordance with STR 1.02.06:2012 “Qualification requirements to and the Procedure for the appraisal and entitlement of managers of the key areas of technical construction-related activity and spatial planning specialists”, professional knowledge of civil engineers seeking to acquire the right to become a manager of the key areas of technical construction-related activity may be evaluated by universally recognised professional partnerships, unions, associations and other public organisations or training establishments registered in accordance with the statutory procedure.

This mandate is given to them by the Minister of the Environment of the Republic of Lithuania by issuing orders approving programmes for professional examinations. Apart from other things, authorised organisations perform the following functions: they collect appraisal documents (applications); organise professional development training; organise professional examinations; issue professional evaluation documents (reports/certificates) and forward appraisal documents to the Construction Products Certification Centre.

Authorised organisations entitled to test professional knowledge of civil engineers (in the field of energy) are the Lithuanian Association of Civil Engineers, the Lithuanian Association of Heating Equipment Engineers, the Lithuanian Association of Plumbers, the public body the National Training Centre for Energy Specialists and AB Lietuvos dujos. The Institute of Architecture and Construction of Kaunas University of Technology continuously organises professional development courses for managers and specialists of the key areas of technical construction-related activity.

The appraisal of experts in energy performance certification of buildings is a procedure through which graduates of the training course successfully passing the qualification test acquire the right to conduct energy performance evaluations of buildings and issue certifying documents. In Lithuania the training of these experts is organised by designated training establishments.

The designated training establishments are the Institute of Architecture and Construction of Kaunas University of Technology and the public body the Quality Management Centre of Vilnius Gediminas University of Technology.

An expert in energy performance certification of buildings having received a qualification certificate and before issuing first energy performance certificates must approve their rules of procedure laying down the procedure of work and routines to be performed. In the course of their activities a certification expert must follow the principle of equality and create non-discriminatory conditions for all customers and be impartial.

Energy audit. Subject to orders of the Minister for Energy of the Republic of Lithuania:

- the Department of Energy in Buildings of the Faculty of Civil Engineering of Vilnius Gediminas University of Technology is entitled to organise training courses for specialists conducting energy audits in buildings in accordance with a training programme evaluated and approved;
- the public body the National Training Centre for Energy Specialists is entitled to organise training courses for specialists conducting energy audits in buildings in accordance with a training programme evaluated and approved.

On their websites authorised and designated training establishments entitled to organise professional development training courses and test professional knowledge publish invitations to training courses for certain specialists listing the requirements to specialists and general information on the courses organised.

Information on the national plan for improving technical competences is given below. Workers employed in the construction sector lack knowledge and skills relating to the construction of energy-efficient buildings. To achieve energy efficiency targets by 2020, some of the existing workers will have to undergo additional training to fill gaps in their knowledge and skills. The lack of knowledge and skills must be replenished by using updated or new training programmes, providing additional training to teachers and upgrading training facilities. Training establishments are urged to closely cooperate with construction and equipment installation enterprises, suppliers, professional associations and higher education institutions.

To improve the level of competence of workers, Lithuania is implementing the project BUILD UP SKILLS – LT aiming at drafting a professional development plan for construction workers needed to implement energy performance targets in buildings by 2020. Some of the measures planned are fit for the professional development of not only blue-collar workers but of construction specialists of all levels (participants in the construction sector). The Guidelines for the professional development of workers of Lithuania's construction sector seeking energy efficiency targets of 2020 are ready³.

The Guidelines for the professional development of workers define four areas of professional development activities:

1. *Dissemination of information and incentives.* Workers need to be trained for the implementation of the 2020 targets, in particular, by improving the level of existing workers. The need for professional development must be understood by representatives of all construction areas from users of buildings and energy to performers of all works, i.e. workers. To that end, there is a need to publish information on new requirements of the EU directives and Lithuanian legislation pertinent to their implementation, the binding nature and stages of these requirements, economic benefits of energy efficiency in buildings and of renewable energy, importance to environment protection including the effect on climate change and rational use of natural resources as well as the improvement of the country's energy independence;

2. *Adaptation of the vocational education and training system to new needs.* The vocational education and training system must focus on the need for new knowledge and skills and be prepared for the professional development process training existing and new workers in accordance with training programmes meeting the latest labour market needs. To implement this objective, there is a need to update the legal basis for drafting training programmes, i.e. to draw up vocational education and training standards for specialists in construction and in assembling renewable energy production installations, to draft or update vocational education and training programmes, to draft a procedure for modular training, etc.

3. *Implementation of professional development measures.* For the successful implementation of the professional development programme envisaged, what is needed is, first and foremost, to enhance the attractiveness of blue-collar occupations in the construction sector and in the area of the installation of renewable energy sources to urge as many people as possible to choose these professions and so that existing workers see long-term prospects for themselves in these areas, are interested in professional development hoping for better work and remuneration conditions and clearly see life-long learning prospects and professional development opportunities. Vocational education and training establishments must use updated (or new) training programmes adapted to the changing market needs. To ensure professional development, it is also important to make use of the non-formal education system as this way the labour market usually gets crucial knowledge about the use

³ Build up skills – LT Initiative. Guidelines for the professional development of workers of Lithuania's construction sector seeking energy efficiency targets of 2020. Vilnius, 2013
http://energinisefektyvumas.lt/?page_id=869

of new materials, technologies and equipment. By making adequate forecasts of the need for workers for the construction of energy-efficient buildings and the use of renewable energy sources and the qualifications needed for these jobs, the labour exchange can introduce constructive corrections to professional development or retraining programmes for the jobless, thus driving more people towards promising training opportunities.

4. *Quality assurance and development of the qualifications database.* A publicly accessible and easy-to-find information system is used to facilitate and promote professional development. It provides up-to-date information about the need for workers, training opportunities and construction sites. It ensures the availability of the latest information on professional standards, training programmes, worker qualifications and appraisal and certification of enterprises and a monitoring possibility to stakeholders.

To achieve the objectives and activities provided for in the Guidelines, it is recommended to unite organisational and financial resources of several institutions and implement joint projects.

Currently, preparations for the second phase of the project BUILD UP SKILLS (the professional development scheme) are under way. The objective of this phase is to create a system for acquiring and recognising competences required for the construction, renovation and operation of highly energy-efficient houses and for installing renewable energy sources that is to include the following:

- the development of a voluntary system for the acquisition and testing of worker competences;
- the creation of training programmes and a system for the appraisal of teachers;
- a system test involving the training of a group of teachers and the training and appraisal of workers of various occupations in accordance with accredited programmes and the issuing of a certificate of competences to them;
- popularising training schemes and the new system.

3.1.15. Obstacles to legal regulation that will limit energy efficiency

Obstacles to legal regulation that may limit the improvement of energy efficiency in Lithuania⁴:

1. State or municipal budgetary institutions (i.e. the actual users of public buildings) annually receive funding from the budget. Appropriations from state or municipal budgets are transferred to accounts of the said institutions (for salaries) or to suppliers (for covering specific costs) without exceeding the annual appropriations or other limits of the ongoing programmes. The State Treasury Department transfers appropriations destined to state budgetary institutions directly to suppliers paying them for goods, works and services provided to the budgetary institutions. So, in many cases state or municipal budgetary institutions do not have the right of discretion in using their annual appropriations, and the unused appropriations must be returned to state or municipal budgets. Given this situation, the actual users of public buildings are not financially motivated to participate in public procurement procedures involving energy performance contracts.
2. The Law on public procurement is not adjusted to cover the conclusion of long-term contracts for energy efficiency services. In accordance with Article 18 of the Law on public procurement, the period of a public procurement contract may be no longer

⁴ UAB KPMG Baltics, Glimstedt, Lawyers Firm, UAB Ekotermija. 2014 m. A study of the market demand for energy efficiency projects in the public sector of Lithuania.

than 3 years unless otherwise explicitly set out in legislation. Still, the conclusion of an energy performance contract on the basis of the public-private partnership calls for complicated time-consuming procedures. Consent provided by the Public Procurement Office to extend the period of a public procurement contract is to be seen as an exceptional measure. Moreover, energy efficiency projects (in the area of the renovation of public buildings and in the area of the upgrading of street lighting) are not included in the ongoing long-term programmes approved or the National Investment Programme. Thus, there are no existing legal preconditions for concluding public procurement contracts for energy efficiency services for longer than 3 years.

3. The Law on public procurement makes it more difficult to organise public procurement procedures for several objects (goods, works and services), and a joint public procurement procedure limits the number of prospective participants. Contracting authorities intending to participate in a procedure for several objects may have to prove that it has been impossible to avoid a procedure covering several objects. The legislation in effect does not offer an approved universal definition of an energy performance contract or a definition of such a contract adapted for public procurement.

Recommended solutions to eliminate these obstacles

For obstacle No 1: to amend the Law of the Republic of Lithuania on the budget structure by introducing an exception that appropriations funds saved by a budgetary institution when implementing energy efficiency measures should not be returned to accounts of the state or municipal treasury. It is also advisable to amend the Rules for dispensing state budget funds from the State Treasury account approved by Order No 195 of the Minister for Finance of 21 July 2000 introducing an exception that appropriations funds to be used to improve energy efficiency in public buildings could be used by the actual users of public buildings, and the surplus of these funds could be left in their discretion.

For obstacle No 2: the Government or an authority authorised thereby could approved a programme for long-term energy efficiency in public buildings and public infrastructure (street lighting) specifically mentioning that energy savings must be ensured wherever a long-term energy performance contract is used. Under the programme, support should be provided for the implementation of the energy performance contract and be unrelated to construction works. Another suggestion is to consider a proposal to amend Article 3 of the Procedure for setting criteria for periods of public procurement contracts concluded for longer than 3 years and cases where such contracts may be concluded approved by Resolution No 432 of the Government of the Republic of Lithuania of 5 May 2006 approving the Procedure for setting criteria for periods of public procurement contracts concluded for longer than 3 years and cases where such contracts may be concluded by including the following provision in the list of exceptions subject to which public contracts for goods, works or services may be concluded for longer than 3 years: “purchasing energy efficiency improvement services”.

For obstacle No 3: having regard to Article 2(27) of Directive 2012/27/EU, to consider introducing a definition of an energy performance contract in the legislation of the Republic of Lithuania; to consider compiling a catalogue of standard energy efficiency improvement measures and savings ensured thereby.

3.2. Energy efficiency improvement measures in the household sector

This Chapter presents a description of measures completed, ongoing and planned in the household sector, energy savings by 2012 and energy savings by 2020. The savings are calculated using the bottom-up approach.

Table 3.2.1. Summary results of measures completed, ongoing and planned in the household sector

Table No	Measure	Period, years	Energy savings by the end of 2012, GWh	Energy savings by the end of 2020, GWh
3.2.2	Programme for renovating (upgrading) multi-apartment buildings	2005-2020	200.66	1 000⁵
3.2.3	Programmes for the development of municipal problem areas for 2011-2013	2008-2013		
3.2.4	EU Structural Funds for 2007-2013 (Measure “Promoting the upgrading of multi-apartment buildings”)	2007-2013		
3.2.5	Special Climate Change Programme	2010-	n/a	n/a
3.2.6	Ignalina Programme for 2007-2013	2007-2013	n/a	n/a
–	EU Structural Funds for 2014-2020 (new measure) ⁶	2014-2020	not applicable	n/a
TOTAL:			200.66	1 000

Table 3.2.2. Programme for renovating (upgrading) multi-apartment buildings

Measure	Programme for renovating (upgrading) multi-apartment buildings
Period	2005-2020
Objective	To ensure the financing and implementation of projects for the renovation (upgrading) of multi-apartment buildings, to provide preferential loans and other state aid provided for in the laws to owners of flats and other premises and to promote the initiative of owners of flats and other premises to implement energy-saving measures. To ensure that the public received information, education and training on matters of energy performance improvement and renovation (upgrading) of buildings and energy savings

⁵ In accordance with the information supplied by the Ministry of the Environment of the Republic of Lithuania, the energy savings planned since the start of the Programme for the renovation (upgrading) of multi-apartment buildings (Table 3.2.2) (2005) envisaging that under the Programmes for the development of municipal problem areas for 2011-2013 (Table 3.2.3) the renovation of 307 multi-apartment buildings out of 314 multi-apartment buildings under renovation (upgrading) will be completed in 2013-2014;

⁶ The plan is to invest about 14% of the EU Structural Funds allocated for the period of 2014-2020 in the areas of energy efficiency and renewable energy.

Legislation	Programme for renovating (upgrading) multi-apartment buildings, approved by Resolution No 1213 of the Government of the Republic of Lithuania of 23 September 2004
Activities supported	<p>State-supported measures for renovating (upgrading) multi-apartment buildings:</p> <p><u>Energy efficiency improvement measures:</u> restructuring or replacement of heating and hot water systems (replacement or restructuring of the heating station or boiler-house (individual boilers) and hot water facilities as well as installation of renewable energy sources (solar, wind, geothermal, biofuel, etc.); installation of balance valves on racks; improvement of thermal insulation of pipes; replacement of heating appliances and pipes; installation of individual heat meters or distributors and/or thermostatic valves in flats and other premises); restructuring, replacement or installation of ventilation and recuperation systems; roof insulation as well as laying a new surface coating or building a new sloping roof (except for the finishing of attic space) and/or insulation of ceiling under the floor of the ventilated sloping roof; insulation of facade walls (including wall bases) including elimination of construction defects in walls (wall bases) and finishing of the paving; glazing of balconies or terraces, including the reinforcement of the existing structures of balconies or terraces and/or installation of a new glazing structure in accordance with the same design project; replacement of the entrance doors of entrance halls and wind-porches including related finishing works, repairs to entrance halls and adapting them to the needs of the disabled; replacement of windows in flats and other premises with windows of lower heat-conductivity; insulation of cellar ceilings; renovation (upgrading) of lifts replacing them with more energy-efficient lifts and making lifts accessible to the disabled.</p> <p><u>Other measures for renovating (upgrading) multi-apartment buildings:</u> replacement and/or restructuring of other common engineering systems of the building (the sewerage system as well as local facilities belonging to the house, electric installation, fire safety installations, potable water pipes and installations) and repairs to the drainage system</p>
Budget and source of funding	Funds of flat owners in multi-apartment buildings, state and municipal budgets, the EU Structural Funds, Ignalina Programme for 2007-2013 and other funds
Implementing authority	Ministry of the Environment of the Republic of Lithuania, the Housing and Urban Development Agency (BETA since 2013), municipalities and flat owners
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes of the measure	<p>Implementation monitoring data for the Programme for renovating (upgrading) multi-apartment buildings:</p> <p>http://www.atnaujinkbusta.lt/index.php/lt/p/atnaujink-busta/apie-programa/stebesena</p> <p><u>Data for 2012:</u></p>

	<p>37 multi-apartment buildings with a total usable surface area of 87 036 130 m² were renovated. Estimated heating energy savings are 8.57 GWh/year. The reduction in greenhouse gas emissions is 1 930 t/year.</p> <p><u>Data for 2005-2012:</u></p> <p>479 multi-apartment buildings with a total usable surface area of 1 276 898 790 m² were renovated. Estimated heating energy savings are 82.26 GWh/year. The reduction in greenhouse gas emissions is 20 880 t/year.</p> <p><u>Data for 2013:</u></p> <p>22 multi-apartment buildings were renovated. Estimated heating energy savings are 4.87 GWh/year. The reduction in greenhouse gas emissions is 1 140 t/year.</p> <p>In 2013 investment plans for renovating 885 multi-apartment buildings were approved aimed at reducing the buildings' estimated heating energy consumption by 330.8 GWh/year. The reduction in greenhouse gas emissions is to be 77 080 t/year. These investment plans are at various stages of implementation, and the list is being continually added to as new investment plans are approved.</p> <p><u>Outcomes of the measures implemented at the initiative, and with the funds, of managers of common facilities and residents of multi-apartment buildings:</u></p> <p>By the beginning of 2011, about 3 000 individual measures had been implemented (upgrading of the heating system, replacement of windows in flats and other premises, replacement of windows and doors in entrance halls, insulation of walls, insulation of cellar ceilings, replacement of lifts). Estimated heating energy savings are 60 GWh. The reduction in greenhouse gas emissions is 13 980 t.</p> <p>In 2011, 3 599 individual energy-saving measures were implemented. According to BETA's calculations, heating energy consumption in multi-apartment buildings in 2011 was reduced by 51.2 GWh, while greenhouse gas emissions were reduced by 11 940 tonnes.</p> <p><u>New model of the Programme for renovating (upgrading) multi-apartment buildings.</u></p> <p>In accordance with the new model of the Programme, municipal energy efficiency improvement programmes were approved in 2013.</p> <p>Under this model, municipalities evaluate and select multi-apartment buildings consuming energy with the least efficiency in their territory and submit the information collected to the Ministry of the Environment of the Republic of Lithuania. An energy audit is conducted and an investment plan is drawn up for each building selected. Funds are borrowed by a programme administrator appointed by the municipality rather than flat owners, as is usually the case (and not municipalities). The organisation and quality of works as well as the future results are taken care of by the municipality (the programme administrator appointed).</p>
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	At present, 58 of the country's 60 municipalities are participating in the programme, with 1 680 multi-apartment buildings on their lists. List of Lithuania's municipalities: http://www.lsa.lt/lt/nariai-savivaldybes
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Table 3.2.3. Programmes for the development of municipal problem areas for 2011-2013

Measure	Programmes for the development of municipal problem areas for 2011-2013
Period	2011-2013 (before 2011, programmes for the development of municipal problem areas for 2008-2010 were implemented)
Objective	To develop the urban infrastructure in an integrated manner and to increase the attractiveness of the living environment. To renovate multi-apartment buildings and develop social housing. To develop the residential infrastructure in rural areas in an integrated manner. To promote community initiatives of the population. To develop social infrastructure
Legislation	Programmes for the development of municipal problem areas for 2011-2013 approved by Resolution No 588 of the Government of the Republic of Lithuania of 18 May 2011
Activities supported	Renovation of multi-apartment buildings (in particular, to improve their energy efficiency) and renovation of social housing in multi-apartment buildings undergoing renovation. Activities supported: upgrading of multi-apartment buildings (major repairs or reconstruction of heating systems (except for radiators in flats), cold and hot water supply systems of buildings, sewage collectors of buildings (except for sanitary appliances), indoor electricity supply systems (except for lighting appliances in flats), fire-safety alarm systems, natural ventilation systems and waste removal systems, replacement of windows and entrance doors, major repairs or replacement of lifts, glazing of balconies (terraces) in accordance with a common design project to glaze all balconies (terraces) of the building, major repairs or reconstruction of roofs – additional insulation, including the installation of new insulated sloping roofs (except for the finishing of premises under the roof) and insulation of facade walls). Reconstruction of existing buildings and premises or renovation (upgrading) of social housing in a multi-apartment building (buildings) undergoing renovation under the implementing measure VP3-1.1-VRM-03-R “Renovation of multi-apartment buildings, in particular, to improve their energy efficiency” of Priority 1 “Local and urban development, conservation of cultural heritage and nature and adapting them to tourism developments” of the Operational Programme for Promotion of Cohesion for 2007-2013
Budget and source of funding	EU Structural Funds, funds of other legal and/or natural persons
Implementing authority	CPMA (EU support) and municipalities
Supervisory authority	Ministry of the Interior of the Republic of Lithuania and municipalities

Outcomes	<p>In accordance with the data supplied by the Ministry of the Interior of the Republic of Lithuania, 43 multi-apartment buildings were renovated in 2011-2012 including 33 buildings in 2012 alone. The total energy consumption in 2011-2012 was reduced by about 7.68 GWh/year including by about 4.70 GWh in 2012 alone. By 2012, 11 projects were completed covering the renovation of 5 social housing units and the creation of 89 new social housing units.</p> <p>In accordance with estimates of the Ministry of the Environment of the Republic of Lithuania, carbon dioxide emissions into the atmosphere in 2011-2012 were reduced by 1 678 tons including 1 118 tons in 2012 alone.</p> <p>Moreover, renovation (upgrading) works of 314 multi-apartment buildings are still ongoing under these programmes.</p>
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In accordance with the data supplied by the Ministry of the Environment of the Republic of Lithuania, the renovation (upgrading) of multi-apartment buildings (taking into account the data given in Tables 3.2.2 and 3.2.3) ensured total heating energy savings of 200.66 GWh by the end of 2012 and reduced carbon dioxide emissions into the atmosphere by 48 480 tons.

Table 3.2.4. EU Structural Funds for 2007-2013

Measure	EU Structural Funds for 2007-2013 (Measure “Promoting the upgrading of multi-apartment buildings”)
Period	2007-2013
Objective	To encourage owners of multi-apartment buildings to upgrade their houses inefficiently consuming energy
Legislation	Resolution No 787 of the Government of the Republic of Lithuania of 23 July 2008 approving the annex to the Operational Programme for Promotion of Cohesion
Activities supported	Implementation of measures to promote the upgrading of multi-apartment buildings (visibility actions relating to the upgrading of multi-apartment buildings, information and consultation of flat owners of multi-apartment buildings, drafting of standard design projects, monitoring of the results of completed projects, etc.)
Budget and source of funding	EU Structural Funds (up to LTL 30 000 000) and state budget funds (LTL 5 294 188). The total project value is LTL 35 294 118
Implementing authority	Environmental Projects Management Agency of the Ministry of the Environment of the Republic of Lithuania
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes of the measure	2 projects were funded under the implementing measure VP3-1.1-AM-02-V-01 “Promotion of the upgrading of multi-apartment buildings” of Priority 1 “Local and urban development, conservation of cultural heritage and nature and adapting them to tourism developments” of the Operational Programme for Promotion of Cohesion. The project “Promotion of the upgrading of multi-apartment buildings, Phase I” was completed in 2009. The project “Promotion of the upgrading of multi-apartment buildings,

	Phase II” was started in 2012. The funding allocated was LTL 18 601 220 including the EU contribution of LTL 15 811 040
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Table 3.2.5. Special Climate Change Programme

Measure	Special Climate Change Programme
Period	Since 2010
Objective	<p>Improvement of energy consumption and generation efficiency: upgrading of residential houses and public buildings, other measures that are the most efficient in reducing greenhouse gas emissions in the sectors of energy, industry, construction, transport, agriculture, waste management and others.</p> <p>Promotion of the use of renewable energy sources and implementation of environment-friendly technologies including high-efficiency cogeneration.</p> <p>Implementation of measures relating to national climate change policy-making and implementation including public awareness raising and education measures, mitigation of and adaptation to climate change on national and international levels, programme administrating funds and other measures</p>
Legislation	Law No XI-329 of the Republic of Lithuania of 7 July 2009 on financial instruments for climate change management
Activities supported	<p>Major repairs or reconstruction of heating and hot water systems; replacement or restructuring of ventilation and air conditioning systems; replacement of windows and entrance doors; insulation of the roof including the construction of a new sloping roof (except for the finishing of the space under the roof) and other costs relating to the roof replacement; insulation of walls and ceilings; insulation of partitions; insulation of floors over the cellar and insulation of floors on the ground; insulation of wall bases; installation of a ventilation system with recuperation elements.</p> <p>Installation of solar energy collectors or low-capacity solar plants (energy generated not for sale). Installation of wind energy sources (energy generated not for sale). Installation of geothermal energy sources (energy generated not for sale). Replacement of boilers running on fossil fuels (fuel oil, shale oil, natural gas and coal) or other environment-polluting energy sources with boilers running on biofuel in heating systems of buildings</p>
Budget and source of funding	<p>In accordance with the estimate of the absorption of funds of the Special Climate Change Programme for 2013, the programme funds amount to LTL 378.82 million. They are/are to be distributed as follows:</p> <ul style="list-style-type: none"> ➤ renovation (upgrading) of one- or two-flat residential houses of natural and private legal persons ensuring Class C of energy performance and reducing energy consumption by at least 20% – LTL 3.38 million; ➤ in accordance with the implementation and financing model of the Programme for renovating (upgrading) multi-apartment buildings developed in accordance with JESSICA initiative of

	<p>the European Commission, the European Investment Bank and the Council of Europe Development Bank, additional funding of completed investment projects for upgrading multi-apartment buildings provided that the result is at least Class D of energy performance and estimate heating energy consumption is reduced by at least 40% as compared to estimated heating energy consumption prior to the project implementation – LTL 40 million;</p> <ul style="list-style-type: none"> ➤ use of renewable energy sources (solar, wind, biofuel, geothermal energy, etc.) in individual residential buildings – LTL 2 million. <p>In accordance with the estimate of the absorption of funds of the Special Climate Change Programme for 2014, the programme funds amount to LTL 435.49 million. They are to be distributed as follows:</p> <ul style="list-style-type: none"> ➤ renovation (upgrading) of public and residential buildings (for various social groups) reducing energy consumption costs by at least 40% – LTL 71 million; ➤ renovation (upgrading) of one- or two-flat residential houses of natural and private legal persons ensuring Class C of energy performance and reducing energy consumption by at least 20% – LTL 3.47 million; ➤ use of renewable energy sources (solar, wind, biofuel, geothermal energy, etc.) in individual residential buildings – LTL 3.1 million
Implementing authority	LEIF
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes	<p>2012: http://www.laaif.lt/index.php?136533252</p> <ul style="list-style-type: none"> ➤ 62 projects were funded under the measure “Renovation (upgrading) of one- or two-flat residential houses built in accordance with technical construction regulations in force until 1993 and owned by natural and private legal persons ensuring Class C of energy performance and reducing energy consumption by at least 20%”. The total amount of investment is LTL 1 012 910. <p>In accordance with the information supplied by the LEIF, 293 projects will be implemented under this measure by 2014.</p> <ul style="list-style-type: none"> ➤ 39 projects were financed under the measure “Use of renewable energy sources (solar, wind, biofuel, geothermal energy, etc.) in individual residential buildings built in accordance with technical construction regulations in force until 1993”. The total amount of investment is LTL 270 105. <p>In accordance with the information supplied by the Ministry of the Environment of the Republic of Lithuania, in 2012 the funding of all measures amounted to LTL 202.8 million</p>

Table 3.2.6. Ignalina Programme for 2007-2013

Measure	Ignalina Programme for 2007-2013
Period	2007-2013
Objective	To improve energy efficiency in multi-apartment residential buildings
Legislation	Rules for the implementation of Ignalina Programme for 2007-2013 in Lithuania approved by Order No 1-185/1K-360 of the Minister for Energy of the Republic of Lithuania and of the Minister for Finance of the Republic of Lithuania of 8 October 2009
Activities supported	Reconstruction of multi-apartment residential buildings, upgrading of energy systems of buildings and improvement of energy properties in Visaginas, Ignalina and Zarasai Municipalities
Budget and source of funding	The measure is funded by the Ignalina Nuclear Power Plant Decommissioning Fund
Implementing authority	CPMA and Visaginas, Ignalina and Zarasai Municipalities
Supervisory authority	Ministry of Energy of the Republic of Lithuania and Ministry of Finance of the Republic of Lithuania
Outcomes	In accordance with the information supplied by the CPMA (http://new.cpva.lt/lt/dokumentai/projektu-dokumentai/51/p0.html), 2 projects were funded in 2012: in Ignalina Region Municipality and in Zarasai Region Municipality

3.3. Energy efficiency improvement measures in the services sector

This Chapter presents a description of measures completed, ongoing and planned in the services sector, energy savings by 2012 and energy savings by 2020. The savings are calculated using the bottom-up approach.

Table 3.3.1. Summary results of measures completed, ongoing and planned in the services sector

Table No	Measure	Period, years	Energy savings by the end of 2012, GWh	Energy savings by the end of 2020, GWh
3.3.2	Renovation of heated and/or cooled buildings owned by the state and used by public authorities and bodies that are public administration entities	2014-2020	not applicable	50.00
3.3.3	EU Structural Funds for 2007-2013 (Operational Programme for Promotion of Cohesion)	2007-2013	119.17	over 200.00⁷
3.3.4	Programme for upgrading educational institutions	2009-2016	119.17⁸	n/a
3.3.5	Programme for renovating and upgrading of libraries for 2007-2013	2003-2013		n/a
3.3.6	Programme for upgrading cultural centres for 2007-2020	2007-2020		n/a
3.3.7	Programme for upgrading museums for 2007-2015	2007-2015	n/a	n/a
3.3.8	EEA and Norwegian Financial Mechanisms	2004-2014	n/a	n/a
3.3.9	Ignalina Programme for 2007-2013	2007-2013	n/a	n/a
3.3.10	EE requirements to public procurement procedures	2008-	n/a	n/a
3.3.11	Green procurement	2008-	n/a	n/a
3.3.12	Special Climate Change Programme	2010-	n/a	n/a
–	EU Structural Funds for 2014-2020 (new measure) ⁹	2014-2020	not applicable	n/a
TOTAL:			119.17	250.00

Table 3.3.2. Renovation of public buildings

⁷ Source: Lithuania: National Reform Agenda for 2014.

⁸ These energy savings are estimated under Measure “EU Structural Funds for 2007-2013 (Operational Programme for Promotion of Cohesion)” (Table 3.3.3);

⁹ The plan is to invest about 14% of the EU Structural Funds allocated for the period of 2014-2020 in the areas of energy efficiency and renewable energy.

Measure	Renovation of heated and/or cooled buildings owned by the state and used by public authorities and bodies that are public administration entities
Period	2014–2020
Objective	To ensure that starting from 2014, 3% of the surface area of public buildings are renovate annually
Legislation	Methodology for compiling the list of heated and/or cooled buildings owned by the state and used by public authorities and bodies that are public administration entities that are fit for renovation approved by Order No 1-47 of the Minister for Energy of the Republic of Lithuania of 13 March 2014
Activities supported	<p>The list of public buildings specifies the total cumulative surface area of the premises in all public buildings incompliant with energy performance requirements:</p> <ul style="list-style-type: none"> ➤ before 1 July 2015 for buildings of the total usable surface area of or more than 500 sq. m; ➤ after 1 July 2015 for buildings of the total usable surface area of or more than 250 sq. m. <p>When establishing the annual 3% indicator for the renovation of public buildings, the indicator includes the following:</p> <ul style="list-style-type: none"> ➤ the total surface area of buildings used or purchased that have replaced buildings demolished during any of the previous two years; ➤ the total surface area of buildings used or purchased that have been sold, demolished or unused during any of the previous two years because of more intensive use of other buildings. <p>In accordance with the data of the list of public buildings, buildings are selected:</p> <ul style="list-style-type: none"> ➤ by purpose of use of these buildings listed in STR 1.01.09:2003 “Classification of structures by purpose” approved by Order No 289 of the Minister for the Environment of the Republic of Lithuania of 11 June 2003 approving Technical Construction Regulation STR 1.01.09:2003 “Classification of structures by purpose”: residential (for various social groups – dormitories, child care homes, shelters, care homes, family homes, etc.); administrative; educational; medical treatment; cultural and specialised buildings; ➤ where they fail to meet minimal energy performance requirements under the provisions of STR 2.01.09:2012 “Energy performance of buildings. Energy performance certification” approved by Order No D1-674 of the Minister for the Environment of the Republic of Lithuania of 21 August 2012 amending Technical Construction Regulation STR 2.01.09:2005 “Energy performance of buildings. Energy efficiency certification”. <p>A summary table of the selected public buildings is compiled listing building in the descending order by actual comparative heating</p>

	energy consumption in the buildings
Budget and source of funding	Funds to be used are state and private (ESCO) funds and EU Structural Funds
Implementing authority	State enterprise the Energy Agency and Ministry of Energy of the Republic of Lithuania
Supervisory authority	Ministry of Energy of the Republic of Lithuania
Outcomes of the measure	<p>The list of public buildings compiled and publicly accessible since 2014: http://www.enmin.lt/lt/activity/veiklos_kryptys/strateginis_planavimas_ir_ES/Pastatu_sarasas_20131230.pdf</p> <p>The list of public buildings contains the following data:</p> <ul style="list-style-type: none"> ➤ Building: address, unique identification number, total surface area and energy performance class; ➤ number and date of the energy performance certificate. <p>General data on public buildings:</p> <ul style="list-style-type: none"> ➤ Total surface area of buildings – 3 137 933 m²; ➤ Total surface area of buildings to be renovated (buildings with Classes F, E and D and without classes) – 2 223 445 m²; ➤ 3% of the surface area to be renovated – 66 703 m²; ➤ 3% of the surface area to be renovated in 2014-2020 – 466 924 m². <p>Energy savings by the end of 2020 are to be about 50 GWh of final energy</p>

Table 3.3.3. EU Structural Funds for 2007-2013

Measure	EU Structural Funds for 2007-2013 (Operational Programme for Promotion of Cohesion)
Period	2007-2013
Objective	To reduce energy costs in public buildings
Legislation	Order No 4-298 of the Minister for the Economy of the Republic of Lithuania of 14 July 2008 amending Order No 4-265 of the Minister for the Economy of the Republic of Lithuania of 25 June 2008 approving Special Part B forms for the funding of projects under Measures “Renovation of public buildings on the national level”, “Renovation of public buildings on the regional level” and “Renovation projects of public buildings meeting the benefit and quality assessment criteria of Measure 1.2 “Ensuring energy supply, stability, accessibility and improved energy efficiency” of the Single Programming Document of Lithuania for 2004-2006”
Activities supported	Repairs and/or reconstruction of external walls of public buildings, upgrading and/or reconstruction of energy systems of buildings and improvement of their energy properties
Budget and source of funding	EU Structural Funds and state budget funds Amounts of support: <ul style="list-style-type: none"> ➤ renovation of public buildings on the national level – LTL 726.1

	<p>million;</p> <ul style="list-style-type: none"> ➤ renovation of public buildings on the regional level – LTL 340.1 million; ➤ renovation projects of public buildings under SPD Measure 1.2 – LTL 42.9 million 																																
Implementing authority	LBSA and Ministry of the Economy of the Republic of Lithuania																																
Supervisory authority	Ministry of the Economy of the Republic of Lithuania																																
Outcomes	<p><u>Information supplied by the LBSA:</u> Under Priority 3 “Environment and sustainable development” of the Operational Programme for Promotion of Cohesion for 2007-2013:</p> <ul style="list-style-type: none"> ➤ 252 projects were completed and 304 projects were funded under Measure VP3-3.4-ŪM-03-V “Renovation of public buildings on the national level”. Energy savings by the end of 2013 are 88.61 GWh; ➤ 239 projects were completed and 318 projects were funded under Measure VP3-3.4-ŪM-04-R “Renovation of public buildings on the regional level”. Energy savings by the end of 2013 are 39.16 GWh; ➤ 21 projects were completed and 21 projects were funded under Measure VP3-3.4-ŪM-05-V “Renovation projects of public buildings under SPD Measure 1.2”. Energy savings by the end of 2013 are 12.97 GWh. <p>Public buildings renovated by purpose</p> <table border="1"> <thead> <tr> <th rowspan="2">Purpose of the building</th> <th rowspan="2">On the national level, units</th> <th rowspan="2">On the regional level, units</th> <th rowspan="2">SPD, units</th> <th colspan="2">Total</th> </tr> <tr> <th>units</th> <th>LTL million</th> </tr> </thead> <tbody> <tr> <td>Education</td> <td>205</td> <td>235</td> <td>14</td> <td>454</td> <td>717.4</td> </tr> <tr> <td>Healthcare</td> <td>55</td> <td>29</td> <td>7</td> <td>91</td> <td>266.4</td> </tr> <tr> <td>Other</td> <td>44</td> <td>54</td> <td>–</td> <td>98</td> <td>125.2</td> </tr> <tr> <td>Total</td> <td>304</td> <td>318</td> <td>21</td> <td>643</td> <td>1 109</td> </tr> </tbody> </table> <p>The total of 244 projects were completed by the end of 2012 with energy savings of 119.17 GWh. The total of 512 projects were completed by the end of 2013 with energy savings of 140.74 GWh</p>	Purpose of the building	On the national level, units	On the regional level, units	SPD, units	Total		units	LTL million	Education	205	235	14	454	717.4	Healthcare	55	29	7	91	266.4	Other	44	54	–	98	125.2	Total	304	318	21	643	1 109
Purpose of the building	On the national level, units					On the regional level, units	SPD, units	Total																									
		units	LTL million																														
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Healthcare	55	29	7	91	266.4																												
Other	44	54	–	98	125.2																												
Total	304	318	21	643	1 109																												

Table 3.3.4. Programme for upgrading educational institutions

Measure	Programme for upgrading educational institutions
Period	2009-2012 and 2013-2016
Objective	To upgrade educational institutions with a view to creating conditions for reducing energy costs in buildings and improving the school environment and the quality of the educational process.
Legislation	Programme for upgrading educational institutions approved by Order No V-410 of the Minister for Education and Science of the Republic of Lithuania of 10 May 2013

Activities supported	Replacement of windows and entrance doors, renovation of heating stations and boiler houses, upgrading of heating and hot water systems, renovation of water supply and sewage systems, insulation of buildings' roofs and walls, renovation and installation of ventilation, electricity, fire-safety and security systems; drawing up technical design projects for the upgrading of buildings
Budget and source of funding	<p>Implementation phases of the renovation (upgrading) of educational institutions:</p> <p><u>Phase I.</u> Completed in 2009-2012 in accordance with the Programme for upgrading educational institutions. The funding to programme implementing measures was allocated in accordance with the country's financial capabilities out of general appropriations from the state budget of the Republic of Lithuania and the National Investment Programme approved for the Ministry of Education and Science (LTL 28 million), the EU and co-financing funds (LTL 248.6 million), municipal budgets and other lawfully obtained funds. During this phase the programme implementation was given LTL 276.6 million including LTL 273.9 million for upgrading buildings and LTL 2.7 million for purchasing furniture.</p> <p><u>Phase II.</u> The programme is under implementation between 2013 and 2016. Programme implementing measures are financed in accordance with the country's financial capabilities out of general appropriations from the state budget of the Republic of Lithuania and the National Investment Programme approved for the Ministry of Education and Science, municipal budgets and other lawfully obtained funds.</p>
Implementing authority	Ministry of Education and Science of the Republic of Lithuania, Ministry of the Economy of the Republic of Lithuania, LBSA (EU support), municipalities and educational institutions
Supervisory authority	Ministry of Education and Science of the Republic of Lithuania and Ministry of the Economy of the Republic of Lithuania
Outcomes	The implementation results of the renovation projects of public buildings are presented in Table 3.3.3

In accordance with the information presented in the Programme for upgrading educational institutions approved by Order No V-410 of the Minister for Education and Science of the Republic of Lithuania of 10 May 2013, 576 educational institutions were renovated (upgraded) between 2009 and 2013 in implementing the procedure for drafting the Programme for the development of municipal infrastructure for 2000-2004 approved by Resolution No 734 of the Government of the Republic of Lithuania of 28 June 2000, the Programme for improving schools, the Programme for the reconstruction and equipping general education and vocational schools with learning materials for 2006-2008 and the Programme for upgrading educational institutions. The experience of implementing the projects of the renovation (upgrading) of buildings of educational institutions between 1996 and 2012 has shown that the implementation of energy saving measures relating to the renovation (upgrading) of buildings and heating systems improved hygiene conditions in educational institutions renovated (upgraded) and yielded energy savings between 30 and 47%.

Table 3.3.5. Programme for renovating and upgrading of libraries for 2007-2013

Measure	Programme for renovating and upgrading of libraries for 2007-2013
Period	2003-2013
Objective	To create proper conditions in libraries to collect, store and present to the public national cultural and scientific heritage sites and to ensure the accessibility of funds. To implement these objectives, one of the tasks is to renovate old library buildings and construct new ones that are suitable for libraries
Legislation	Programme for the renovation and upgrading of libraries for 2003-2013 approved by Resolution No 1454 of the Government of the Republic of Lithuania of 17 September 2002
Activities supported	Replacement of windows and entrance doors, renovation of heating stations and boiler houses, upgrading of heating and hot water systems, insulation of buildings' roofs and walls and renovation and installation of ventilation, electricity, fire-safety and security systems
Budget and source of funding	State and municipal budgets of the Republic of Lithuania, EU Structural Funds and other programmes and funds. The amount to be allocated to the reconstruction and repairs of library buildings is LTL 76 691 010
Implementing authority	Ministry of Culture of the Republic of Lithuania, Ministry of the Economy of the Republic of Lithuania, LBSA (EU support), municipalities and libraries
Supervisory authority	Ministry of Culture of the Republic of Lithuania and Ministry of the Economy of the Republic of Lithuania
Outcomes	In accordance with the Programme for the cultural development of regions for 2012-2020 approved by Order No IV-639 of the Minister for Culture of the Republic of Lithuania of 19 October 2011, 28 libraries were renovated by the end of 2011. Investment projects of the renovation of 27 library buildings and premises were completed between 2003 and 2010. In accordance with the data supplied by the Ministry of Culture of the Republic of Lithuania, 1 project was implemented in 2012. The implementation results of the renovation projects of public buildings are presented in Table 3.3.3

Table 3.3.6. Programme for upgrading cultural centres for 2007-2020

Measure	Programme for upgrading cultural centres for 2007-2020
Period	2007-2020
Objective	To create proper conditions for municipal cultural centres for carrying out cultural activities; to improve working conditions for the staff of municipal cultural centres and to reduce operational costs of buildings of municipal cultural centres
Legislation	Programme for the upgrading of cultural centres for 2007-2020 approved by Resolution No 785 of the Government of the Republic of Lithuania of 4 August 2006

Activities supported	Replacement of windows and entrance doors of buildings, insulation of building walls and upgrading and renovation of engineering systems
Budget and source of funding	State and municipal budgets of the Republic of Lithuania, EU financial support mechanisms and other funds. The amount to be allocated to major repairs and reconstruction of municipal cultural centres is LTL 328 530 000
Implementing authority	Ministry of Culture of the Republic of Lithuania, Ministry of the Economy of the Republic of Lithuania, LBSA (EU support) and cultural centres
Supervisory authority	Ministry of Culture of the Republic of Lithuania and Ministry of the Economy of the Republic of Lithuania
Outcomes	In accordance with the Programme for the cultural development of regions for 2012-2020, 3 buildings were upgraded by the end of 2011. In 2011, works were ongoing in 28 buildings using the amount of LTL 19 859 000. In accordance with the data supplied by the Ministry of Culture of the Republic of Lithuania, 2 projects were implemented in 2012. The implementation results of the renovation projects of public buildings are presented in Table 3.3.3

Table 3.3.7. Programme for upgrading museums for 2007-2015

Measure	Programme for upgrading museums for 2007-2015
Period	2007-2015
Objective	To create conditions in museums to collect, store, restore, exhibit and protect cultural values. To upgrade physical museum facilities
Legislation	Programme for the upgrading of museums for 2007-2015 approved by Resolution No 275 of the Government of the Republic of Lithuania of 14 March 2007
Activities supported	Replacement of windows and entrance doors, renovation of heating stations and boiler houses, upgrading of heating and hot water systems, insulation of buildings roofs and walls and renovation and installation of ventilation, electricity, fire-safety and security systems
Budget and source of funding	State budget funds of the Republic of Lithuania and capital investments provided for in the National Investment Programme distributed among appropriations managers and investment projects as well as the EU financial support. The programme budget is to allocate LTL 376 920 000 to the reconstruction, major and routine repairs and construction of new museum buildings
Implementing authority	Ministry of Culture of the Republic of Lithuania, Ministry of the Environment of the Republic of Lithuania, Ministry of Defence of the Republic of Lithuania, Ministry of the Economy of the Republic of Lithuania, LBSA (EU support), municipalities and museums
Supervisory authority	Ministry of Culture of the Republic of Lithuania and Ministry of the Economy of the Republic of Lithuania
Outcomes	In accordance with the Programme for the cultural development of regions for 2012-2020, there were no museum buildings completed under the programme by the end of 2011. Renovation works are

	<p>ongoing in 16 museums and their branches (8 museums supervised by the Ministry of Culture, 2 museums – by the Ministry of the Environment, 1 museum – by the Ministry of Defence and 4 municipal museums). Over LTL 42.5 million have been allocated to those works from the National Investment Programme for 2007-2010. Funding has been allocated from the EU support funds to works in 3 museums for the period between 2010 and 2012 (the total amount of LTL 24.3 million).</p> <p>In accordance with the data supplied by the Ministry of Culture of the Republic of Lithuania, no projects were completed in 2012.</p>
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Table 3.3.8. EEA and Norwegian Financial Mechanisms

Measure	EEA and Norwegian Financial Mechanisms
Period	2004-2009 and 2009-2014
Objective	With a view to contributing to the diminishing of economic and social disparities in the EEA, the Kingdom of Norway, the Republic of Iceland and the Principality of Liechtenstein created the EEA Financial Mechanism and the Norwegian Financial Mechanism
Legislation	Rules for the funding and implementation of the programmes and projects under the EEA and the Norwegian Financial Mechanisms approved by Order No 1K-041 of the Minister for Finance of the Republic of Lithuania of 29 January 2013
Activities supported	Support is granted to projects the implementation of which improves energy efficiency, reduces pollution, promotes the use of renewable energy resources, encourages the improvement in the use and management of resources and renovates public transport and urban infrastructure as well as projects aiming at the preservation of Europe's cultural heritage
Budget and source of funding	In 2009-2014 the EEA Financial Mechanism will allocate EUR 38.4 million (or EUR 35.52 million of support funds), and the Norwegian Financial Mechanism – EUR 45.6 million (or EUR 42.18 million of support funds)
Implementing authority	CPMA
Supervisory authority	Ministry of Finance of the Republic of Lithuania
Outcomes	<p>The implementation of projects under the Financial Mechanisms for 2004-2009 was completed in 2011. In accordance with the information supplied by the Ministry of Finance of the Republic of Lithuania (http://www.finmin.lt/web/finmin/eee-norway/2004-2009), 13 individual cultural heritage projects and 16 individual healthcare and child care projects relating to the renovation and repairs of buildings were completed. Due to the lack of data, it is impossible to calculate energy savings.</p> <p>112 projects were registered under the call for applications No EEE-LT06-KM-K-1 for the programme “Conservation and revival of cultural and natural heritage” of the EEA Financial Mechanism for 2009-2014. The total amount of investment in the projects is LTL 178 513 500</p>

Table 3.3.9. Ignalina Programme for 2007-2013

Measure	Ignalina Programme for 2007-2013
Period	2007-2013
Objective	To reduce energy costs in public buildings
Legislation	Rules for implementing the Ignalina Programme for 2007-2013 in Lithuania
Activities supported	Insulation of external walls and roofs and replacement of windows and doors in public buildings in Visaginas, Ignalina and Zarasai Municipalities
Budget and source of funding	The measure is funded by the Ignalina Nuclear Power Plant Decommissioning Fund
Implementing authority	CPMA and Visaginas, Ignalina and Zarasai Municipalities
Supervisory authority	Ministry of Energy of the Republic of Lithuania and Ministry of Finance of the Republic of Lithuania
Outcomes	In accordance with the information supplied by the CPMA, 2 projects were completed in 2012 and 5 projects are ongoing. 12 projects were completed by the end of 2012. Due to the lack of data, it is impossible to calculate energy savings

Table 3.3.10. EE requirements to public procurement procedures

Measure	EE requirements to public procurement procedures
Period	Start in 2008
Objective	When conducting public procurement procedures for the goods listed in the approved list (see below in Section "Legislation"), institutions implementing this measure must set EE requirements in the technical specifications for these goods, except where there are no goods whose EE requirements meet the approved list on the market
Legislation	List of goods subject to energy efficiency requirements during the public procurement procedure and of energy efficiency requirements to these goods approved by Resolution No 1023 of the Government of the Republic of Lithuania of 8 October 2008; List of goods subject to energy efficiency requirements during the public procurement procedure, except for road transport, and of energy efficiency requirements to these goods approved by Order No 1-266 of the Minister for Energy of the Republic of Lithuania of 27 October 2011 (hereinafter both lists referred to as 'the List')
Activities supported	List of goods subject to energy efficiency requirements during the public procurement procedure and of energy efficiency requirements to these goods: circulating pumps, lamps, office equipment (computers, monitors, printers, copy machines), home air conditioners, home electric ovens, home dishwashers, home combined washing machines with dryers, home washing machines, home tumbler dryers, home refrigerators, units for keeping frozen foodstuffs, food freezers, Class M1 vehicles (passenger cars), except for all-terrain vehicles and vehicles with more than 5 seats,

	home lamps, home washing machines, home freezing appliances and TVs
Budget and source of funding	Not established
Implementing authority	Bodies of the Government of the Republic of Lithuania and other public authorities and bodies reporting to the Government of the Republic of Lithuania, Council of Prime Minister of the Republic of Lithuania, ministries, bodies under ministries and other public authorities and bodies reporting to ministries. Other contracting authorities not mentioned here are also recommended to apply EE requirements when conducting public procurement procedures
Supervisory authority	Budgetary institution the Public Procurement Office
Outcomes	<p>The outcomes are presented in accordance with the final report for 2012 on the application of energy efficiency requirements in public procurement procedures of the budgetary institution the Public Procurement Office:</p> <p>the value of public procurement procedures conducted in 2012 (excluding low-value procurement) where the goods from the List were procured and EE requirements applied (LTL 233.2 million) was 97% of the value of public procurement procedures conducted in 2012 (excluding low-value procurement) where the goods from the List were procured (LTL 240.4 million).</p> <p>The total number of public procurement procedures conducted in 2012 (excluding low-value procurement) where the goods from the List were procured and EE requirements applied (125) was 77.2% of the total number of public procurement procedures conducted in 2012 (excluding low-value procurement) where the goods from the List were procured (162).</p> <p>The total value of public procurement procedures conducted in 2012 (excluding low-value procurement) where the goods from the List were procured and EE requirements applied (LTL 233.2 million) was 1.8% of the total value of public procurement procedures conducted in 2012 (excluding low-value procurement) (LTL 12 641 million).</p> <p>The total number of public procurement procedures conducted in 2012 (excluding low-value procurement) where the goods from the List were procured and EE requirements applied (125) was 1.1% of the total number of public procurement procedures conducted in 2012 (excluding low-value procurement) (11 559).</p> <p>In 2012 the total value of low-value procurement¹⁰ where EE requirements applied was LTL 4.6 million</p>

Table 3.3.11. Green procurement

Measure	Green procurement
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¹⁰ Since 2011 in the Central Public Procurement Information System it is possible to set the application of EE requirements to low-value procurement procedures. These procurement procedures are mentioned in annual public procurement reports as a cumulative value.

Period	Start in 2008
Objective	To promote green procurement and ascertain that goods, services or works are as environmentally-friendly as possible. When conducting green procurement procedure for a product (goods, services or works), contracting authorities must include in public procurement documents minimal or minimal and expanded (one, several or all) environmental criteria set for that product
Legislation	Measures for conducting green procurement for 2012-2015 approved by Order No D1-973 of the Minister for the Environment of the Republic of Lithuania of 14 December 2011
Activities supported	Order No D1-508 of the Minister for the Environment of the Republic of Lithuania of 28 June 2011 lays down a list of products (25 products) that are subject to environmental criteria during public procurement procedures. One of the key requirements is the energy efficiency requirement applicable when conducting public procurement procedures for office equipment (printers, fax machines, copy machines, scanners), information technology equipment (computers and monitors), electric lamps, vehicles and transport services, design services and construction works, gardening machines and services, catering services, household appliances (dishwashers, washing machines, dryers, electric ovens, freezing appliances, air conditioners, circulating pumps), thermal insulation materials, windows, hard flooring, mobile phone chargers, road construction and road signs, street lighting and road traffic signals and general heating and electricity generation equipment
Budget and source of funding	Not established
Implementing authority	Bodies of the Government of the Republic of Lithuania and other public authorities and bodies reporting to the Government of the Republic of Lithuania, Council of Prime Minister of the Republic of Lithuania, ministries, bodies under ministries and other public authorities and bodies reporting to ministries
Supervisory authority	Budgetary institution the Public Procurement Office and Ministry of the Environment of the Republic of Lithuania
Outcomes	In accordance with the information supplied by the Ministry of the Environment of the Republic of Lithuania, the total number of green procurement procedures conducted in 2012 ¹¹ (959) is 8.3% of the total number of public procurement procedures conducted in 2012 (11 559). The value of green procurement procedures conducted in 2012 (LTL 4 069.5 million) is 32.2% of the total value of public procurement procedures conducted in 2012 (LTL 12 641.0 million). The number of green procurement procedures (449) conducted in 2012 by contracting authorities which must apply environmental criteria in public procurement procedures is 11.8% of the total number of public procurement procedures conducted by these

¹¹ These are statistical data of the Public Procurement Office monitoring green procurement procedures. Low-value procurement procedures are excluded.

contracting authorities (3 792). As far as the value is concerned, the value of green procurement procedures (LTL 825.6 million) conducted in 2012 by contracting authorities which must apply environmental criteria in public procurement procedures is 26.5% of the total value of public procurement procedures by these contracting authorities (LTL 3 120.5 million).

The number of green procurement procedures (510) conducted in 2012 by contracting authorities which are recommended to apply environmental criteria in public procurement procedures is 6.6% of the total number of public procurement procedures conducted by these contracting authorities (7 767). As far as the value is concerned, the said organisations are recommended to apply environmental criteria. The value of green procurement procedures conducted in 2012 (LTL 3 243.9 million) is 34.1% of the total value of public procurement procedures by these contracting authorities (LTL 9 520.5 million).

Low-value green procurement procedures conducted in 2012 accounted for 4.6% (LTL 92.3 million) of the total value of low-value public procurement procedures and 0.8% (6 356) of the total number of low-value public procurement procedures.

In 2012 the number of types of procurement objects subject to environmental requirements increased: in 2012 – 316 while in 2011 – 308. The number of contracting authorities conducting green procurement procedures also increased: in 2012 – 649 and in 2011 – 626.

An evaluation of green procurement procedures conducted in 2012 and of the fact that the total number and value of green procurement procedures as compared to 2011 greatly increased (from 7.4 to 8.3% in terms of the number of procurement procedures and from 23.5 to 32.2% in terms of the value of procurement procedures) may lead to a conclusion that the procurement of a product meeting energy efficiency requirements saves energy but it is difficult to establish precise energy savings and it is impossible to provide such information.

The number and value (in percent) of green procurement procedures for products subject to EE requirements conducted in 2012 in the total number and value of public procurement procedures conducted for that group of products:

Title	Green procurement procedures in 2012	% of the number	% of the value
Electric bulbs		50.0	23.8
Road construction and road signs		31.5	74.6
IT tools and office equipment		28.1	39.0
Vehicles		22.9	31.7
Equipment and domestic appliances		21.9	32.7
Design and construction		13.2	33.1

	works		
	Food and catering services	5.0	11.3
	Hard flooring	3.6	9.6
<p>The Measures for conducting green procurement procedures for 2013-2015 approved by Order No D1-266 of the Minister for the Environment of the Republic of Lithuania of 14 December 2011 envisage an environmental impact evaluation to be conducted for public procurement procedures in 2014-2015. This evaluation will help to establish energy savings for the previous year and the evaluation data will make it possible to establish energy savings planned to be achieved by 2020</p>			

Table 3.3.12. Special Climate Change Programme

Measure	Special Climate Change Programme
Period	Start in 2010
Objective	<p>Improvement of energy consumption and generation efficiency: upgrading of residential houses and public buildings, other measures that are the most efficient in reducing greenhouse gas emissions in the sectors of energy, industry, construction, transport, agriculture, waste management and others.</p> <p>Promotion of the use of renewable energy sources and implementation of environment-friendly technologies including high-efficiency cogeneration.</p> <p>Implementation of measures relating to national climate change policy-making and implementation including public awareness raising and education measures, mitigation of and adaptation to climate change on national and international levels, programme administrating funds and other measures</p>
Legislation	Law No XI-329 of the Republic of Lithuania of 7 July 2009 on financial instruments for climate change management
Activities supported	<p>Major repairs or reconstruction of heating and hot water systems; replacement or restructuring of ventilation and air conditioning systems; replacement of windows and entrance doors; insulation of the roof including the construction of a new sloping roof (except for the finishing of space under the roof) and other costs relating to roof replacement; insulation of walls and ceilings; insulation of partitions; insulation of floors over the cellar and insulation of floors on the ground; insulation of wall bases; installation of a ventilation system with recuperation elements.</p> <p>Installation of solar energy collectors or low-capacity solar plants (energy generated not for sale). Installation of wind energy sources (energy generated not for sale). Installation of geothermal energy sources (energy generated not for sale). Replacement of boilers running on fossil fuels (fuel oil, shale oil, natural gas and coal) or other environment-polluting energy sources with boilers running on biofuel in heating systems of buildings</p>
Budget and source of funding	In accordance with the estimate of the absorption of funds of the Special Climate Change Programme for 2013, the programme funds

	<p>amount to LTL 378.82 million. They are/are to be distributed as follows:</p> <ul style="list-style-type: none"> ➤ renovation (upgrading) of public buildings to reduce energy consumption costs – LTL 76 million; ➤ use of renewable energy sources (solar, wind, geothermal energy, biofuel, etc.) in public buildings and enterprises engaging in economic commercial activities – LTL 40 million. <p>In accordance with the estimate of the absorption of funds of the Special Climate Change Programme for 2014, the programme funds amount to LTL 435.49 million. They are to be distributed as follows:</p> <ul style="list-style-type: none"> ➤ renovation (upgrading) of public and residential buildings (for various social groups) reducing energy consumption costs by at least 40% – LTL 71 million; ➤ use of renewable energy sources (solar, wind, geothermal energy, biofuel, etc.) in public buildings and/or installation of environmentally-friendly technologies in enterprises engaging in economic commercial activities – LTL 44.78 million
Implementing authority	LEIF
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes	<p>2012: http://www.laaif.lt/index.php?136533252</p> <ul style="list-style-type: none"> ➤ 29 projects were financed under Measure “Renovation (upgrading) of buildings of educational institutions to reduce energy consumption costs”. The total amount of investment is LTL 47 692 430. <p>In accordance with the information supplied by the LEIF, 36 projects will be implemented under this measure by 2014.</p> <ul style="list-style-type: none"> ➤ 56 projects were financed under Measure “Installation of biofuel boilers of the capacity of up to 500 kW in public buildings”. The total amount of investment is LTL 20 955 890. <p>In accordance with the information supplied by the Ministry of the Environment of the Republic of Lithuania, in 2012 the funding of all measures amounted to LTL 202.8 million</p>

Moreover, the funds of the EU structural support for 2007-2013 were allocated to infrastructure projects where (some) measures implemented may be linked with energy efficiency improvement or energy saving. However it is impossible to evaluate the number of the said measures and calculate related energy savings as the legislation in force does not oblige implementing authorities to collect and store energy indicators.

3.4. Energy efficiency improvement measures in the industry sector

This Chapter presents a description of measures completed, ongoing and planned in the industry sector, energy savings by 2012 and energy savings by 2020. The savings are calculated using the bottom-up approach.

Table 3.4.1. Summary results of measures completed, ongoing and planned in the industry sector

Table No	Measure	Period, years	Energy savings by the end of 2012, GWh	Energy savings by the end of 2020, GWh
3.4.2	EU Structural Funds for 2007-2013 (cogeneration)	2007-2013	n/a	n/a
3.4.3	EU Structural Funds for 2007-2013 (audits) – Procesas LT	2007-2013	n/a	n/a
3.4.4	Programme of the Lithuanian Environmental Investment Fund	1999-	4.30	n/a
3.4.5	Special Climate Change Programme (Measure “Increasing energy efficiency in the industry sector”)	2010-	n/a	n/a
3.4.6	EEA and Norwegian Financial Mechanisms	2009-2014	n/a	n/a
3.4.7	Measures implemented by industries	2011-	0.79	n/a
–	EU Structural Funds for 2014-2020 (new measure) ¹²	2014-2020	not applicable	n/a
TOTAL:			5.09	n/a

Table 3.4.2. EU Structural Funds for 2007-2013 (cogeneration)

Measure	EU Structural Funds for 2007-2013 (cogeneration)
Period	2007-2013
Objective	To implement advanced and efficient energy generation technologies and to improve energy production efficiency
Legislation	Order No 4-147 of the Minister for the Economy of the Republic of Lithuania of 9 April 2009 on the allocation of funding to projects seeking to receive financial support from the European Union Structural Funds under the Strategy for the use of the European Union structural support in Lithuania for 2007-2013 and the Operational Programme for Promotion of Cohesion
Activities supported	Upgrading of cogeneration plants and boiler houses and connecting them to heating systems. Construction of high-efficiency cogeneration plants, except for those running on renewable energy resources, and connecting them to

¹² The plan is to invest about 14% of the EU Structural Funds allocated for the period of 2014-2020 in the areas of energy efficiency and renewable energy.

	heating systems (a heating system also includes a heat consumption system)
Budget and source of funding	EU Structural Funds – up to LTL 26 101 000, funds of other legal and/or natural persons – at least LTL 26 101 000
Implementing authority	LBSA, Ministry of the Economy of the Republic of Lithuania and industries
Supervisory authority	Ministry of the Economy of the Republic of Lithuania
Outcomes	6 projects were completed and 7 projects are funded under Measure VP3-3.4-ŪM-01-K “Improvement of energy generation efficiency” of Priority 3 “Environment and sustainable development” of the Operational Programme for Promotion of Cohesion for 2007-2013. Those include 2 projects implemented in industrial enterprises (the total project value is LTL 13 446 000) and 1 project is ongoing (the total project value is LTL 31 373 000)

Table 3.4.3. EU Structural Funds for 2007-2013 (audits) – Procesas LT

Measure	EU Structural Funds for 2007-2013 (audits) Procesas LT
Period	2007-2013
Objective	To support the procurement of energy audit services for manufacturing processes
Legislation	Conditions for project financing under Measure VP2-2.1-ŪM-03-K “Procesas LT” approved by Order No 4-576 of the Minister for the Economy of the Republic of Lithuania of 24 November 2008
Activities supported	Energy audits in manufacturing processes in industrial enterprises
Budget and source of funding	EU Structural Funds – up to LTL 11 660 000, funds of other legal and/or natural persons – at least LTL 13 360 000
Implementing authority	LBSA, Ministry of the Economy of the Republic of Lithuania and industries
Supervisory authority	Ministry of the Economy of the Republic of Lithuania
Outcomes	52 projects were completed and 173 projects are funded under Measure VP2-2.1-ŪM-03-K “Procesas LT” of Priority 2 “Enhancing business productivity and improvement of the business environment” of the Operational Programme for Economic Growth for 2007-2013

Table 3.4.4. Programme of the Lithuanian Environmental Investment Fund

Measure	Programme of the Lithuanian Environmental Investment Fund
Period	Start in 1999
Objective	Support is provided to projects relating to the reduction of pollutant and greenhouse gas emissions into the atmosphere (use of cleaner fuel, implementation of cleaner technologies and pollutant treatment facilities, energy efficiency improvement, etc.)

Legislation	<p>Procedure for financing and supervising investment projects of the Lithuanian Environmental Investment Fund approved by Order No 437 of the Minister for the Environment of the Republic of Lithuania of 29 August 2003;</p> <p>Areas of financing under the Programme of the Lithuanian Environmental Investment Fund for 2011 approved by Order No D1-398 of the Minister for the Environment of the Republic of Lithuania of 12 May 2011</p>
Activities supported	Investment projects are supported by granting preferential loans and subsidies. The Fund finances environmentally beneficial investment projects of legal persons duly registered and conducting economic activities in the Republic of Lithuania the implementation of which diminishes the adverse effect of economic activity on the environment
Budget and source of funding	LTL 29 million per year. Source – 30% of the environmental pollution tax revenues
Implementing authority	LEIF
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes	<p>In 2012 funding was granted to 7 projects: http://www.laaif.lt/index.php?2993507421 In 2013 the total number of projects financed was 42: http://www.laaif.lt/index.php?2993507421</p> <p>In accordance with the data supplied by the LEIF, 1 project was implemented in 2012. The LEIF support to the project was LTL 690 000. The energy savings achieved were 4 300 MWh while the reduction of atmospheric pollution was by 84.15 tons. Energy savings by the end of 2020 are to reach 34 400 MWh.</p> <p>In accordance with the data of the National Control Commission for Prices and Energy (http://www.regula.lt/lt/naujienos/index.php?full=yes&id=29642), the total amount of project investment was over LTL 2 million including the corporate funds amounting to LTL 1 318 000. A condensing economiser of 1.98 MW was installed for the capacity of 10 MW biofuel boilers. Estimated annual savings of wooden fuel following the installation of the condensing economiser are 6 895 toe</p>

Table 3.4.5. Special Climate Change Programme

Measure	Special Climate Change Programme (Measure “Increasing energy efficiency in the industry sector”)
Period	Start in 2010
Objective	<p>Improvement of energy consumption and generation efficiency: upgrading of residential houses and public buildings, other measures that are the most efficient in reducing greenhouse gas emissions in the sectors of energy, industry, construction, transport, agriculture, waste management and others.</p> <p>Promotion of the use of renewable energy sources and</p>

	<p>implementation of environment-friendly technologies including high-efficiency cogeneration.</p> <p>Implementation of measures relating to national climate change policy-making and implementation including public awareness raising and education measures, mitigation of and adaptation to climate change on national and international levels, programme administering funds and other measures</p>
Legislation	Law No XI-329 of the Republic of Lithuania of 7 July 2009 on financial instruments for climate change management
Activities supported	The measure supports the installation of solar energy collectors, wind turbines, biofuel boilers and heat pumps
Budget and source of funding	<p>In accordance with the estimate of the absorption of funds of the Special Climate Change Programme for 2013, the programme funds amount to LTL 378.82 million.</p> <p>In accordance with the estimate of the absorption of funds of the Special Climate Change Programme for 2014, the programme funds amount to LTL 435.49 million.</p>
Implementing authority	LEIF
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes	<p>In 2012 no projects were completed under the measure.</p> <p>In accordance with the information supplied by the Ministry of the Environment of the Republic of Lithuania, in 2012 the funding of all measures amounted to LTL 202.8 million</p>

Table 3.4.6. EEA and Norwegian Financial Mechanisms

Measure	EEA and Norway financial mechanisms – green industry innovations
Period	2009-2014
Objective	To increase the competitiveness of environmentally-friendly enterprises including the application of green solutions in existing conventional manufacturing enterprises by using green innovations and entrepreneurship. To encourage more active cooperation of business and organisations and research and educational institutions in the Republic of Lithuania and the Kingdom of Norway by implementing joint business projects
Legislation	Rules for the financing and implementation of programmes and projects of the EEA and the Norwegian Financial Mechanisms for 2009-2014
Activities supported	<p>Financing will be given to project activities relating to: the creation, installation or marketing of new environmental technologies; significant improvement and marketing of existing technological processes with a view to diminishing their effect on the environment and/or improving the efficiency of the use of natural resources; purchasing and implementation of new innovative environmental technologies.</p> <p>Financing will be given to project activities relating to:</p>

	technologically new green products – the creation and marketing of green products or green materials; technological improvement and marketing of existing products (articles or materials) with a view to reducing their adverse effect on the environment and human health
Budget and source of funding	Norwegian Financial Mechanism: Partnership Projects Scheme of the Green Industry Innovations Programme – LTL 22.92 million. Small Projects Scheme of the Green Industry Innovations Programme – LTL 5.82 million
Implementing authority	CPMA and a small and medium-sized business entity (an enterprise, a research and educational institution, an association or a cluster)
Supervisory authority	Ministry of the Economy of the Republic of Lithuania
Outcomes	13 projects were registered under the call for applications No NOR-LT09-ŪM-K-01 for the Partnership Projects Scheme of the Green Industry Innovations Programme of the Norwegian Financial Mechanism for 2009-2014. The total amount of investment applied for is LTL 21 346 590. 6 projects were registered under the call for applications No NOR-LT09-ŪM-K-02 for the Small Projects Scheme of the Green Industry Innovations Programme of the Norwegian Financial Mechanism for 2009-2014. The total amount of investment applied for is LTL 3 002 050

Table 3.4.7. Measures implemented by industries

Measure	Measures implemented by industries
Period	Since 2011
Objective	Improvement of energy consumption and generation efficiency and energy saving
Budget and source of funding	Own corporate funds
Implementing authority	Industries
Supervisory authority	Industries
Outcomes	In accordance with the information supplied by industries, they have implemented the following measures: <ul style="list-style-type: none"> ➤ UAB Baltwood: organising the pressurised air supply system (implementation period – 2012) – electricity savings of 18 MWh; ➤ UAB PAROC: (a) efficient coke consumption (implementation period – 2012-2020) – savings of energy resources and energy of 1 880 MWh; (b) replacement of incandescent lamps (implementation period – 2012-2016) – energy savings of 96 MWh; ➤ AB Akmenės cementas: changing the clinker production method (implementation period – 2011-2013) – reduced fuel consumption planned is from 1 420 to 870 kcal/kg of clinker; ➤ AB Lifosa: upgrading of electric lighting, installation of gears

	with frequency modulators and other measures (implementation period – 2012) – savings of energy resources and energy of 674 MWh
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3.5. Energy efficiency improvement measures in the transport sector

This Chapter presents a description of measures completed, ongoing and planned in the transport sector, energy savings by 2012 and energy savings by 2020. The savings are calculated using the bottom-up approach.

Table 3.5.1. Summary results of measures completed, ongoing and planned in the transport sector

Table No	Measure	Period, years	Energy savings by the end of 2012, GWh	Energy savings by the end of 2020, GWh
3.5.2	Roadworthiness tests of road vehicles	Start in 1994	n/a	n/a
3.5.3	EU Structural Funds for 2007-2013 (integrated development of green public transport)	2007–2013	n/a	n/a
3.5.4	EU Structural Funds for 2007-2013 (Priority “Essential economic infrastructure” of the Operational Programme for Economic Growth)	2007–2013	n/a	n/a
3.5.5	Improvement of road infrastructure and reduction of traffic congestion	2000–2015	n/a	n/a
3.5.6	A Day Without Cars Initiative	Start in 2002	n/a	n/a
3.5.7	Special Climate Change Programme	Period – 2012	n/a	n/a
–	EU Structural Funds for 2014-2020 ¹³	2014–2020	not applicable	n/a
TOTAL:			n/a	n/a

Table 3.5.2. Roadworthiness tests of road vehicles

Measure	Roadworthiness tests of road vehicles
Period	Start in 1994
Objective	To conduct regular checks of vehicles to ensure that only vehicles meeting technical and environmental requirements set are in operation
Legislation	Procedure for performing compulsory roadworthiness tests of motor vehicles and trailers approved by Order No 3-406 of the Minister for Transport and Communications of the Republic of Lithuania of 24

¹³ The plan is to invest about 14% of the EU Structural Funds allocated for the period of 2014-2020 in the areas of energy efficiency and renewable energy.

	October 2008
Activities supported	Since 1994 roadworthiness tests of cars have become mandatory in Lithuania. They involve checks of whether vehicles meet technical and environmental requirements set. The test checks the technical condition, structure, the functioning and efficiency of systems, appliances and elements of the vehicle and its compliance with technical requirements. This prevents the use of vehicles that fail to meet technical requirements, are obsolete and inefficient as it is forbidden to use road vehicles that do not duly pass the state roadworthiness test
Budget and source of funding	n/a
Implementing authority	Enterprise registered in accordance with the statutory procedure that meets statutory requirements and holds a permit issued by the State Road Transport Inspectorate under the Ministry of Transport and Communications entitling it to conduct the mandatory test and re-testing
Supervisory authority	Ministry of Transport and Communications of the Republic of Lithuania
Outcomes	The optimal tuning of the vehicle's engine has a direct effect on fuel consumption. Research shows that the maintenance of the proper technical condition of road vehicles can reduce fuel consumption by up to 15%. It is impossible to offer a quantitative assessment of the impact of the measure and to calculate energy savings

Table 3.5.3. EU Structural Funds for 2007-2013 (integrated development of green public transport)

Measure	EU Structural Funds for 2007-2013 (integrated development of green public transport)
Period	2007-2013
Objective	To upgrade the public transport system in an integrated manner with a view to reducing air pollution, ensuring more efficient transportation of the urban population, promoting the mobility of the labour force, diminishing traffic congestion, improving traffic safety and ensuring high quality of public transportation services
Legislation	Conditions for financing projects under Measure VP3-3.3-SM-01-V "Integrated development of green public transport" approved by Order No 3-561 of the Minister for Transport and Communications of the Republic of Lithuania of 14 September 2010
Activities supported	Procurement of green public transport vehicles (trolleybuses and buses running on gas, electricity and hybrid engines); construction of new trolleybus contact network lines; reconstruction of the part of streets dedicated to public transport traffic (installation of A lanes, entrances to stops, stop pavilions, partitions, markings and road signs); upgrading and development of urban bicycle infrastructure (creation of urban bike sharing systems, installation and reconstruction of stands, sheds, protective equipment, lots and paths, procurement of bicycles); implementation of Park&Ride and Bike&Ride systems; adaptation of public railway and road passenger

	transport to the transportation of bicycles
Budget and source of funding	Funding allocated to projects under Measure “Integrated development of green public transport” is LTL 75.36 million of the EU funds and at least LTL 13.29 million of municipal budget funds
Implementing authority	Transport Investment Directorate
Supervisory authority	Ministry of Transport and Communications of the Republic of Lithuania
Outcomes	The development of public transport and infrastructure diminishes the use of personal vehicles and final fuel consumption. In 2012, 12 energy efficiency improvement projects were ongoing under this measure in the transport sector in 5 municipalities. 68 public vehicles were renovated

Table 3.5.4. EU Structural Funds for 2007-2013 (Priority “Essential economic infrastructure” of the Operational Programme for Economic Growth)

Measure	EU Structural Funds for 2007-2013 (Priority “Essential economic infrastructure” of the Operational Programme for Economic Growth)
Period	2007-2013
Objective	The Operational Programme for Economic Growth of the EU Structural Funds covers three measures: Improvement of road and railway networks with a view to improving traffic safety and reducing the adverse impact on the environment; improvement of technical parameters of road and railway infrastructure of national significance; upgrading and development of municipal transport infrastructure. The purpose of these measures is to implement traffic safety measures ensuring safe road traffic conditions matching the level of traffic intensity and international standards, to improve railway traffic conditions and to reduce the adverse impact on the environment; to reconstruct roads and railways of national significance, thus diminishing social and economic disparities between regions; to develop regional transport infrastructure and road interconnections with the main roadways and to develop a transport infrastructure network of the required throughput capacity and reliability (streets, pedestrian and bicycle paths)
Legislation	Conditions for financing projects under Measure VP2-4.3-SM-01 “Improvement of road and railway networks to improve traffic safety and reduce the adverse impact on the environment” approved by Order No 3-137 of the Minister for Transport and Communications of the Republic of Lithuania of 29 April 2008 Conditions for financing projects under Measure VP2-4.4-SM-01 “Improvement of technical parameters of road and railway infrastructure of national significance” approved by Order No 3-269 of the Minister for Transport and Communications of the Republic of Lithuania of 16 July 2008 Conditions for financing projects under Measure VP2-4.4-SM-02-R “Upgrading and development of municipal transport infrastructure”

	approved by Order No 3-331 of the Minister for Transport and Communications of the Republic of Lithuania of 15 September 2008
Activities supported	Implementation of traffic safety engineering measures; implementation of environmental measures; renovation of the diagnostic infrastructure and railway emergency system by purchasing the required equipment/asphalting of gravel roads; improvement of road surface on main, regional and district roads; enhancing the throughput capacity of regional (interconnecting) railway lines/reconstruction and development of local roads and streets; construction of tunnels (except for railway tunnels) and underground crossings; asphalting gravel roads; implementation of traffic safety engineering measures; implementation of environmental measures.
Budget and source of funding	The total budget of the measures is LTL 1 794.14 million including the EU funds of LTL 1 489 million
Implementing authority	Transport Investment Directorate
Supervisory authority	Ministry of Transport and Communications of the Republic of Lithuania
Outcomes	Integrated optimised use of road transport infrastructure results in diminished traffic congestion. As vehicles need to brake and start again less, average fuel consumption per distance covered decreases. In 201? 1 project is ongoing in the transport sector under Measure “Improvement of road and railway networks to improve traffic safety and reduce the adverse impact on the environment” (4 technical units are to be purchased to eliminate consequences of railway traffic accidents, 4 projects – under Measure “Improvement of technical parameters of road and railway infrastructure of national significance” (the length of new and reconstructed railways is 33.75 km, the length of new and reconstructed roads is 34.06 km), 156 projects – under Measure “Upgrading and development of municipal transport infrastructure” (the length of new and reconstructed roads (municipal roads and streets) is 133.29 km, and technical design projects are ready for 14 units)

Table 3.5.5. Improvement of road infrastructure and reduction of traffic congestion

Measure	Improvement of road infrastructure and reduction of traffic congestion
Period	2000-2015
Objective	Development and upgrading of the road network
Legislation	Law on the financing of the Road Maintenance and Development Programme
Activities supported	The programme funds are used to design, construct, build, upgrade, repair, take stock and maintain roads, bridges, viaducts, flyovers, tunnels and technical and house-keeping road buildings, to purchase road machinery, technology, transport and other production tools, to conduct state supervision of road and bridge research and the compliance with special construction requirements, to create road

	information systems, to develop road infrastructure, to implement traffic safety programmes and related measures and to finance other road-related needs
Budget and source of funding	The budget is approved on an annual basis for the current year. Sources of financing: a part of excise duty revenues received from the sale of petrol and diesel fuel and energy products made from or with biological materials and intended for use as engine fuel; excise duty revenues received from the sale of liquefied gas for cars; a tax for heavy vehicles registered in the Republic of Lithuania; a user tax applicable to owners or managers of vehicles registered in the Republic of Lithuania and in foreign countries including the EU Member States; a traffic restriction tax
Implementing authority	Lithuanian Road Administration under the Ministry of Transport and Communications
Supervisory authority	Ministry of Transport and Communications of the Republic of Lithuania
Outcomes	Good road surface, a convenient road network and properly organised traffic offer a choice of the most efficient travelling mode and minimise fuel consumption. It is impossible to offer a quantitative assessment of the impact of the measure and to calculate energy savings

Table 3.5.6. A Day Without Cars Initiative

Measure	A Day Without Cars Initiative
Period	Start in 2002
Objective	To draw the public's attention to the negative effect of transport on the environment, human health and traffic safety and to encourage the urban population not to use their cars during the campaign and to opt for the less-polluting public transport or bicycles or go on foot
Legislation	None
Activities supported	During the campaign people are encouraged to refrain from using their cars at least for one day and use public transport or a bicycle or walk if the distance is short
Budget and source of funding	n/a
Implementing authority	Municipalities
Supervisory authority	None
Outcomes	Usually the information on the campaign is published in local or national media and events are organised in schools or public places. In 2002 the campaign was organised by 12 municipalities, in 2003 – 21, 2004 – 18, 2005 – 25, 2006 – 21, 2007 – 19, 2008 – 16, 2009 – 11, 2010 – 23, 2011 – 14, 2012 – 19 and 2013 – 18. No studies are undertaken to assess the impact of the campaign on the car flows or pollution reduction. Only a few EU Member States

	conduct such studies at their own cost
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Table 3.5.7. Special Climate Change Programme

Measure	Special Climate Change Programme
Period	Period – 2012
Objective	Development of green public transport and infrastructure
Legislation	Law on financial instruments for climate change management
Activities supported	Development of green public transport and infrastructure and implementation of environmentally-friendly technologies and measures reducing greenhouse gas emissions into the atmosphere in public places
Budget and source of funding	The amount allocated in the estimate of the programme funds for 2012 is LTL 129.4 million
Implementing authority	LEIF
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes of the measure	The funding of LTL 6 million has been allocated to the project “Installation of a passenger lift from the centre of the resort to the skiing area with a view to reducing pollution from vehicles” of Druskininkai Municipality Administration

3.6. Energy efficiency improvement measures in the energy sector

This Chapter presents a description of measures completed, ongoing and planned in the energy sector, energy savings by 2012 and energy savings by 2020. The savings are calculated using the bottom-up approach.

Table 3.6.1. Summary results of measures completed, ongoing and planned in the energy sector

Table 3.6.1	Measure	Period, years	Energy savings by the end of 2012, GWh	Energy savings by the end of 2020, GWh
3.6.2.	Support from the EU Structural Funds for 2007-2013. Operational Programme for Economic Growth	2007-2013	n/a	n/a
3.6.3.	Support from the EU Structural Funds for 2007-2013. Operational Programme for Promotion of Cohesion	2007-2013	124.37	n/a
3.6.4.	Voluntary agreements with energy companies	2010-2011, 2010-2012, 2010-2015, 2011-2014, 2011-2013, 2010-2020	331.55	357.58
3.6.5.	Lithuanian Environmental Investment Fund	2012	n/a	n/a
3.6.6.	Special Climate Change Programme	2012	n/a	n/a
3.6.7.	Requirements to energy accounting and to the installation of metering devices to carry out such accounting	Start in 2002	n/a	n/a
3.6.8.	Installation of smart energy meters at final energy consumers	Start in 2008	n/a	n/a
–	Support from the EU Structural Funds for 2014-2020 ¹⁴	2014–2020	not applicable	n/a
TOTAL:			455.92	357.58

Table 3.6.2. Support from the EU Structural Funds for 2007-2013. Operational Programme for Economic Growth

¹⁴ The plan is to invest about 14% of the EU Structural Funds allocated for the period of 2014-2020 in the areas of energy efficiency and renewable energy.

Measure	Support from the EU Structural Funds for 2007-2013. Operational Programme for Economic Growth
Period	2007-2013
Objective	<p>The aim of Measure “Upgrading and development of the electricity distribution system” is to upgrade the electricity distribution system with a view to enhancing the reliability of electricity distribution.</p> <p>The aim of Measure “Upgrading and development of the heating system” is to upgrade the heating system with a view to enhancing the reliability and quality of heating</p>
Legislation	Annex to the Operational Programme for Economic Growth approved by Resolution No 788 of the Government of the Republic of Lithuania of 23 July 2008
Activities supported	<p>Activities supported under Measure “Upgrading and development of the electricity distribution system”: construction of electricity distribution lines, transformer substations and distribution boards; upgrading of transformer substations and distribution boards; replacement of overhead electricity lines with cables; implementation of automated control, data collection and transmission and energy metering systems.</p> <p>Activities supported under Measure “Upgrading and development of the heating system”: replacement of worn district heating networks with new ones making use of state-of-the-art technologies; construction of new district heating networks</p>
Budget and source of funding	<p>Measure “Upgrading and development of the electricity distribution system” has received LTL 66.7 million from the EU Structural Funds, the use of state and municipal budget funds of the Republic of Lithuania is not envisaged, funds of other legal or natural persons – at least LTL 100 million, the total being LTL 166.7 million.</p> <p>Measure “Upgrading and development of the heating system” has received LTL 200.9 million from the EU Structural Funds, the use of state and municipal budget funds of the Republic of Lithuania is not envisaged, funds of other legal or natural persons – at least LTL 200.9 million, the total being LTL 401.9 million</p>
Implementing authority	LBSA
Supervisory authority	Ministry of the Economy of the Republic of Lithuania
Outcomes	<p>5 projects are envisaged under Measure “Upgrading and development of the electricity distribution system”, and their implementation will mean that 108 200 electricity consumers will enjoy more reliable electricity supply, there will be 81.35 km of new electricity lines and 29 new/upgraded transformer substations/distribution boards.</p> <p>84 projects are envisaged under Measure “Upgrading and development of the heating system”, and their implementation will mean that 707 000 consumers will enjoy more reliable heating of better quality. The upgraded length of the heating system pipelines of contract single pipes of 100 mm in diameter is 678.5 km.</p> <p>In accordance with the data supplied by 23 energy companies, energy savings in these companies in 2012 under Measure “Upgrading and</p>

	development of the heating system” were 51.13 GWh
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Table 3.6.3. Support from the EU Structural Funds for 2007-2013. Operational Programme for Promotion of Cohesion

Measure	Support from the EU Structural Funds for 2007-2013. Operational Programme for Promotion of Cohesion
Period	2007-2013
Objective	The aim of Measure “Improvement of energy generation efficiency” is to implement modern and efficient energy generation technology, thus improving energy generation efficiency. The aim of Measure “Use of renewable energy resources for energy generation” is to promote the use of renewable energy resources for energy generation
Legislation	Annex to the Operational Programme for Promotion of Cohesion approved by Resolution No 787 of the Government of the Republic of Lithuania of 23 July 2008
Activities supported	Activities supported under Measure “Improvement of energy generation efficiency”: upgrading of cogeneration plants and connecting them to heating systems (improvement of energy generation efficiency; upgrading of boiler houses and connecting them to heating systems (improvement of energy generation efficiency); construction of high-efficiency cogeneration plants, except for those running on renewable energy resources, and connecting them to heating systems (a heating system also includes a heat consumption system). Activities supported under Measure “Use of renewable energy resources for energy generation”: upgrading of boiler houses supplying heat to heating systems (replacement of the fuel used with biomass); upgrading of cogeneration plants supplying heat to heating systems (replacement of the fuel used with biomass); construction of new boiler houses running on renewable energy resources and connecting them to heating systems (a heating system also includes a heat consumption system); construction of new efficient cogeneration plants running on renewable energy resources, except for landfill gas (biogas generated through natural degradation of organic substances in landfills) and connecting them to heating systems (a heating system also includes a heat consumption system)
Budget and source of funding	Measure “Improvement of energy generation efficiency” has received LTL 26.1 million from the EU funds, the use of state and municipal budget funds of the Republic of Lithuania is not envisaged, funds of other legal or natural persons – at least LTL 26.1 million, the total being LTL 52.2 million. Measure “Use of renewable energy resources for energy generation” has received LTL 291.1 million from the EU funds, the use of state and municipal budget funds of the Republic of Lithuania is not envisaged, funds of other legal or natural persons – at least LTL 291.1 million, the total being LTL 582.3 million
Implementing	LBSA

authority	
Supervisory authority	Ministry of the Economy of the Republic of Lithuania
Outcomes	<p>6 projects are provided for under Measure “Improvement of energy generation efficiency”, and their implementation will mean that 6 new energy generation facilities of the cumulative energy generation capacity of 24.13 MW will be constructed/upgraded.</p> <p>15 projects are provided for under Measure “Use of renewable energy resources for energy generation”, and their implementation will mean that 15 new energy generation facilities running on biomass will be constructed and the cumulative increase in capacity of energy generation facilities running on biomass will be 158.6 MW.</p> <p>In accordance with the data supplied by 8 energy companies, energy savings in 2012 under Measure “Use of renewable energy resources for energy generation” were 36.98 GWh</p>

Table 3.6.4. Voluntary agreements with energy companies

Measure	Voluntary agreements with energy companies
Period	2010-2011, 2010-2012, 2010-2015, 2011-2014, 2011-2013, 2010-2020
Objective	To improve EE and to reduce the negative impact on the environment by improving energy efficiency. Indicative quantitative EE improvement targets have been set for Lithuania’s electricity companies, heat suppliers and natural gas suppliers: between 2010 and 2020 to save 10% of energy consumed by final energy consumers as compared to the average consumption in 2001-2005, to reduce losses in heat mains to 10% and electricity losses in networks by 20%
Legislation	Procedure for concluding voluntary agreements approved by Order No 1-195 of the Minister for Energy of the Republic of Lithuania of 29 October 2009
Budget and source of funding	Own funds of energy companies
Implementing authority	Ministry of Energy of the Republic of Lithuania
Supervisory authority	Enterprises having concluded voluntary agreements and the state enterprise the Energy Agency
Outcomes	<p>Voluntary agreements have been signed with 8 heat supplying enterprises undertaking to save 355.38 GWh during the agreed period.</p> <p>A voluntary agreement has also been signed with 1 electricity transmission enterprise undertaking to save 2.2 GWh of electricity during the agreed period.</p> <p>Actual savings in 2012 are 169.89 GWh.</p> <p>Total estimated energy savings between the start of the agreement and 2012 (inclusive) is 331.55 GWh</p>

Table 3.6.5. Lithuanian Environmental Investment Fund

Measure	Lithuanian Environmental Investment Fund
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Period	2012
Objective	Support is provided to projects relating to the reduction of pollutant and greenhouse gas emissions into the atmosphere (use of cleaner fuel, implementation of cleaner technologies and pollutant treatment facilities, energy efficiency improvement, etc.)
Legislation	Procedure for financing and supervising investment projects of the Lithuanian Environmental Investment Fund approved by Order No 437 of the Minister for the Environment of the Republic of Lithuania of 29 August 2003. Areas of financing for absorption of funds under the Programme of the Lithuanian Environmental Investment Fund for 2012 approved by Order No D1-256 of the Minister for the Environment of the Republic of Lithuania of 22 March 2012
Activities supported	Investment projects are supported by granting preferential loans and subsidies. The Fund finances environmentally beneficial investment projects of legal persons duly registered and conducting economic activities in the Republic of Lithuania the implementation of which diminishes the adverse effect of economic activity on the environment
Budget and source of funding	In 2012 the amount of programme funds allocated to energy projects was LTL 3.72 million
Implementing authority	LEIF
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes	In 2012 the programme funds were allocated to 10 projects. Funding was provided to such projects as repairs and reconstruction of boiler houses, use of residual heat, upgrading of the heating system, heat energy generation by using natural gas instead of coal, installation of a smoke economiser, automation of kindling and combustion processes and installation of a burner and a condensing economiser

Table 3.6.6. Special Climate Change Programme

Measure	Special Climate Change Programme
Period	2012
Objective	Use of renewable energy sources (solar, wind, geothermal energy, biofuel, etc.) in public buildings and enterprises engaging in economic commercial activities
Legislation	Law No XI-329 of the Seimas of the Republic of Lithuania of 7 July 2009 on financial instruments for climate change management
Activities supported	Installation of biofuel boilers of the capacity of up to 500 kW in public buildings; Installation of biofuel boilers of the capacity between 500 kW and 5 MW for district heating in municipalities where the total population is no more than 100 000 residents
Budget and source of funding	The funding allocated to energy projects in 2012 under Measure "Installation of biofuel boilers of the capacity of up to 500 kW in public buildings" was LTL 25.61 million, and under Measure

	“Installation of biofuel boilers of the capacity between 500 kW and 5 MW for district heating in municipalities where the total population is no more than 100 000 residents” – LTL 39.99 million
Implementing authority	Budgetary institution Lithuanian Environmental Investment Fund
Supervisory authority	Ministry of the Environment of the Republic of Lithuania
Outcomes	The funding under Measure “Installation of biofuel boilers of the capacity of up to 500 kW in public buildings” was allocated to 80 projects, and under Measure “Installation of biofuel boilers of the capacity between 500 kW and 5 MW for district heating in municipalities where the total population is no more than 100 000 residents” – to 32 projects. Projects supported by the funds of the Special Climate Change Programme are ongoing, so data will be supplied in 2014-2015

3.6.1. Comprehensive assessment of the potential for the application of high-efficiency cogeneration and efficient district heating and cooling

In accordance with Article 14(1) of Directive 2012/27/EU, the potential for the development of high-efficiency cogeneration in 2014-2021 has been assessed. The assessment has established some potential for cogeneration in Lithuania. The study focused on an analysis of district heating data delivered by heat suppliers as well as information obtained from the Lithuanian Confederation of Industrialists on the use of residual heat in enterprises belonging to the Confederation. The selected study model simulates existing heat generation facilities running on various fuels and prospective heat generation facilities of the future. The assessment of the potential for the development of cogeneration is based on the following key criteria:

- (a) where the country’s heat generation balance (fuels used) does not change;
- (b) the lowest energy price scenario.

The assessment of the potential for the development of cogeneration offers an overview of the demand and forecasts for heating and cooling and a cost-benefit analysis of cogeneration facilities. The analysis covers the potential of cogeneration installations in certain cities of Lithuania. A sensitivity test was conducted for the net value of cogeneration projects running on renewable fuels. This assessment of the potential has revealed that additional cost-effective development of cogeneration in Lithuania can reach up to 200 MW of electric capacity in Vilnius and Kaunas. In this case, existing gas facilities will switch to biofuel, and the demand may in part be met by waste incineration cogeneration plants.

It has been established that the potential for saving primary fuel in the district heating sector may amount to 35 ktoe, while primary fuel savings due to the decommissioning of the Lithuanian power plant may amount to 180 ktoe (2 TWh).

Article 7 of Law No XII-492 amending Articles 2, 3, 7, 8, 10 and 32 of, and adding Article 81 to, the Law the Republic of Lithuania of 2 July 2013 on the heating sector defines the National Heating Sector Development Programme. Having completed the assessment of the potential for the application of high-efficiency cogeneration and efficient district heating, the Ministry of Energy of the Republic of Lithuania drafted the National Heating Sector

Development Plan and submitted it for approval to the Government of the Republic of Lithuania. The National Heating Sector Development Programme sets out the following:

(1) heating sector development and upgrading measures and technical solutions, including requirements concerning alternative energy or fuel use and its share, capacities and installation deadlines of heating facilities and levels of losses in heat transmission networks;

(2) optimum model for developing the use of energy or fuels for heat or electricity generation and cogeneration, the need and potential for the installation of heat generation facilities in certain municipalities;

(3) areas where demand for heat must be met using residual heat and heat generated from municipal waste and/or high-efficiency cogeneration;

(4) scope of investment, the need for funding and sources of funding for the development and upgrading of the heating sector;

(5) ways and forms of implementing heating sector development and upgrading measures and solutions (projects implemented by a municipality or an enterprise reporting to it, investment within the framework of a public-private partnership and/or concessions, competitions, investments by private initiative or other ways), a plan, schedule and deadlines;

(6) infrastructure and assets owned by, or entrusted to, municipalities or municipal enterprises which, by a decision of the municipal council (and where no such decision is adopted by the deadline set, by a special-purpose law), must be transferred to state ownership with a view to ensuring the proper implementation of heating sector development and upgrading measures and solutions as planned;

(7) other conditions required for introducing and implementing objectives and implementing measures for the long-term integrated development and upgrading of heat generation, cogeneration and heat transmission.

The National Heating Sector Development Programme is drawn up for a period of 7 years. The National Heating Sector Development Programme may be renewed taking into account the evolution of heat generation and transmission technologies, the competitive environment, trends in heat generation prices, changes in the levels of environmental pollution and other significant factors. The National Heating Sector Development Programme is implemented, within their remit, by state and municipal authorities and bodies and/or other designated persons. The implementation of the Heating Sector Development Programme is coordinated, supervised and monitored by an authority authorised by the Government of the Republic of Lithuania. Persons implementing the Programme measures and solutions as well as state and municipal authorities and bodies, within their remit and in accordance with the procedure laid down by the Ministry of Energy, provide information on the implementation of the measures and solutions envisaged in the National Heating Sector Development Programme.

The draft resolution of the Government of the Republic of Lithuania approving the National Heating Sector Development Programme for 2014-2020 was published on 21 March 2014. The aim of the Programme is to assess and establish the potential for the development of the heating sector in Lithuania and development priorities, goals and objectives as well as their implementation opportunities and measures, taking into account the developments in the sectors of the environment and energy on the national and international levels. Paragraph 5 of the Programme stipulates that the strategic goal of Lithuania in the heating sector is to improve the efficiency of heat generation, transmission and consumption, at the same time replacing natural gas used for heat generation with biomass and reducing heating costs. The support granted is also to help to expand local electricity generation using high-efficiency cogeneration.

The draft resolution of the Government of the Republic of Lithuania approving the National Programme for the Development of Renewable Energy Resources was published on

25 March 2014. Paragraph 23.4 of the Programme states that in 2012 biofuel cogeneration facilities operating in Lithuania generated 176 GWh of electricity with the cumulative electric capacity of 41 MW. The theoretical potential of biofuel plants is sufficient to meet the electricity demand of the whole of Lithuania, while the technical potential only exists for efficient heat consumption, i.e. for the connection of biofuel plants to existing district heating systems. The technical potential is about 350 MW.

3.6.2. Other measures to improve heating and cooling efficiency

Law No IX-1565 of the Republic of Lithuania on the heating sector was adopted on 20 May 2003. Its objectives include improving the efficiency of heat generation, transmission and consumption, wider use of local fuel, biofuel and renewable energy resources for heat generation, and reducing the adverse effects of the heating energy sector on the environment. Article 4 of the Law states that cogeneration is a service of public interest. The state (municipalities) promotes the buying-in of heat generated from biofuel, renewable energy resources, waste incineration and geothermal energy to heating systems. Such buying-in is a service of public interest. Article 10 of the Law stipulates that the National Control Commission for Prices and Energy must, when laying down the procedures and conditions for buying in heat from independent heat producers, take into account the need to ensure effective competition in the heat generation sector, the principles of promoting the use of residual and renewable energy resources for heat generation and the right of heat consumers to receive heat at the lowest cost. In all cases, heat bought in from independent heat producers cannot be more expensive than comparative heat generation costs of the heat supplier.

Implementing legislation relating to the Law on the heating sector

By Resolution No 665 of 9 July 2008, the Government of the Republic of Lithuania approved an amendment to Resolution No 307 of the Government of the Republic of Lithuania of 22 March 2004 approving axes for the development of the heating sector. Axes for the development of the heating sector are approved with a view to restructuring heating systems so that, by combining this method with autonomous heating sources, consumer needs are met at the lowest cost, whilst also meeting environmental requirements. The following axes for the development of the heating sector have been approved:

1. Development of competition in the heating sector. To that end, one of the goals is to create better conditions for the use of various fuels (fuel oil with low sulphur content, light fuel oil, liquefied gas, coal, wood, wood pellets, straw, peat, municipal and other waste of high calorific value not suitable for recycling, waste energy resources) for heat generation, and ensuring that these fuels are accessible to small heat producers.

2. Systemic development of the heating sector. To achieve this, the goals include improvement and development of the database of heating companies and their activities created by the National Control Commission for Prices and Energy, the procedure for data submission and use so that the data collected are used for research, for the planning of the country's heating sector, updating the development axes, and for the monitoring and control of heating enterprises; also improvement of the planning of heating activities by rationally distributing financial resources for the implementation of heating efficiency improvement measures and enhancing heat generation and supply efficiency, security of supply and reliability.

3. Development of the capacity of efficient cogeneration plants so as to improve energy generation efficiency and the security and reliability of supply and to reduce environmental pollution. To that end, construction of efficient cogeneration plants. In accordance with the established procedures and prices, buying-in of electricity generated by

cogeneration plants based on the demand for heat, thus promoting the development, construction and upgrading of these plants also with the EU Structural Funds. Moreover, ensuring that in 2020 cogeneration plants generate at least 75% of heat supplied to heating systems.

4. Reduction of environmental pollution by using a variety of energy sources for heat generation. Construction of new and reconstruction of existing boiler houses, fuelling them primarily with local and renewable energy resources, natural gas and non-harmful organic substances. In accordance with the requirements of Lithuanian and EU legislation on the limiting of emissions of pollutants into the air from combustion plants, ensuring that emissions from boiler houses and plants contain no more sulphur dioxide than is stipulated in legislation. Improvement of the system of environmental pollution taxes promoting the improvement of EE, and reduction of the adverse impact on the environment in accordance with the “polluter pays” principle.

5. Improvement of heat efficiency in households.

By Resolution No 279 of 17 March 2010 the Government of the Republic of Lithuania approved an amendment to Resolution No 982 of the Government of the Republic of Lithuania of 25 July 2003 approving legislation necessary for the implementation of the Law of the Republic of Lithuania on the heating sector, thus amending the Rules for heat supply licensing. These Rules lay down principles based on which heat supply licences are issued. They stipulate that a person engaging in heat supply activities must in a reliable and efficient manner operate heat generation installations and/or heat transmission networks ensuring their maintenance, safe heat supply and the development of heating systems in accordance with environmental and public health requirements.

The Cogeneration Development Plan was approved by Order No 1-174 of the Minister for Energy of the Republic of Lithuania of 22 June 2010. It sets out that between 2011 and 2015 capacities of cogeneration plants are to increase from 569.45 MW to 681.74 MW.

By its Resolution No O3-202 of 4 October 2010 the National Control Commission for Prices and Energy approved the Procedure for and conditions of buying-in heat from independent heat producers seeking to create conditions for ensuring efficient competition in heat generation, the principles of promoting the use of residual and renewable energy resources for heat generation and the right of heat consumers to receive heat at the lowest cost. Paragraph 15 of the Procedure sets out that where independent heat producers apply the same heat price, the heat supplier must buy in heat from independent heat producers in accordance with the following ranking of priorities:

1. from cogeneration installations using renewable energy resources;
2. generated from renewable energy resources by incinerating waste;
3. residual, from industries, by incinerating waste;
4. from high-efficiency cogeneration facilities;
5. from boiler houses using fossil fuels.

The Procedure stipulates that where the capacity of heat generation installations operated by the heat supplier is sufficient to meet the heat demand of consumers, the heat supplier must buy in only heat generated by independent heat producers that meets the requirements of quality, reliability of supply and environmental protection and is sold at a lower price than comparative heat generation costs of heat suppliers. The heat supplier must operate, maintain, manage and expand transmission networks so as to create objective and non-discriminatory conditions for the use of transmission networks for all heat producers.

3.6.3. Energy transformation, transmission and distribution and responding to demand

3.6.3.1. Energy efficiency criteria for regulating network tariffs and energy networks

1. Measures to ensure that tariff incentives adversely affecting efficiency are removed:

Article 15(4) of Directive 2012/27/EU sets out that those incentives in transmission and distribution tariffs that are detrimental to the overall efficiency of the generation, transmission, distribution and supply of electricity must be removed and that network operators are to be incentivised to improve efficiency in infrastructure design and operation. Article 69(4) of the Law of the Republic of Lithuania of 20 July 2000 on electricity ('the Law on electricity') sets out that when establishing price ceilings for the transmission, distribution and public provision of services and assessing prices and tariffs presented by service providers, the National Control Commission for Prices and Energy ensures that transmission system and distribution network operators are incentivised for short and medium-term periods to improve electricity efficiency, to promote electricity market integration and security of supply and to support related research. Tariff incentives that are detrimental to the overall efficiency of the generation, transmission, distribution and supply of electricity are not present in the Republic of Lithuania.

2. Measures to incentivise network operators to improve efficiency in infrastructure design and operation.

Article 19(2) of the Law of the Republic of Lithuania of 16 May 2002 on energy stipulates that state-regulated prices are to be established by setting the necessary energy production, generation, purchase, transmission, distribution and supply costs, assessing reasonable return on investment and/or return on property and possibly taking into account the development of the energy sector and energy efficiency as well as the provision of services of public interest.

One of the objectives of the Law on electricity is to ensure and promote the efficiency of electricity generation, transmission, distribution and consumption. Article 4 of the Law stipulates that the improvement of electricity efficiency and the use of advanced electricity network technologies and renewable energy resources in the electricity sector are some of the principles underlying the state management, regulation, supervision and control of the electricity sector activity.

Article 18 of the Law sets out that having regard to the requirements of electricity supply security and reliability, quality, efficiency, consumption, management and environmental protection and improving the conditions for using the system, the transmission system operator plans for long-term development of the electricity system coordinating it with the Ministry of Energy, the National Control Commission for Prices and Energy and distribution network operators. The planning of long-term development of the electricity system must be based on a scientific, technical and economic assessment. The transmission system operator and distribution network operators must cooperate to ensure the optimal development of transmission and distribution networks. Article 21 sets out that permits for the expansion of electricity generation capacity are not issued where it is established that the person's activity to be conducted will not meet the following requirements:

- electricity installations and related equipment will not be safe and reliable and will have detrimental effects on electricity networks to which these installations are connected, or will create preconditions for such adverse effects;
- will have adverse effects on human health, property and living environment or will create preconditions for such adverse effects;
- will not meet environmental requirements;
- will not meet land use and construction site selection requirements;

- will not meet EE requirements;
- will not match the applicant's technical, financial and managerial capacity;
- will not meet fuel selection requirements.

By Resolution No 740 of 8 July 2009 the Government of the Republic of Lithuania approved the Electricity Market Development Plan for Lithuania. The plan sets out the following objectives of the Government of the Republic of Lithuania:

- to enable Lithuanian electricity consumers, in accordance with their individual needs, to provide themselves with electricity supply at an easily and clearly comparable and transparent price, to freely choose the electricity supplier and use the mechanisms of the free market in electricity;
- to create an efficient competitive environment among electricity producers, importers and suppliers;
- to enable electricity supplier without limitations, freely to trade in electricity (both imported from and exported to the EU Member States) and to set transparent conditions of trading in electricity imported from outside of the EU Member States;
- to implement measures to create a common electricity market of the Baltic States in accordance with the principles and experience of the electricity market of the Nordic countries (Nord Pool).

Implementing legislation relating to the Law on electricity

By Resolution No 1474 of 5 December 2001 approving legislation necessary for the implementation of the Law of the Republic of Lithuania on electricity, the Government of the Republic of Lithuania approved the Rules for licensing activities in the electricity sector. Paragraph 48 of the Rules sets out that licence holders must conduct the licensed activity in an efficient and economical manner, ensure the reliability of electricity transmission and/or supply, security of the activity (technical safety), quality, consumer protection and environmental requirements, not discriminate against consumers, electricity network users, suppliers and producers and follow the principles of fair competition, the public nature of activities and visibility. The Rules stipulate that a person holding a distribution licence must maintain, supervise, manage and develop distribution networks and interconnectors with other networks ensuring the reliable functioning of distribution network installations and efficient and secure supply in accordance with environmental requirements.

By Resolution No 1474 of 5 December 2001 approving legislation necessary for the implementation of the Law of the Republic of Lithuania on electricity, the Government of the Republic of Lithuania also approved the Procedure for the promotion of the generation and purchase of electricity generated using renewable energy resources. The Procedure lays down general criteria and conditions of and requirements to the promotion of the generation and purchase of electricity generated in the Republic of Lithuania with the use of renewable energy resources.

By its Resolution No O3-123 of 31 May 2011 the National Control Commission for Prices and Energy adopted the Methodology for setting buy-in prices of electricity generated by cogeneration plants. The objective of the Methodology is to lay down transparent, objective and non-discriminatory principles for cogeneration plants for establishing electricity buy-in prices where these plants supply heat to heating systems.

By its Resolution No O3-233 of 29 July 2011 the National Control Commission for Prices and Energy adopted the Methodology for setting tariffs for electricity generated by using renewable energy resources. The objective of the Methodology is to lay down transparent, objective and non-discriminatory principles for setting buy-in tariffs and maximal tariffs.

3. Measures to ensure that the supplier is enabled to increase consumers' contribution to system efficiency through tariffs:

Article 19(1) of the Law No XII-382 of 18 June 2013 amending Article 2, 19 and 23 of and adding Article 19¹ to the Law of the Republic of Lithuania on energy stipulates that prices in the energy sector are a matter of agreement and are regulated by the state and that prices are regulated by approving prices of services or energy and setting their ceilings or laying down a procedure for price regulation.

Article 69(6) of the Law on electricity sets out that where the National Control Commission for Prices and Energy sets price ceilings, service providers may differentiate prices of services by their objective properties. When differentiating prices, service providers must abide by the principle of non-discrimination and properly take into account the principle of EE improvement. The price of the transmission service may be differentiated by dividing it into its constituents for electricity consumers, producers and importers importing electricity from countries other than the Member States. The price of the transmission service, the price of the dispatch service and the price of the distribution service in all cases, except for the part of the service price meeting the public interest, may be differentiated by dividing them into constituents of capacity and electricity. The public electricity price may be differentiated by dividing it into constituents of access and electricity. Service providers lay down the procedure for price differentiation to be approved by the National Control Commission for Prices and Energy.

Article 49 of the Law on electricity sets out that with a view to protecting consumers' rights and legitimate interests, the Government of the Republic of Lithuania or an institution authorised thereby undertakes appropriate measures to tackle the issue of the lack of electricity, drafts related national energy action plans, in accordance with the statutory procedure grants social security system privileges to ensure the required electricity supply to socially vulnerable consumers and their groups and support with a view to ensuring electricity efficiency improvement.

Article 51(5) of the said Law sets out that on their websites or the website of a supplier association to which the supplier belongs and/or the website of an electricity exchange suppliers publish and at the request of consumers provide:

- links to sources of information offering understandable information on the environmental impact including greenhouse gas and radioactive waste emissions generated by electricity generation during the previous year;
- contact information of consumer organisations, associations, agencies or similar bodies including website addresses where one can find information on EE improvement measures, comparative descriptions of final customers and/or objective technical specifications of energy-consuming equipment.

By its Resolution No O3-199 of 9 November 2009 the National Control Commission for Prices and Energy adopted the Methodology for setting public electricity prices, the price of the public supply service and their ceilings. Paragraph 65 of the Methodology sets out that the public electricity price may be differentiated by dividing it into types of tariffs by consumer category or group, period of electricity consumption, electricity

consumption, rated capacity as well as other objective properties selected by the service provider that would make it possible to ensure the improvement of the efficiency of activity by setting various types of tariffs. When setting and differentiating prices and tariffs, any discrimination against consumers is prohibited. Moreover, paragraph 66 of sets out that the price of the public supply service may be differentiated by number of consumers, consumer group, category and other objective properties selected by the service provider that would make it possible to ensure the improvement of the efficiency of activity by setting various types of tariffs.

Implementing legislation relating to the Law on electricity

By Resolution No 1474 of 5 December 2001 approving legislation necessary for the implementation of the Law of the Republic of Lithuania on electricity, the Government of the Republic of Lithuania approved the Rules for licensing activities in the electricity sector. Paragraph 58 thereof sets out that licence holders within their remit inform and consult consumers and network users in respect of electricity efficiency, services provided, service provision conditions, electricity and service prices, prices and conditions of connecting to electricity networks and planned amendments to contract terms and conditions. Within their remit and no later than 1 month prior to the planned amendments to contract terms and conditions and prices licence holders directly (in writing or otherwise) inform consumers accordingly. Information by licence holders on costs of regulated activities, network operation, upgrading, development, investment in network development, price and tariff structure and conditions of providing services is public.

Order No 1-38 of the Minister for Energy of the Republic of Lithuania of 11 February 2010 approved the Rules for the supply and use of electricity regulating the relations of electricity consumers with suppliers, distribution network operators and the transmission system operator. Paragraph 48 of the Rules sets out that the supplier must provide consumers with information on electricity efficiency, services provided, service provision conditions, service and electricity prices and tariffs and planned amendments to contracts and other information provided for in the legislation and contracts concluded.

By its Resolution No O3-252 of 19 September 2012 the National Control Commission for Prices and Energy adopted the Procedure for the differentiation of prices of electricity transmission and distribution, public supply services and public electricity prices. Paragraph 6 of the Procedure stipulates that service providers differentiating prices must take proper account of the principle of EE improvement laid down in Article 69(6) of the Law on electricity. The Procedure also sets out that the public electricity price may be differentiated by dividing it into constituents of access and electricity. The public electricity price may be differentiated by dividing it by consumer category or group, period of electricity consumption, electricity consumption and other objective properties selected by the service provider that would make it possible to ensure through the differentiation the improvement of electricity efficiency and the reduction of costs of the overall electricity system. The procedure for differentiating the public electricity price and the public supply service price set by the public supplier (as amended after it was last notified to the Commission) and supporting documents are supplied to the Commission for coordination together with a request to publish the price and tariffs in accordance with the procedure and the deadlines set in the legislation.

Methodology for calculating price ceilings for natural gas

By its Resolution No O3-157 of 13 October 2009 amending the Methodology for calculating price ceilings for the transmission and distribution of natural gas the National Control Commission for Prices and Energy approved the Methodology for calculating price ceilings for natural gas. Paragraph 70 of the Methodology sets out that natural gas transmission and distribution prices may be differentiated by consumer (system user) group, gas consumption, capacity, period and reliability of gas supply. For household consumers gas distribution prices are differentiated by gas consumption. For non-household consumers gas transmission and distribution prices are differentiated by gas quantity and capacity. When establishing and differentiating prices, any discrimination against consumers and cross-subsidising between consumers or their groups are prohibited. When differentiating prices, costs generated must be taken into account.

3.6.3.2. Facilitation and promotion of demand response

In accordance with Article 15(8) of Directive 2012/27/EU, Lithuania plans that the National Control Commission for Prices and Energy will lay down the technical modalities for the access to and participation in the electricity market of providers of demand response measures. It is envisaged that one of the duties of the transmission system operator will be to guarantee the security, reliability and efficiency of transmission network operation, to ensure all additional conditions necessary for all market participants and providers of demand response measures. In accordance with the plan, the distribution network operator will ensure non-discriminatory conditions of use of distribution networks for electricity network users and providers of demand response measures.

In defining price regulation, it is envisaged that when setting price ceilings or specific prices of services, there is a need to provide for the required investment ensuring efficient activities of an electricity enterprise and creating conditions (when implementing advanced networks and ensuring system security) to provide services to system users that improve energy efficiency including the implementation of demand management and demand response and other measures.

It is envisaged that when establishing price ceilings for the transmission, distribution and public provision of services and assessing prices and tariffs presented by service providers, the National Control Commission for Prices and Energy will ensure that transmission system and distribution network operators are incentivised for short and medium-term periods to improve electricity efficiency by creating conditions for the implementation of smart networks and the assurance of system security when providing system services to network users and when implementing demand management, demand response and other energy efficiency measures, as well as to promote electricity market integration and security of supply and to support related research. It is also envisaged that with a view to ensuring electricity efficiency improvement, when setting price ceilings for transmission, distribution and public supply services and assessing the prices and tariffs presented by service providers, the National Control Commission for Prices and Energy will evaluate the reduction of operational costs of transmission system and distribution network operators due to the implementation of demand and demand response measures and the development of production capacity including savings due to the reduction of costs of transmission or distribution services or network investment and optimal network operation. It is envisaged that regulation of prices of electricity transmission and distribution and public supply services will not prevent operators from providing services relating to electricity demand management, demand response and electricity capacity development measures including the following measures:

- the shifting of the load from peak to off-peak times by final customers taking into account the availability of renewable energy, energy from cogeneration and distributed generation;
- energy savings from demand response by energy aggregators;
- demand reduction from energy efficiency measures undertaken by energy service providers;
- the connection and dispatch of generation sources at lower voltage levels;
- the connection of generation sources from closer location to the consumption.

3.6.3.3. Energy efficiency in network design and operation

In accordance with Article 15(2) of Directive 2012/27/EU, by 30 June 2015 Lithuania plans to conduct an assessment of the energy efficiency potentials of its gas and electricity infrastructure, in particular regarding transmission, distribution, load management and interoperability, and connection to energy generating installations, including access possibilities for micro energy generators. There are also plans to identify concrete measures and investments for the introduction of cost-effective energy efficiency improvements in the network infrastructure, with a timetable for their introduction.

In 2004-2012 technological losses of heat transmission decreased from 21 to 16.1% (from 2 TWh to 1.44 TWh respectively) of the heat supplied to the network. The plan is to introduce rational reductions of technological heat costs in transmission networks. With a view to ensuring reliably and quality heat supply, heat transmission networks are to be renovated depending on their level of depreciation and changes in heat consumption. The plan is to reduce heating network losses to 15% by 2020 (to 1.22 TWh taking into account reduced heat consumption). The reliable and quality heat transmission is also to be ensured by renovating depreciated heat transmission networks. With a view to reducing heat energy losses in transmission networks and adapting them to consumer needs, a part of heat transmission networks is to be renovated and adapted in accordance with the system needs. This will reduce not only heat loss costs but also the need for funds for network operation and pressure maintenance. About 300 to 350 km of heat mains (in actual km) are to be renovated by 2020.

3.6.4. Metering and invoicing

Table 3.6.7. Requirements to energy accounting and to the installation of metering devices to carry out such accounting

Measure	Requirements to energy accounting and to the installation of metering devices to carry out such accounting
Period	Start in 2002
Objective	To inform consumers about energy consumption, thus motivating them to save energy
Legislation	Law of the Republic of Lithuania on electricity; Law of the Republic of Lithuania on the heating sector; Rules for the transmission, distribution, storage and supply of natural gas approved by Order No 43 of the Minister for the Economy of the Republic of Lithuania of 5 February 2002
Budget and source of funding	Energy meters are installed and operated by energy companies owning or otherwise managing transmission and distribution facilities at their own cost
Implementing	Energy companies

authority	
Supervisory authority	Energy companies, SEI and Lithuanian Metrology Inspectorate
Outcomes	The possibility to register energy consumption creates conditions for cutting down energy consumption. It is impossible to offer a quantitative assessment of the impact of the measure and to calculate energy savings

Network operators are responsible for organising the metering and accounting of electricity dispatched by electricity networks that they manage. The distribution network operator must organise, implement, use and supervise the accounting of electricity dispatched by distribution networks owned thereby and operate and maintain their equipment ensuring the installation of smart accounting systems.

Accounting equipment for settlements for heat supplied is installed at the point of sale of heat. The heat supplier installs heat accounting meters at their own cost and ensures their proper technical condition and the set precision of measurements and organises checks. In multi-apartment buildings accounting equipment for settlements for heat is installed at the point of sale of heat.

The natural gas supplier must install and operate gas meters at their own cost in consumer premises or next to them.

Table 3.6.8. Installation of smart energy meters at final energy consumers

Measure	Installation of smart energy meters at final energy consumers
Period	Start in 2008
Objective	To enable heat energy, electricity and natural gas consumers to register energy consumption at a specific moment, to learn about energy consumption during a certain period and to read data remotely
Legislation	General Rules for the installation of electric installations approved by Order No 1-22 of the Minister for Energy of the Republic of Lithuania of 3 February 2012 approving the General Rules for the installation of electric installations; Rules for the transmission, distribution, storage and supply of natural gas approved by Order No 43 of the Minister for the Economy of the Republic of Lithuania of 5 February 2002 approving the Rules for the transmission, distribution, storage and supply of natural gas; Rules for the accounting of heat energy and heat carrier quantities approved by Order No 424 of the Minister for the Economy of the Republic of Lithuania of 21 December 1999 approving the Rules for the accounting of heat energy and heat carrier quantities
Budget and source of funding	Own funds of energy companies
Implementing authority	Energy companies
Supervisory authority	Energy companies, SEI and Lithuanian Metrology Inspectorate
Outcomes	A possibility to register energy consumption at a specific moment, to learn about energy consumption during a certain period and to read data remotely creates conditions for reducing energy consumption. It is impossible to offer a quantitative assessment of the impact of the

The objective is to install smart meters at final heat, electricity and natural gas consumers to reflect precisely the actual energy consumption by the final customer and register the specific time when it is consumed. Heat meters must measure and show the integrated heat energy quantities, integrated heat carrier quantities (volume or mass); flow; momentary heat capacity; heat carrier temperatures and temperature differences; pressure (when metering steam-supplied heat energy); active or downtime since the start of the operation.

Heat meters intended for heat sources and consumers of the first accounting group must calculate average temperatures per hour and the quantity of heat carrier supplied and returned within an hour for at least one month or have a computer interface for deriving these data. There must be a possibility to review the data collected on the indicator screen of the heat meter and read them using a portable data collector or other means.

Electricity consumers whose dedicated capacity is more than 50 kW are provided with electricity meters registering the average actual capacity of the integration period (an hour) for at least one month and enabling the consumer to review the data collected on the indicator screen of the electricity meter and/or read them remotely or otherwise, and new consumers' electricity installations are always connected to the operator's electricity networks; where existing meters are replaced with new ones, except for the cases where the installation of such meters is only possible after the reconstruction of the indoor network or where the installation of such meters is not cost-effective; when reconstructing or conducting major repairs of the building owned by the consumer of the total surface area of more than 1 000 sq. m where the price of the reconstruction or major repairs of external walls and engineering systems (heating, ventilation, air conditioning, hot water and lighting) accounts for more than 25% of the residual value of the building, excluding the value of the land parcel on which the building is built, or where more than 25% of the surface area of external walls are reconstructed by insulation them.

Natural gas consumers who consuming more than 100 000 cubic metres of gas per year at the point of delivery are provided with gas meters of gas accounting systems registering the average actual capacity of the integration period (an hour) for at least one month and enabling the consumer to review the data collected on the indicator screen of the metering device and/or read them remotely or otherwise, and new consumers' gas systems are always connected; where existing gas meters of gas accounting systems are replaced where they are depreciated, except for the cases where the installation of such gas accounting systems is only possible after the reconstruction of the consumer's gas system or where the installation of such gas accounting systems is not cost-effective; when reconstructing or conducting major repairs of the building of the total surface area of more than 1 000 sq. m where the price of the reconstruction or major repairs of external walls and engineering systems (heating, ventilation, air conditioning, hot water and lighting) accounts for more than 25% of the residual value of the building, excluding the value of the land parcel on which the building is built, or where more than 25% of the surface area of external walls are reconstructed by insulating them.

Requirement to energy companies to provide invoices and information on the actual energy consumption by consumers. Article 6 of the Law of the Republic of Lithuania on energy sets out that in accordance with the procedure laid down by the Government or an authority authorised thereby in their territory energy companies provide information to energy consumers and municipal authorities on efficient consumption of energy resources and energy, safe and efficient use of energy facilities and installations, energy facilities and

installations under construction and reconstruction, state-regulated energy prices and services provided to energy consumers.

The Law of the Republic of Lithuania on electricity sets out that network operators are responsible for organising the metering and accounting of electricity dispatched by electricity networks that they manage. Article 51(4) of the Law stipulates that electricity suppliers create proper and adequate conditions for consumer access to information and data on payments for electricity supplied to them. Proper and adequate access measures are the submission of an invoice to the consumer or electronic access to consumer payment data or other reasonable measures. At the consumer's request and in the form acceptable to the consumer, when providing electronic or written access, suppliers present:

- current actual electricity prices and actual energy consumption at least once per calendar year;
- current electricity consumption by the consumer and a comparison with electricity consumption during the same period of the previous year;
- where possible, a comparison with the average electricity consumption by a consumer of the same group.

Where the consumer changes the electricity supplier, no later than within 6 weeks unless a shorter period is set in the contract, the former supplier must submit to the consumer the final (closing) invoice for electricity consumed and/or services provided.

The Law of the Republic of Lithuania on the heating sector lays down the procedure for consumer settlements with the heat supplier. A more comprehensive procedure for settlements of household heat consumers with the heat supplier for heat consumer is presented in the Standard Terms and Conditions of heat sales contracts with household heat consumers approved by Order No 1-173 of the Minister for Energy of the Republic of Lithuania of 7 September 2012.

Measures or actions ensuring that when installing smart meters final customers are consulted and informed on how to handle the meter readings and monitor energy consumption are presented below.

At the request of consumers, the Lithuanian electricity distribution network operator AB Lesto presents hourly electricity consumption data¹⁵. In accordance with the data of 1 January 2014, 20 067 units were connected to the reader system. Electricity meters are installed for corporate consumers of the second and third groups (businesses).

Consumers are informed about cumulative consumption data directly by phone.

Where consumers or their representatives participate in replacing or installing the meter, the company staff inform them what information is reflected on the indicator screen of the meter. Where the consumer or their representative is not involved in the meter installation process, a memo on reading the meter readings is left for them.

Information on electricity consumption and meter readings available is also supplied to consumers via the company's self-service website "My Electricity" ("Mano elektra").

The company is implementing an educational energy efficiency improvement project "Only as much as you need". A conference "Energy efficiency solutions. A path towards business competitiveness" is organised for the fourth year in a row. During the conference participants share their experience and knowledge relating to energy efficiency. In 2014 and 2013 the conference was attended respectively by 230 and 260 participants. During the conference the company organises a "Green Protocol" competition for the organisation having made the most rational use of electricity. The purpose of this competition is to urge companies to start to consume energy in a more rational manner, to protect the environment

¹⁵ For consumers whose smart meters are connected to the automated data reading system administrated by the company.

and to encourage everyone around to behave in the same way. The number of enterprises expressing their understanding and willingness to save electricity is currently 130.

In the gas sector in Lithuania, when installing gas metering devices with the RM system at gas accounting points AB Lietuvos dujos provide consultations to system users or consumers in accordance with the working procedure of AB Lietuvos dujos in respect of the potential uses of these RM systems.

The heat supplier UAB Vilniaus energija has implemented a remote smart metering, data transmission and monitoring system which:

- immediately informs about a critical situation or accident by mobile phone or e-mail or where the consumer is connected to the system – on the screen or otherwise;
- collects and stores data. Data are stored since the connection of the facility to the system, and there are facilities for which data collected cover as many as about 10 years. Any data needed are registered: energy consumption, hot water consumption, ingoing and outgoing heating network temperature entering the heating and hot water systems, temperatures, pressures or other parameters needed, and the frequency of registering each parameter of each facility can be selected as required;
- conducts monitoring by collecting data while the system installed makes it possible to carry out monitoring. The system compares the default values with the actual ones. It is possible to set system parameters so that the consumer is informed about any deviations in real time. This helps to learn about emergency situations and eliminate them while the consumer does not even suspect yet that there has been an interference. It is possible to open archive data and review them to understand whether the system always works under the mode set, to optimise parameters, etc.;
- manages the parameters of the heating, hot water, ventilation or other systems selected;
- generates specialised reports.

The heat supplier UAB Vilniaus energija states that all consumers equipped with a smart metering system have been informed at meetings of residents about the possibilities of using the system and the supplier answered all questions important to consumers.

Below is brief information on the course of the installation of smart meters and an explanation of the applicability of the provisions of Article 9(2) of Directive 2012/27/EU.

When implementing the requirements of Directive 2009/72/EC, in September 2012 AB Lesto conducted a cost-benefit analysis of the development of the Smart Electricity Accounting Network in Lithuania. The analysis has shown that the replacement of existing electricity meters with smart ones does not create any added value (additional benefits) either for electricity companies or electricity consumers, and installation costs of smart meters exceed the benefits.

By 2020 the company plans to connect to the reader system smart electricity meters installed at the facilities of business customers of the dedicated capacity of 30 kW and more having consumed over 8 000 kWh of energy within the previous 12 months. At the moment the company automatically (using the reader system) reads about 57% of the total electricity consumption data of consumers.

Information on hourly electricity consumption from electricity meters connected to the reader system is regularly supplied to an independent electricity supplier supplying (selling) electricity to the consumer. This information is also provided to electricity consumers proper whose smart meters are connected to the reader system if they wish to receive this information. The said information is supplied to consumers ensuring the security of smart meters and data transmission and the privacy of final customers in accordance with the requirements of the Law of the Republic of Lithuania on legal protection of personal data and relevant international legislation.

Currently data from consumers' meters are transmitted to the reader system in two ways:

- Via TIC (UAB Technologijų ir inovacijų centras) data transmission network;
- Via GPRS (UAB Omnitel, UAB TELE2).

In both cases there is a dedicated logical network that has no connections with the company's intranet and other networks:

- TIC network has a separate VPN L3 (*Layer 3 Virtual Private Network*) network segment based on MPLS (*Multiprotocol Label Switching*) technology;
- GPRS network has a dedicated logical network with an individual APN (*Access Point Name*).

In both cases there is an individual system of IP addresses for the reader system intended for reading meter data.

At the moment the company considers implementing a pilot project of the installation of smart meters within the sector of Group I (household) customers. The pilot project is to check out implementation alternatives for technical solutions and to assess the scale of investment, benefits and other aspects to be used in accounting the installation of smart meters throughout or in a part of Lithuania. It is envisaged that customers participating in the pilot project whose electricity consumption is metered by smart meters will be informed using IHD (in-home display) screens installed in their homes and the information will be published on the company's self-service website "Mano elektra" where consumers will be able to monitor their electricity consumption, view consumption history, the current payment plan, etc. This way consumers will be able to acquire more detailed information about their electricity consumption habits and start to consume energy in a more efficient way.

Every year taking account of the economic aspect as well, AB Lietuvos dujos allocates some funds to the installation of RM systems and develops related facilities. However it also faces such problems as security of consumer access to databases and the protection of privacy. When exchanging data, it is important to protect confidential data of the system operator and consumers and system users for the secure use of RM systems (identification, system login, data exchange between participants, etc.).

In accordance with the provisions of paragraph 30 of the Procedure for accounting natural gas approved by Order No 1-245 of the Minister for Energy of the Republic of Lithuania of 27 December 2013, RM systems are installed at all points of accounting where gas consumption exceeds 100 000 cubic metres per year. RM systems may also be installed at the request of the consumer or system user in other points of accounting where the consumer or system user covers installation costs of these systems.

Where RM systems are installed, natural gas consumption is registered daily (daily point of accounting). The registration of natural gas consumption on a daily basis enables final customers and the system operator to view actual consumption at the current moment, i.e. the precise time when and how much gas is consumed, to exchange information on gas consumption, gas flow balances and gas distribution in an interactive manner and to communicate without delay when transmitting this information to other related market participants. This enables consumers and system users to have direct control over and manage their gas consumption, which in turn incentivises them to consume gas more efficiently. Daily gas consumption metered using the RM system is also used for settlements. The installation of such modern systems enables the consumer to receive information in real time and reduce or increase gas consumption depending on the needs.

RM systems installed would enable gas system operators to monitor gas consumption patterns of final customers, which would make it more possible to assess prospective consumption trends.

Recently the company has focuses on and invested in small pilot projects for the installation of RM systems at final customers consuming up to 20 000 cubic metres per year. To install these systems without significantly increasing tariffs of distribution services, there is a need for financial support of the European Union.

Information on generating invoices for local market participants using accurate meter data is presented below.

In most cases AB Lesto provides electricity consumers with individual electricity meters. Where meters are connected to the reader system, after the end of the reporting period the reader system reads precise meter data used for generating invoices for electricity dispatched. The rest of the consumers whose meters are not connected to the reader system take and submit to the company (declare) the readings of meters installed in their facilities after the end of the reporting period, and electricity bills are generated based on them. Where there is an arrangement between the consumer and the operator or in statutory cases, invoices may also be generated on the basis of an estimate of average electricity consumption.

For consumers paying for electricity at more than one tariff, the company installs meters that make it possible to register electricity consumption every hour or electricity consumption per month. The company also enables consumers to connect local consumer data reader systems to electricity meters. This way it is possible to obtain data from electricity meters and by analysing them to improve electricity efficiency.

Where no smart meters are installed at consumer facilities, invoices are submitted on the basis of data reported by consumers (meter readings), meter readings taken by the company staff or on the basis of average consumption as provided for in the Rules for the supply and consumption of electricity.

In accordance with paragraph 30 of the Procedure for accounting natural gas approved by Order No 1-245 of the Minister for Energy of the Republic of Lithuania of 27 December 2013: “The distribution system operator installs remote operational data collection systems at all points of accounting where gas consumption exceeds 100 000 cubic metres per year. Remote operational data collection systems may also be installed at the request of the consumer or system user in other points of accounting where the consumer or system user covers reimburses the distribution system operator for installation costs of these systems”. These accounting systems are almost identical to the concept of “smart meters”.

Cost sharing for the installation of smart meters at consumers is a support mechanism of UAB Vilniaus energija to ensure the accurate, transparent and precise accounting of individual heat consumption in multi-apartment buildings and various buildings. Funds for the installation of smart meters at consumers were allocated from the fund of UAB Vilniaus energija, a part of the funds was the EU support and consumers had also to contribute their share. The said support mechanism is not used at present.

Final customers receive invoices based on actual consumption.

Invoices for electricity consumed are submitted to consumers on a monthly basis. Where electricity consumption is established by analysing data of the reader system or data of meter checks conducted by AB Lesto, invoices submitted to consumers are based on actual consumption.

In other cases¹⁶ invoices based on actual consumption are issued to customers receiving invoices at least once a year, and information contained in invoices is supplied at least on a quarterly basis where a relevant request is filed or where consumers opt for electronic billing. In other cases invoices are issued and information contained in them is presented on a monthly basis or at least twice a year.

¹⁶ Where consumers’ meters are not connected to the reader system, it is consumers proper who declare energy consumption on a monthly basis.

Invoices based on actual gas consumption are issued and submitted to system users on a monthly basis electronically. The invoice specifies the actual gas consumption established, the current actual price depending on the consumer price group, the amount account for the quantity distributed and a report for the reporting period.

UAB Vilniaus energija provides information that its smart metering system makes it possible to establish the intensity of the registration of meter data in accordance with the consumer's needs.

The frequency of providing complementary information on actual consumption to the consumer is discussed below.

Information of actual consumption is included in invoices on a monthly basis where electricity consumption is established by analysing data of the reader system or data of meter checks conducted by AB Lesto.

On the self-service website "Mano elektra" the company's consumers can continuously access complementary information on invoices and detailed estimates:

- invoice and payment history presented for a period for up to 36 months or for a period since the start date of the contract (where this period is shorter than 36 months);
- invoice and payment history with detailed information on electricity consumption by each consumer's facility;
- a graphic representation of payments for a period for up to 36 months or for a period since the start date of the contract (where this period is shorter than 36 months);
- a graphic representation of consumption (kWh) for a period for up to 36 months or for a period since the start date of the contract (where this period is shorter than 36 months);
- sample invoice and explanations about data included in the invoice.

In the gas sector, through an electronic system for the ordering and administration of distribution services the system user can see gas consumption for each previous day taken via the RM system.

The Directive sets out that "<...> final customers have the possibility of easy access to complementary information on historical consumption allowing detailed self-checks. <...> Complementary information on historical consumption shall include: (a) <...> data for at least the three previous years". Complementary information covers "<...> detailed data according to the time of use for any day, week, month and year. These data shall be made available to the final customer via the internet or the meter interface for the period of at least the previous 24 months or the period since the start of the supply contract if this is shorter". UAB Vilniaus energija has installed a remote smart metering system fit for performing these functions and enabling the implementation of the provisions of Article 10 of Directive 2012/27/EU.

Information on final customers opting for electronic billing.

In accordance with the data of 26 March 2014, electronic billing was chosen by 217 793 consumers of AB Lesto (13.5% of all consumers) while 23 571 consumers receive paper bills (9.77% of all consumers receiving bills).

In the gas sector invoices for the distribution service are submitted to system users and non-household consumers on a monthly basis, no invoices are sent to household consumers as consumers read their meter readings on a monthly basis, declare them and pay for them.

The company has 53 distribution system users with whom it has distribution services contracts and all of whom have opted for electronic billing. Of 6 561 non-household consumers having a natural gas sale and service contract with the company, electronic billing has been chosen by 5 637, i.e. 85.92%.

3.6.5 Energy services

The legislation of the Republic of Lithuania does not impose any constraints on the rights and abilities of ESCs, assemblers, energy advisers and energy consultants to provide energy services, to conduct energy audits and provide other energy efficiency improvement measures.

In Lithuania the market of energy services is not well developed and there are only a few ESCs there. The majority of ESCs on the Lithuanian market act in the district heating sector (in particular, heat generation and supply). The most popular type of contract in Lithuania is very similar to one of the key energy contract types – the chauffage (heating) contract.

By Order No 4-511 of 27 October 2008 approving the template for energy efficiency contracts in buildings the Minister for the Economy of the Republic of Lithuania approved the template for energy efficiency contracts with a view to encouraging energy consumers to conclude energy efficiency contracts with energy service providers.

The activity of energy companies active in Lithuania involves the generation, supply and saving of energy. As profits of these companies is the difference between energy consumed and energy generated, it may be true to say that they also engage in ESC activities (invest in energy efficiency improvement measures).

One of examples of energy companies active in Lithuania is UAB Litesko. Having started its activity in 1998, UAB Litesko currently holds the lease of district heating systems for at least 15 years in cities which it provides with heat. With its eight branches, UAB Litesko conducts its activities in Marijampolė, Alytus, Palanga, Telšiai, Vilkaviškis, Druskininkai, Kelmė, Kazlų Rūda, Biržai and nearby villages.

Another example is UAB E energija. Enterprises of this group generate and provide district heating and hot water to the population, establishments and organisations in Ukmergė, Naujoji Akmenė, Prienai and Trakai cities and regions in Lithuania as well as Rezekne and Gulbene towns in Latvia and Artiomovsk in Ukraine. Among these enterprises, it is also worth mentioning UAB Vilniaus energija and UAB Naujoji šiluma. In the buildings sector energy services are provided by AB City Service.

The household sector of ESCs is associated with high risks. It concerns the way the customer makes a decision (in condominiums decisions are adopted by voting, which requires time-consuming explanatory efforts at the beginning of the project), the customer's solvency, long duration of the project and the complexity of project management.

Although the implementation of energy efficiency projects in condominiums is a complex process associated with the said risks, the implementation of projects in multi-apartment residential houses without a condominium set up is also complicated. However, it may be true to say that another obstacle limiting ESC activities is a slow process of incorporation of condominiums of flat owners in multi-apartment buildings and lack of initiative on behalf of the public.

A major circumstance suppressing the development of energy services in public buildings is the existing practice of upgrading public buildings (owned by municipalities or the state). Funding received from the EU Structural Funds, i.e. investments must be made within a certain defined period, which is why their fragmentation or postponement until sometime in the future and compensation from the savings envisaged are not attractive. If own budgetary funds were used for the upgrading of buildings and efforts were made to optimise investment costs, the hiring of energy services companies would become attractive. With the existing method of funding, an enterprise implementing energy efficiency measures

have significantly fewer liabilities than an ESC and does not give any guarantees of energy savings while the funding is provided by the consumer proper. Practically all project implementation risks are borne by the energy consumer, i.e. the savings planned will be achieved if: energy saving possibilities are identified accurately, the measures proper are implemented with quality and at optimal prices and the project implementation is coordinated seeking to maximise energy savings.

Budgets for the maintenance of public buildings are annual, i.e. in accordance with the current procedure savings attributable to energy efficiency improvement measures do not remain with the body or organisation but are returned to the state budget.

In the sectors of services and industry, there is a lack of substantiated and reliable information about possible savings due to energy efficiency improvement projects and their economic attractiveness. Enterprises often lack the competence needed and cannot identify cost-effective energy saving opportunities. These questions could be answered by an energy audit.

Business entities use the services of enterprises implementing energy efficiency improvement measures. However this form of cooperation is often not an ESC but one-off provision of services.

The legal framework for the provision of energy services in the country is set by the Civil Code regulating the conclusion of transactions as well as the Law on the heating sector stipulating the responsibility of heating and hot water system supervisors.

The legal framework in the Republic of Lithuania does not create obstacles to the market in energy services. Relations between the energy supplier (producer) and the consumer are regulated, i.e. the procedure for calculating energy prices (tariffs) is regulated and relations between the parties are documented in the form of energy sale contracts, etc. Such detailed regulation does not encumber and has no direct impact on the activity of ESCs.

An energy services contract is concluded by and between the consumer and the ESC. The energy supplier is not involved in this arrangement, i.e. the energy supplier as usual issues invoices to the consumer for actual energy consumption while the latter makes payments against those invoices. At the same time, relations of ESCs and energy consumers would be defined in an energy services contract. In this case, relying on the method agreed upon with the consumer, the ESC would assess the actual savings and issue an invoice to the consumer in accordance with the contract provisions. Thus, relations of energy suppliers and energy consumers are clearly separated from those of energy consumers and ESCs. To set standard transaction terms and conditions and thus reduce administrative costs when providing energy services to small consumers, there is a template of the energy efficiency contract in buildings drafted and approved by Order No 4-511 of the Minister for the Economy of 27 October 2008.

In Lithuania the market in energy services is not well developed. ESCs active here offer profitable energy saving measures, and services provided and measures implemented reduce energy consumption. More and more such enterprises are emerging. Apart from the ESCs mentioned in this Chapter, it is also worth making reference to the members of the Lithuanian Energy Consultants Association (<http://www.leka.lt/nariai>) or certified auditors who, in accordance with the provisions of Order No 1-148 of the Minister for Energy of the Republic of Lithuania of 2 August 2012 approving the Procedure for and conditions of conducting energy audits in buildings, installations and technological processes and for the training and appraisal of specialists conducting energy audits in buildings, installations and technological processes, are granted an auditor's qualification to conduct energy audits (http://www.ena.lt/pdfai/Auditorius_duombaze_internete.pdf) contributing to the broader application of various energy saving measures and the reduction of energy consumption.

Among the key measures promoting energy services to be undertaken in the future, what is worth mentioning is the draft Law on energy efficiency as one of the crucial legislative instruments starting the process of achieving energy efficiency targets of 2020.

The draft Law on energy efficiency is published in the information system of draft legislation. This draft instrument sets out that energy services will be provided by persons appraised in accordance with the procedure laid down by the Government or an institution authorised thereby, and with a view to creating more favourable conditions for the development of the market in energy services the institution authorised by the Government will publish information on energy services contracts concluded and recommendations on terms and conditions of energy services contracts ensuring energy savings and interests of final customers as well as information on incentive programmes and other measures to support energy efficiency services projects; will promote the creation of quality marks including quality marks of commercial associations; will publish and regularly update a list of providers of energy services and create conditions for consumers to learn about services offered by energy service providers; will draft sample energy efficiency contracts, provide information on best practices in concluding and implementing energy efficiency contracts including the results of a cost-benefit analysis taking into account the application of the lifecycle method and through other measures will support the use of energy services in the public sector; will compile overviews of the developments on the market in energy services having regard to the implementation of energy efficiency measures listed in the planning documents.

In accordance with the procedure and conditions laid down by the Government or an institution authorised thereby, a joint information centre under the National Control Commission for Prices and Energy will have to provide consumers with comprehensive information on the conditions and procedure for the provision of energy services and energy service providers and other information relating to the provision of energy services.

Complaints and disputes in respect of the provision of energy services will have to be handled by the State Energy Inspectorate under the Ministry of Energy in accordance with the procedure laid down in the Law of the Republic of Lithuania on energy.

In the event of any obstacles relating or unrelated to regulation in using energy efficiency contracts and other energy efficiency services provided that make it possible to establish and/or implement energy efficiency improvement measures, an institution authorised by the Government will have to take steps to eliminate any such obstacles.

Moreover, to support national energy efficiency programmes, a national energy efficiency fund may be established. It will be incorporated, managed and administrated by the Government or an institution authorised thereby in accordance with the procedure and conditions laid down by the Government.

All these incentives are envisaged for the better development of the market in energy services with a view to achieving greater energy savings and energy efficiency improvements.

ANNEXES

ANNEX 1

**ANNUAL REPORT
ON THE PROGRESS OF THE REPUBLIC OF LITHUANIA
ACHIEVED IN IMPLEMENTING
NATIONAL ENERGY EFFICIENCY TARGETS**

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ON THE PROGRESS OF THE REPUBLIC OF LITHUANIA
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NATIONAL ENERGY EFFICIENCY TARGETS**

The annual report on the progress of the Republic of Lithuania achieved in implementing national energy efficiency targets ('the Report') is the second report drafted in accordance with the requirements of Article 24(1) of and Part 1 of Annex XIV to Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (OJ 2012 L 315, p. 1) ('Directive 2012/27/EU').

Like the majority of other European countries, Lithuania faces major challenges in three areas: security of energy supply, competitiveness of the energy sector and sustainable development of the energy sector. Such Lithuania's position is a result of both historic and political circumstances as well as domestic energy resources that have to be limited.

Energy consumption required to generate one unit of the Gross Domestic Product (GDP) in Lithuania is 2.5 times higher than the European Union (EU) average. Lithuania has a vast untapped potential in the area of energy efficiency, especially in the sectors of heating and transport. With improved energy efficiency, energy intensity can be reduced.

By 2020, in Lithuania heat energy consumption in buildings will decrease by 30-40% due to the upgrading of most of them. Given an urgent need for investment, upgrading priority will be given to buildings with the biggest energy efficiency improvement potential.

The sectors of households and transport can yield the biggest energy savings: the total of 65% of the overall saving potential (the saving potential is 590 ktoe).

Given the overall energy saving potential, the key strategic goal in the area of energy efficiency is to attain the common final energy saving target by 2020 – to save 11.7 TWh of final energy (calculated by using the cumulative method).

Lithuania plans to improve energy efficiency in the sector of residential and public buildings by upgrading them. About 48 ktoe of energy are to be saved per year due to the improved heat energy efficiency, public procurement procedures promoting energy saving and the use of energy-efficient appliances.

In the transport sector energy efficiency will be improved by applying measures to upgrade the car fleet, moving on to modern environmentally-friendly public transport, optimising transport infrastructure and promoting investment in environmentally-friendly vehicles.

(a) Estimate of indicators for the year before the previous year (X⁽¹⁷⁾-2 years)

The Report (the Table) presents the minimum statistical information relating energy consumption in Lithuania in 2012 in accordance with Part 1 of Annex XIV to Directive 2012/27/EU with corresponding comparable data for 2011 that make it possible to assess the overall progress towards energy efficiency targets of 2020. Indicators to be mentioned include total final energy consumption in the country and its sectors of the economy (industry, transport, households and services), gross value added in the sectors of industry and services, total number of households and average disposable income of households (cash and in-kind income per household), energy generation and fuel consumption required to generate it, energy transportation and distribution losses, etc.

¹⁷Current year (i.e. 2014).

In 2012 Lithuania's economy was one of the fastest growing economies in the European Union. This was due to production growth in many sectors and the rapid development of export: in 2012 as compared to 2011 the exports of goods and services grew faster than imports (11.2% and 5.6% respectively) while net exports had a positive effect on the GDP growth. In 2011 Lithuania's economy grew by 5.9% and in 2012 – by 3.6%. The growth slowed down because of the weaker position of the world, in particular, of the euro area. The slower pace was also partially a natural process following the fast growth in 2011.

Table 1. Summary table of the key indicators for 2011-2012

Indicator (unit of measurement)	Value	
	2011	2012
Total primary energy consumption (ktoe)	7 309.0	7 388.4
Total final energy consumption* (ktoe)	4 715.3	4 837.1
final energy consumption in the industry sector (ktoe)	901.0	960.8
final energy consumption in the transport sector (ktoe)	1 544.2	1 574.5
final energy consumption in the household sector (ktoe)	1 535.3	1 537.1
final energy consumption in the services sector (ktoe)	584.0	614.1
Gross value added in the industry sector** (LTL million)	18 173.7	18 843.7
Gross value added in the services sector** (LTL million)	46 693.0	48 613.5
Disposable income in households*** (LTL)	28 440.0	— ¹⁸
Total number of households (thousand units)	1 326	1 327
Gross domestic product (GDP)** (LTL million)	80 918.0	83 879.0
Electricity generated by heat plants (GWh)	3 033.9	3 336.6
Electricity generated by cogeneration (GWh)	1 810	1 823
Heat generated by heat plants (ktoe)	469.0	467.3
Heat generated by cogeneration plants including residual heat of industries (ktoe)	713.2	703.3
Fuel consumption at heat plants (ktoe)	1 020.6	1 069.7
Fuel consumption at cogeneration plants (ktoe)	6 51.3	624.4
Transportation and distribution losses (ktoe)	216.9	215.4
Total number of passenger-kilometres (pkm) (million km)	4 101	4 408
Total number of tonne-kilometres (tkm) (million tkm)	37 199	38 255
Population**** (thousand)	3 028.1	2 987.8
District heat generation***** (TWh)	8.8	9.0
Fuel consumption for district heat generation***** (ktoe)	813.1	825.9

The Table is compiled on the basis of the data of Statistics Lithuania and the Lithuanian District Heating Association

Explanations:

*not recalculated for climate conditions;

**chain linking method;

***cash and in-kind income per household;

****average annual population;

*****complementary data supplied in accordance with Regulation (EC) No 1099/2008 of the European Parliament and of the Council on energy statistics.

¹⁸ Data for 2012 are to be published at the end of Quarter 3 of 2014.

In 2012 in Lithuania the total primary energy consumption as compared to 2011 increased by 79.4 ktoe, or 1.1%. The total final energy consumption increased by 121.8 ktoe, or 2.6%. The final energy consumption in sectors of the economy in 2012 as compared to 2011 increased as follows:

- (1) in the industry sector – 59.8 ktoe, or 6.6%;
- (2) in the transport sector – 30.3 ktoe, or 2.0%;
- (3) in the household sector – 1.8 ktoe, or 0.1%;
- (4) in the services sector – 30.1 ktoe, or 5.2%.

The growth in the total final energy consumption in the country and its sectors of the economy has been affected by the economic standing of the country.

The Gross Value Added (GVA) in Lithuania's industry sector in 2012 increased by LTL 670 million, or 3.7%, while in the services sector – by LTL 1 920.5 million, or 4.1%.

Disposable income of households (cash and in-kind income per household) in 2011 were LTL 28 440.0. The provider of Lithuania's official statistics (Statistics Lithuania) will publish data on disposable income of households for 2012 later, at the end of Quarter 3 of 2014 as data on disposable income in 2012 will only be received this year.

As for the total number of households in Lithuania, it must be noted that this number has been changing only slightly. In 2011 it was 1 326 000 while in 2012 it was 1 327 000. The increase was 1 000, or 0.01%.

In 2011 the national GDP amounted to LTL 80 918.0 million while in 2012 it was LTL 83 879.0 million, so the increase was LTL 2 961 million, or 3.7%. So, Lithuania's GDP developments in 2012 can be assessed as positive. The development, albeit not so fast any longer, seemed to be better than expected at the beginning of the year.

There was some growth in electricity generated by Lithuania's heat plants. In 2011 those plants generated 3 033.9 GWh of electricity while in 2012 that figure was 3 336.6 GWh, i.e. 302.7 GWh, or 10.0%, more.

In Lithuania, in 2011 cogeneration plants (simultaneous energy generation of electricity and usable heat energy within a single technological process) generated 1 810 GWh of electricity while in 2012 it was 1 823 GWh. Thus, electricity generation increased only slightly – by 13 GWh, or 0.7%.

In 2011 the country's heat plants generated 469.0 ktoe of heat while in 2012 that figure was smaller – 467.3 ktoe, i.e. heat generation dropped by 1.7 ktoe, or 0.4%.

Heat energy generated by cogeneration plants including residual heat energy of industries in 2011 was 713.2 ktoe, and in 2012 it decreased to 703.3 ktoe, i.e. heat energy generated by cogeneration plants in 2012 decreased by 9.9 ktoe, or 1.4%.

Fuel consumption in heat plants in 2011 was 1 022.9 ktoe, and in 2012 it was 1 072.0 ktoe, so it increased by 49.1 ktoe, or 4.8%.

Fuel consumption in cogeneration plants in 2011 was 651.3 ktoe, and in 2012 it was 624.4 ktoe, so it decreased by 26.9 ktoe, or 4.3%.

Energy transportation and distribution losses in 2011 was 216.9 ktoe, and in 2012 they dropped to 215.4 ktoe, i.e. 1.5 ktoe, or 0.7%.

Even though final energy consumption in 2012 as compared to 2011 in the transport sector decreased by 30.3 ktoe, or 2.0%, efficiency actually increased:

- (1) in 2011 the total number of passenger-kilometres (pkm) was 4 101 million kilometres while in 2012 it was 4 408 million kilometres, i.e. it increased by 307 million kilometres, or 7.5%;
- (2) in 2011 the total number of tonne-kilometres (tkm) was 37 199 million tonne-kilometres while in 2012 it increased to 38 255 tonne-kilometres, i.e. by 1 056 tonne-kilometres, or 2.8%.

In 2011 the average annual population of Lithuania was 3 028 100 while in 2012 it dropped to 2 987 800, i.e. by 40 300, or 1.3%.

District heat generation in 2011 was 8.8 TWh, and in 2012 it was 9.0 TWh, i.e. it increased by 0.2 TWh, or 2.3%. Fuel consumption in district heat generation in 2011 was 813.1 ktoe, and in 2012 it was 825.9 ktoe, so it increased by 12.8 ktoe, or 1.6%. This shows that district heat generation is efficient.

(b) Latest information on the key legislative and non-legislative measures implemented during the previous year that contribute to the attainment of common national energy efficiency targets of 2020

The key legislative measures implemented during the previous year (2013) that contribute to the attainment of common national energy efficiency targets of 2020 include the draft Law of the Republic of Lithuania on energy efficiency drawn up in accordance with the requirements of Directive 2012/27/EU seeking to lay down the main requirements to, procedure for and conditions of the efficiency of energy supply and consumption ensuring energy supply and consumption efficiency and primary energy saving targets in the Republic of Lithuania. It is envisaged to attain energy savings matching the targets set in the European Union legislation and to eliminate obstacles in the energy sector hindering the efficient supply and consumption of energy. Moreover, draft amendments have been drawn up to the Law of the Republic of Lithuania on electricity, the Law of the Republic of Lithuania on energy, the Law of the Republic of Lithuania on natural gas and the Law of the Republic of Lithuania on the heating sector with a view to transposing the relevant provisions of Directive 2012/27/EU.

Furthermore, having regard to the provisions of Directive 2012/29/EC and other legislation, studies, etc. the Ministry of Energy has drafted the draft National Heating Sector Development Programme for 2014-2020. Under that draft, the strategic goal of Lithuania in the heating sector is to improve the efficiency of heat generation, transmission and consumption, at the same time replacing natural gas used for heat generation with biomass and reducing heating costs. It envisages the development of local electricity generation using high-efficiency cogeneration.

(c) Total surface area of premises in buildings owned or used by central public authorities of the Member States of the total usable surface area exceeding 500 sq. m and as of 9 July 2015 – 250 sq. m that at the moment of the submission of the Report fails to meet energy efficiency requirements laid down in Article 5(1) of Directive 2012/27/EU

In implementing the provisions of Article 5 of Directive 2012/27/EU, by its Resolution No 1256 of 18 December 2013 on the compilation of a list of heated and/or cooled buildings owned by the state and used by public authorities and bodies that are public administration entities, the Government of the Republic of Lithuania assigned to the Ministry of Energy of the Republic of Lithuania to draw up and annually update a list of heated and/or cooled buildings owned by the state and used by public authorities and bodies that are public administration entities where the total surface area exceeds 500 sq. m and as of 9 July 2015 – 250 sq. m. The list will be used to compile a list of buildings used by public authorities of which 3% of the total surface area will be renovated starting from 2014.

In implementing the said assignment, by Order No 1-7 of 23 January 2014 on the list of heated and/or cooled buildings owned by the state and used by public authorities and bodies that are public administration entities, the Minister for Energy of the Republic of

Lithuania approved a list of heated and/or cooled buildings owned by the state and used by public authorities and bodies that are public administration entities where the total surface area exceeds 500 sq. m¹⁹. The list specifies that the total surface area of buildings of the total usable surface area exceeding 500 sq. m is 3.1 million sq. m, and the area failing to meet energy performance requirements listed in Article 5(1) of Directive 2009/27/EU (also covering buildings that have not yet undergone an energy performance evaluation) is 2.2 million sq. metres.

(d) Total surface area of premises in heated and/or cooled buildings owned and used by central public authorities of the Member State that is referred to in Article 5(1) of Directive 2012/27/EU and was renovated during the previous year, or energy savings in buildings owned and used by central public authorities and meeting the requirements as referred to in Article 5(6) of Directive 2012/27/EU

This requirement of Directive 2012/27/EU is applicable as of 1 January 2014.

(e) Energy savings due to the application of the national energy efficiency obligation schemes referred to in Article 7(1) of Directive 2012/27/EU or alternative measures adopted in accordance with Article 7(9) of Directive 2012/27/EU

This requirement of Directive 2012/27/EU is applicable as of 1 January 2014.

¹⁹<https://www.e-tar.lt/portal/forms/legalAct.html?documentId=8beb222084fa11e3aba3d2563f167b94>

ANNEX 2

**ESTABLISHING MINIMAL ENERGY SAVINGS IN 2014-2020 UNDER ARTICLE 7
OF DIRECTIVE 2012/27/EU**

ESTABLISHING MINIMAL ENERGY SAVINGS IN 2014-2020 UNDER ARTICLE 7 OF DIRECTIVE 2012/27/EU

Every year between 1 January 2014 and 31 December 2020 new energy savings must be ensured amounting to at least 1.5% of average annual energy sales to final customers. The average is calculated for three years before 2013, i.e. for 2010, 2011 and 2012. The calculation must include the sales of all energy sellers and/or distributors of all kinds of energy and energy resources to final customers, except for energy consumed in the transport sector (it may be included or excluded).

The total final energy savings target in Lithuania has been calculated on the basis of the final energy consumption data of Lithuania for 2010-2012 as shown in Table 1. Final energy consumption in 2010, 2011 and 2012 is taken from the annual publication “Fuel and Energy Balance” of Statistics Lithuania presenting Lithuania’s official statistics. In 2010 the heading of final energy consumption in that publication matches the Eurostat data. In the publication of 2012 Statistics Lithuania corrected year 2011, which is why the Eurostat data for 2011 are not the same (they will have to be corrected accordingly in the Eurostat database).

Table 1. Final energy consumption in Lithuania in 2010-2012

	2010	2011	2012	
Final energy consumption in the industry sector, thousand toe	900	941	1 001	2010-2012 average, thousand toe
Final energy consumption in the transport sector, thousand toe	1 551	1 544	1 575	
Final energy consumption in other sectors, thousand toe	2 308	2 230	2 184	
Total final energy consumption, thousand toe	4 759	4 715	4 759	4 744
Total final energy consumption (except for the transport sector), thousand toe	3 208	3 171	3 185	3 188

In accordance with the second paragraph of Article 7(1) of Directive 2012/27/EU, the calculation of the TFES indicator does not include the total final energy consumed in the transport sector. The total average final energy consumption (except for the transport sector) is 3 188 000 toe. In this case the required energy savings amount to 1 339 ktoe. In accordance with Article 7(3) of Directive 2012/27/EU, the TFES indicator can be reduced by no more than 25%.

In accordance with Article 7(2)(a) of Directive 2012/27/EU, savings can be reduced to 1 060 000 toe (by 20.8%) as shown in Table 2.

Table 2. Calculation of the TFES indicator excluding energy consumption in the transport sector and reducing it under Article 7(2)(a) of Directive 2012/27/EU

Year	Energy savings		
	%	thousand toe	GWh
2014	1.00	32	371
2015	2.00	64	741
2016	3.25	104	1 205
2017	4.50	143	1 668
2018	6.00	191	2 224
2019	7.50	239	2 781
2020	9.00	287	3 337
	TFES	1 060	12 327

In accordance with Articles 7(2)(c) and 7(2)(d) of Directive 2012/27/EU, the TFES indicator does not include energy savings of 1.18 TWh resulting from the transformation, transmission, distribution and performance of individual actions, i.e. the additional reduction is 4.2%:

- 1) Additional savings resulting from the transmission of the renovated or replaced worn-out heating networks are about 0.18 TWh, i.e. the total length of contract 100-mm single pipes renovated since 31 December 2008 is about 720 km;
- 2) Savings resulting from new biocogeneration plants are about 1 TWh of energy as compared to separate heat and electricity generation, i.e. the total capacity installed since 2009 is about 75 MW-capacity electricity plants and about 210 heating capacity installations in the district heating sector.

The TFES indicator maximally reduced (by 25%) is **1 004 000 toe** or **11 677 TWh**. The same additional energy savings are envisaged every year. The TFES indicator presented in accordance with this principle is shown in Table 3.

Table 3. TFES indicator timetable

Year	Energy savings	
	thousand toe	GWh
2015	48	556
2016	96	1 112
2017	143	1 668
2018	191	2 224
2019	239	2 780
2020	287	3 336
TFES	1 004	11 677

Inclusion of the transport sector in the calculation of the TFES indicator

In accordance with the second paragraph of Article 7(1) of Directive 2012/27/EU, the calculation of the TFES indicator does not include the total final energy consumed in the transport sector.

ANNEX 3

CONSUMER INFORMATION PROGRAMMES AND TRAINING

CONSUMER INFORMATION PROGRAMMES AND TRAINING

1. Information provided by energy companies to energy consumers and municipal authorities on efficient consumption of energy resources and energy, safe and efficient use of energy facilities and installations, energy facilities and installations under construction and reconstruction, energy prices and services provided to energy consumers.

Article 6 of the Law of the Republic of Lithuania on energy sets out that the Ministry of Energy of the Republic of Lithuania organises experience sharing sessions in the area of the efficiency of energy resources and energy between public authorities, bodies, enterprises and organisations on the national and international levels. The Law also lists the following responsible institutions and measures relating to the provision and assurance of information and consultations to final customers:

Article 7. Remit of the Ministry of Transport and Communications:

(2) provides recommendations and implements measures improving the efficiency of energy resources and energy in transport facilities;

(3) together with the Ministry of Energy carries out information and educational activities promoting greater efficiency of the use of energy resources and energy in transport facilities;

Article 13. Remit of Director of the Municipality Administration:

(5) participates in carrying out applied research work and preparing public awareness raising and educational measures promoting more efficient use of energy and energy resources;

Article 25. Provision of information:

4. In accordance with the procedure laid down by the Government or an authority authorised thereby in their territory energy companies provide information to energy consumers and municipal authorities on efficient consumption of energy resources and energy, safe and efficient use of energy facilities and installations, energy facilities and installations under construction and reconstruction, state-regulated energy prices and services provided to energy consumers.

The Rules for the provision of information relating to energy activities to public and municipal authorities, bodies and/or other persons approved by Order No 1-145 of the Minister for Energy of the Republic of Lithuania of 19 May 2010 set out the procedure for the provision of energy-related information, its amount and conditions as well as relations between inquirers, providers and/or other persons (final energy customers, EU institutions and bodies and organisations of the Member States and third countries and international organisations). The Rules apply to persons engaging in energy activities, public and municipal authorities and bodies and other persons.

Persons engaging in heat, electricity and gas supply activities ('energy suppliers') provide final energy customers within their territory of activity and within their remit with the following information:

- energy supplied and services provided to final energy customers;
- principles of concluding energy supply contracts and rights of final energy customers;
- energy prices and tariffs;
- safe and efficient use of energy facilities and installations;
- energy facilities and installations under construction or reconstruction;
- efficient consumption of energy resources and energy.

Energy suppliers publish their phone number and e-mail addresses at which final energy customer can contact them to obtain the said information.

Energy suppliers and suppliers holding licences issued by public authorities to engage in certain activities provide final energy customers and, where energy is supplied to a multi-apartment building, a condominium of flat owners of a multi-apartment building or an institution administering it, in a clear and understandable form together with an invoice unless the contract provides for a different procedure for settlement (payments) or individually in writing or by e-mail depending on the form in which the consumer receives settlement documents, or on self-service websites, with the following information at least once a year:

- a comparison of energy consumed by the final energy customer with the lowest and average consumption of final customers within the same customer group. The lowest and average consumption of final customers presented is recalculated, where possible, taking into account factors affecting energy consumption that are independent of the behaviour and actions of the final customer, such as climate conditions, active hours of buildings, etc. Together with the comparison energy suppliers also provide profiles of final energy customers under comparison;
- a comparison of energy consumption by the final customer during the reporting period and their energy consumption during the same period of the previous year, where possible, indicating parameters affecting energy consumption. This comparison is not mandatory unless the legislation provides for the provision of invoices.

The energy supplier and a retail oil products enterprise provide the final customer together with an invoice in contracts, receipts or otherwise and, where possible, on their website, with contact information of organisations, institutions, bodies and enterprises, including website addresses where the customer can find information on energy efficiency improvement measures, a comparison of energy consumption by final customers and/or technical specifications of energy-consuming equipment, etc.

Information to final customers is recommended to be provided by any of the following methods:

- to draw up, publish and disseminate brochures, booklets, flyers, posters and other printed information materials;
- to organise conferences, seminars, lectures and meetings;
- to organise and/or participate in radio and TV programmes and debates;
- to write and submit articles to the media;
- to use electronic and other media.

The control of information provided to final customers is the responsibility of the State Energy Inspectorate under the Ministry of Energy.

2. Information published on ongoing programmes, consultations and training sessions offered as well as on how to use programme measures

Information on ongoing programmes relating to energy efficiency in the country aiming at the attainment of the indicative national energy saving target and consultations on how to use programme measures is provided by institutions responsible for the implementation of these programmes:

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

- “Improvement of energy generation efficiency”,
- “Renovation of public buildings on the national level”,

- “Renovation of public buildings on the regional level” and
- “Renovation projects of public buildings meeting benefit and quality assessment criteria under SPD Measure 1.2”,

is provided and published on the website <http://www.ukmin.lt> by the Ministry of the Economy of the Republic of Lithuania and the LBSA. Other relevant information is also published on the website <http://www.esparama.lt>.

Information on the National Programme for the Improvement of Energy Efficiency for 2006-2010 approved by Resolution No 443 of the Government of the Republic of Lithuania of 11 May 2006 and its implementation is provided and published on the website <http://www.enmin.lt> by the Ministry of Energy of the Republic of Lithuania.

Information on the Lithuanian Housing Strategy approved by Resolution No 60 of the Government of the Republic of Lithuania of 21 January 2004 and on the implementation of the Plan of implementing measures for the Lithuanian Housing Strategy approved by Resolution No 1145 of the Government of the Republic of Lithuania of 8 September 2004 is provided and published on the website <http://www.am.lt> by the Ministry of the Environment of the Republic of Lithuania.

Information on the Programme for the upgrading of multi-apartment buildings approved by Resolution No 1213 of the Government of the Republic of Lithuania of 23 September 2004 and its implementation is provided and published on the website <http://www.betalt.lt> by BETA and on the website <http://www.am.lt> by the Ministry of the Environment of the Republic of Lithuania.

The Lithuanian-Swiss Cooperation Programme finances the implementation of the programme “Introducing energy-saving technologies in Lithuanian hospitals providing services to pregnant women, new mothers and newborns”. The support agreement on the allocation of funds to the implementation of the programme was signed on 20 December 2011. The distribution of functions between the responsible authorities is described in detail in the Rules for the administration of the Lithuanian-Swiss Cooperation Programme in Lithuania approved by Order No 1K-418 of the Minister for Finance of the Republic of Lithuania of 5 December 2008. The Ministry of Finance performs the functions of the national coordinating authority. Information on the implementation of this Programme is provided by the Ministry of Health of the Republic of Lithuania.

Information on the Ignalina Programme (insulation of external walls and roofs and replacement of windows and doors in public buildings) and its implementation is provided by the CPMA.

Information on the Programme for the upgrading of student residences of higher education institutions approved by Resolution No 843 of the Government of the Republic of Lithuania of 1 September 2006 and its implementation is provided and published on the website <http://www.smm.lt> by the Ministry of Education and Science of the Republic of Lithuania.

Information on the Programme for the renovation of imprisonment establishments and improvement of imprisonment conditions for 2004-2009 approved by Resolution No 619 of the Government of the Republic of Lithuania of 24 May 2004 and its implementation is provided and published on the website <http://www.kalejimudepartamentas.lt> by the Prison Department under the Ministry of Justice.

Information on the Programme for the upgrading of cultural centres for 2007-2020 approved by Resolution No 785 of the Government of the Republic of Lithuania of 4 August 2006 and its implementation is provided and published on the website <http://www.lrkm.lt> by the Ministry of Culture of the Republic of Lithuania.

3. Provision of consultations and information to final customers, organisation of training, preparation of information materials, use of the media to disseminate energy saving ideas and organisation of conferences, seminars and events on energy efficiency

The website of the Ministry of Energy of the Republic of Lithuania²⁰ publishes the recommendations “Energy is worth saving” and heat energy saving measures.

The Ministry of the Environment of the Republic of Lithuania coordinates the public awareness raising campaign “European Week of Mobility” implemented by municipalities that aims at encouraging people to use public transport and bicycles and to walk as well as to support these modes of transport and invest in new infrastructure that is needed. The main objective of the European Week of Mobility is to raise public awareness of the need to combat pollution resulting from the intensified urban traffic of motor vehicles.

The Ministry of the Environment of the Republic of Lithuania also coordinates the campaign “A Day Without Cars”. The key organisers of the campaign are municipalities. In 2013, 18 Lithuanian municipalities organised the campaign “A Day Without Cars”. Usually the campaign only publishes some information in local or national media and small events are organised in schools or public places. The objective of the campaign “A Day Without Cars” is to promote lesser use of cars and a choice of greener vehicles. The campaign is a good change to use public channels to provide information on car-induced pollution, draw attention of the public to the issue and popularise alternative, less-polluting vehicles rather than an actual measure to reduce car flows.

BETA (www.betalt.lt, www.atnaujinkbusta.lt) provides consultations and support to housing owners on matters of the renovation (upgrading) of multi-apartment buildings, evaluates and coordinates investment plans and procurement documents submitted and cooperates with municipal authorities, engineering consultancy companies, educational establishments, non-governmental organisations and others. BETA also implements activities relating to the Programme for the renovation (upgrading) of multi-apartment buildings in the areas of housing maintenance and quality and the implementation of efficient energy-saving measures and organises trainings and seminars.

In 2013 the Ministry of the Environment together with BETA organised a series of training sessions addressed to administrators of the implementation of upgrading programmes for multi-apartment buildings appointed by municipalities. Trainings involved about three hundred participants including administrators of the implementation of upgrading programmes for multi-apartment buildings and representatives of municipalities and condominiums of flat owners of multi-apartment buildings. They received detailed information about the said programme, project funding opportunities and financial management instruments envisaged, specificities and developments of the legal regulation, the drawing up of investment plans, the management of construction processes and other renovation-related matters. The debates also touched upon various aspects of the drafting and implementation of upgrading programmes for multi-apartment buildings interesting to the training participants. The said organisations also held a series of training sessions addressed to administrators of the implementation of upgrading programmes for multi-apartment buildings appointed by municipalities. The main objective of these training sessions was to ensure smooth procurement of contract works with design services via the central contracting authority.

The Ministry of the Environment of the Republic of Lithuania hosted a workshop for construction maintenance managers. The workshop presented the latest model of the upgrading programme for multi-apartment buildings and the selection of construction maintenance managers via the central contracting authority and discussed novelties in the

²⁰ http://www.enmin.lt/lt/activity/veiklos_kryptys/energijos_efektyvumas/Energijos_taupymas.pdf

areas of construction maintenance regulation, the role of the State Spatial Planning and Construction Inspectorate in the renovation (upgrading) of multi-apartment buildings and typical mistakes in renovating multi-apartment buildings.

Using various media (flyers, booklets, the website www.dujos.lt and others) or through direct communication with existing and prospective natural gas consumers, AB Lietuvos dujos continuously provides them with information on the most efficient installations running on natural gas and energy-saving measures. Existing consumers of AB Lietuvos dujos have a possibility to obtain information on the self-service website on natural gas consumption and payments made and other information relevant for making decisions in respect of natural gas consumption efficiency. Some consumers call the Call Centre of AB Lietuvos dujos inquiring about possibilities for reducing natural gas consumption. In 2012 advocacy articles by AB Lietuvos dujos were published in several dailies and in Statyk Magazine on how to save heat energy (including natural gas).

Measures implemented by AB Lesto in the field of public awareness raising with a view to improving energy efficiency:

- An initiative promoting rational energy consumption “Only as much as needed”. The initiative “Only as much as needed” seeks to use information channels and educational measures to encourage people to consume electricity rationally, to draw their attention to bad electricity consumption habits and to change them and to involve communities and non-governmental organisations in the development and implementation of electricity-saving projects. Detailed information on the initiative “Only as much as needed” is published on the project’s website www.tiekkiekreikia.lt. Enterprises are invited to join the “Green Protocol”. This is the only arrangement of this kind in the country initiated by AB Lesto whereby enterprises and organisations confirm that they are familiar with environmentally-friendly ideas promoting rational electricity consumption, support them and undertake to apply them in practice. At the end of 2012 the Protocol was signed by 107 enterprises (in 2011 – 74). The list of the enterprises is published on the project’s website www.tiekkiekreikia.lt. In 2012 AB Lesto organised a conference “Energy efficiency solutions. A path towards business competitiveness” attended by over 200 participants. 92% of respondents having filled the feedback questionnaire of the event stated that their expectations were met and 98% said that they would attend such an event again;
- Initiative “Operation 2020” seeking to reduce electricity losses and raise public awareness. 2010 was the start of a long-term public awareness raising initiative “Operation 2020” seeking to promote responsible behaviour with electricity and electric installations and to diminish adverse consequences resulting from irresponsible or malevolent behaviour. The objectives of the initiative “Operation 2020” match the European Union’s aspirations to reduce greenhouse gas emissions by 20% by 2020, to increase the use of renewable energy resources by 20% and to reduce electricity consumption by 20% improving network efficiency and promoting rational consumption. In 2012 AB Lesto organised regional meetings with local municipalities and called upon them to look for solutions to the most topical problems of the population relating to the upgrading of the electricity network and enhancement of security and responsibility of the public. In 2012 over 120 000 copies of “The Responsible Electricity Consumption Handbook” were disseminated. In 2012 AB Lesto implemented measures to reduce electricity losses in the distribution network: replacement of electricity meters with ones of greater precision that consume

- less electricity; replacement of transformers with transformers of the optimal capacity; replacement of transformer substations with those of the optimal capacity; optimisation of electric appliances (automated data reading);
- An educational initiative for children “Electric Magic”. The educational initiative “Electric Magic” aims at educating children and young people about electricity, its benefits, threats, rational consumption, saving and security. The objective of the initiative is to encourage students to behave safely with electricity and electric appliances through games, tests and other attractive means. Information is published on the website www.elektromagija.lt. In 2012 a creative competition was organised. Children were invited to create short stories about the life in the country of Electric Magic and its residents. At the end of 2012, for the third year in a row students were invited to the competition “Eco-Christmas 2012”. Students were invited to create calendars for 2013 with environmentally-friendly activities envisaged for each month. 23 schools participated in the competition;
 - Other projects. Environment protection: sustainable development, prevention of pollution. Together with the Lithuanian Society of Ornithologists and the Institute of Ecology of the Nature Research Centre and partners, AB LESTO is implementing the project “Protection of the white stork in Lithuania” under the European Union’s financial instrument for the environment “LIFE+”. Stork nests installed on electricity poles are not safe either for birds or for people. By touching electricity wires storks are often lethally injured by the electric current, and the company incurs losses resulting from electricity leakage and wire ruptures. Thus, the objective of this project is to ensure the protection of white storks by installing special secure platforms on electric poles that are safe for both birds and overhead lines.

Along with detailed invoices, UAB Vilniaus energija informs the public by disseminating information materials on the benefits of renovation and use of biofuel. Moreover, the company provides live consultations to customers (“Termobusas” – answers to heating-related questions) and through various means of communication. Much information is also published on the website www.vilniaus-energija.lt. UAB Vilniaus energija conducts audits of energy resources consumption and commercial losses of buildings by employing analytical tools and In Situ and energy audits and improves cooperation and communication with enterprises maintaining heating facilities, building managers and Vilnius City Municipality. There is a map “Actual energy consumption classes” (a fragment of the map is shown in Figure 1). Actual energy consumption classes are between 1 (the best) and 15 (the worst). The actual energy consumption of each multi-apartment building is calculated, and all buildings are grouped by similar design project types to enable a comparison of the extent to which the level of consumption of a specific building matches other buildings of the same design project type.

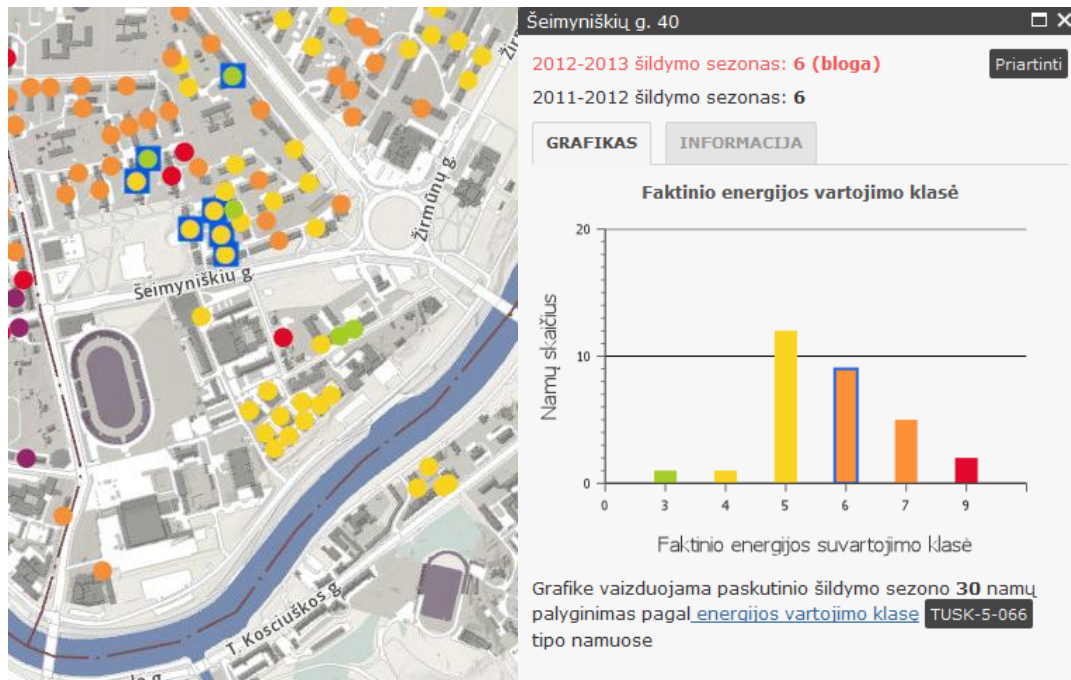


Fig. 1. Actual energy consumption classes²¹

More than 10 years ago UAB Vilniaus energija started to develop an advanced metering system (a remote advanced metering, data transmission and monitoring system) and successfully employs its benefits. In the beginning this metering system was implemented for the initial heat accounting of final customers but later other metering systems were developed and implemented for final consumers' individual heat accounting by dividers, individual heat accounting by heat counters, hot water accounting, etc.

²¹ <http://www.vilnius.lt/vmap/t1.php?layershow=siluma>