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**Ministry of Economic Affairs and  
Communications**

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**Mid-term overview of  
implementation of Energy  
Efficiency Plan 2007–2013 and  
further implementation**

***The second energy efficiency  
action plan of Estonia***

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# 1 OVERALL CONTEXT FOR THE SECOND ENERGY EFFICIENCY ACTION PLAN

## 1.1 Highlights of the second energy efficiency action plan

Our energy conservation policy forms a part of the Estonian energy policy that is implemented on the basis of the National Development Plan of the Energy Sector until 2020. The importance of the energy conservation policy is also underlined in the National Reform Programme 'Estonia 2020' that sets an ambitious goal for making final energy consumption more efficient in Estonia – to keep the final energy consumption in 2020 at the same level it was in 2010, i.e. 121 PJ or 33.6 TWh. If the fuel used by Estonian final customers were all in the form of liquid fuel brought here by train, two trains stretching from Tallinn to Võru would be required. If Estonia were not to implement any energy conservation policy, the final energy consumption would reach 137 PJ in 2020. This means that these two trains would have more tank wagons and would reach from Võru all the way to Luhamaa.

This document is drawn up on the basis of European Parliament and Council Directive 2006/32/EC on energy end-use efficiency and energy services. According to Article 14(2) of the Directive, member states must submit three energy efficiency action plans to the European Commission. The first one was submitted in November 2007, the due date for submitting the second one was 30 June 2011 and the due date for the third one is 30 June 2014. The plan was drawn up in compliance with the format recommended by the European Commission. It was adjusted according to Estonia's circumstances and opportunities.

Based on the activities and analyses conducted with respect to implementation of the previous energy efficiency action plan (Energy Efficiency Plan 2007–2013), the conclusions are as follows:

- The government has focussed on achieving energy efficiency in the housing sector, especially in apartment buildings. For this purpose apartment building renovation support programmes are financed generously.
- Significant measures for improving energy performance of public sector buildings have been developed. Measures to curtail energy consumption of apartment blocks should primarily control heat consumption. The measures taken with respect to public sector buildings set an example.
- Training and qualification of sectoral specialists has started well in Estonia, especially with respect to issues concerning energy performance of buildings.
- Tax measures have contributed to attaining energy conservation goals, and motor fuel excise duties have contributed to improving energy efficiency in the transport sector.
- The first analysis of the effectiveness of the energy conservation policy, carried out using the methodology recommended by the European Commission, revealed that on the basis of the data on 2008 and 2009 the energy savings amount to 2.88 PJ in Estonia; thus, the interim target for 2010 was probably reached. The interim target for 2010 was to achieve 3.3 PJ of energy savings as a result of the energy conservation measures. However, the analysis showed that so far there is not enough data to perform a thorough analysis of the effectiveness of our energy conservation policy. The development of systems for gathering data was hindered by unclear expectations for developing such systems and by the economic difficulties during the period from 2008 to 2010.
- The issues relating to making energy consumption more efficient should receive more attention in the upcoming years. Of the final consumption sectors, the energy efficiency measures that are in greatest need of development are those of companies, including industry. According to the renewable energy target for the transport sector for 2020, efficiency of fuel use in the transport sector will remain topical as well.

In May 2011, there was a debate in the Riigikogu on energy conservation and efficiency measures in Estonia as one of the issues of national importance. In this debate, the Minister of Economic Affairs and Communications mentioned seven more important courses of action that will be focussed on when implementing energy conservation and efficiency measures in Estonia in the upcoming years. **These are the following:**

1. Continued support programmes for energy conservation activities in apartment blocks. The support provided so far has been used for less costly activities. Their total volume is probably less than one-fifth of the work required. To ensure compliance of apartment buildings with modern energy performance and indoor climate requirements, billions of additional euros must be invested. Two of the biggest financing sources for this could be the income the state receives from selling CO<sub>2</sub> quota, starting from 2013, and the structural instruments granted to Estonia by the EU in the following

- financing period. In parallel to the support opportunities offered by the public sector, private sector investments into improved energy performance of apartment buildings must be encouraged as well.
2. A measure being developed for energy conservation activities in small houses. One-third of Estonian families lives in small houses. The data on final energy consumption of households show poor energy efficiency and the surveys also show that the indoor climate in small houses is poor as well. The income tax refund on reconstruction loan interest applied so far is failing to motivate owners to insulate their buildings. The support programme for reconstructing small houses will be launched as soon as financial cover for that is found.
  3. Implementation of the programme for reconstruction of public sector buildings. The total volume of the investment programme to be implemented up to 2013 is 146.5 million euros, enough to improve the energy performance of about 480 public buildings. In addition, reconstruction of the buildings is financed from the structural funds of the European Union. A large-scale reconstruction of buildings is necessary to reduce the energy costs of the public sector and to set an example for other sectors. When harmonising our requirements with the energy performance of buildings directive of the European Union that must be transposed by July 2012, our minimum requirements for energy performance of buildings will be made stricter.
  4. Using energy efficiency to increase the competitiveness of industry and small enterprises. With the help of Enterprise Estonia, enterprises were and are offered several development opportunities; for example, a technology investment programme for industrial entrepreneurs, a support for developing knowledge and skills and a support for involving innovation staff. Implementation of the National Reform Programme 'Estonia 2020' involves a plan to devise and implement a support measure for energy conservation by manufacturers and a financial instrument that would include support for an energy audit and financing opportunities for the activities, the necessity of which is established during the audit. Conducting these activities requires a larger number of competent energy auditors who can perform industrial energy audits to be bigger.
  5. Energy conservation in the transport sector. Energy use in the transport sector can be controlled in three ways: by reducing the need for transportation, by increasing the use of public transport and by improving the efficiency of vehicles. Motor fuel excise duty also controls vehicle use quite well. If transportation needs are reduced and vehicles are made more efficient, the changes will affect both passenger and freight transport, but increased use of public transportation will only reduce the energy consumption of private vehicles. To achieve significant effects, all three must be addressed. Currently, the activities mainly focus on improving the efficiency of vehicles by acquiring a new public transportation rolling stock (new trains, buses, gas buses and trams) and by implementing the electromobility programme.
  6. Energy efficiency in the service sector. Energy consumption has increased considerably in the service sector: the increase since 2000 is 60% and it there was no decrease following the economic depression in 2009. To identify any energy conservation opportunities in this sector, analyses are required as well as more detailed energy statistics and monitoring.
  7. Improving the quality of implementation of the energy conservation policy. In order to do that, more high-quality data should be available as these are required for analysing the energy sector and energy efficiency trends. The work completed so far shows that assessment of the current situation regarding energy conservation opportunities is inadequate at several levels. The energy statistics do not provide any information on the energy consumption in the sub-sectors of the service sector, and it is difficult to correlate energy consumption with the introduction of various pieces of equipment or technologies. Missing data also inhibit analysis of industrial facilities, district heating networks and energy consumption of buildings as well as planning energy conservation measures for these. Furthermore, the lack of data makes it difficult to conduct a thorough assessment of the effectiveness of the energy conservation policy.

This document provides a more detailed overview of the activities in these energy conservation and efficiency policy areas. This document explains Estonia's goals in energy conservation and efficiency, measures and programmes for achieving these, its relation with other national policies and implementation of the requirements of Directive 2006/32/EC on energy end-use efficiency and energy services.

## **1.2 Estonian context for changes in energy efficiency**

From 2007 to 2010, several important changes that affected energy consumption and efficiency took place in

Estonia. The rate of economic activity, which had been high in 2007, went through a slump starting in the second half of 2008 and lasting until the second half of 2010. Decreasing income made both enterprises and the state make cuts or end certain activities; uncertainty about the future curtailed people's and enterprises' courage to invest in the future. The loan burden of the private sector is a considerable problem for planning new investments. However, the current economic situation can be considered to be stable.

2010 also saw some important changes in the electricity market: after the Ignalina nuclear power plant was closed in December 2009, the electricity generation from oil shale increased considerably in Estonia, both for domestic consumption and for exporting to Latvia and Lithuania. In April 2010, the electricity market was opened for large consumers in order to reach the 35% target for the share of the free electricity market in Estonia.

Energy consumption decreased the most in the industrial sector in the period 2007–2009; a slight decrease was noticeable in the transportation sector as well. Energy consumption of households and business, public service and agriculture sectors did not change; however, 2009 was colder than 2007<sup>1</sup>.

No significant changes have taken place in the energy policy of Estonia: the goals stipulated in the National Development Plan of the Energy Sector until 2020, approved by the Riigikogu in June 2009, remained the same as the goals in the previous plan and comply with the objectives of the EU energy policy for 2020. The institutional structure for implementing the energy efficiency policy changed slightly: a decision<sup>2</sup> made by the Riigikogu in June 2009 provided a basis for establishing a climate and energy agency. The Climate and Energy Agency started its work under the KredEx Credit and Export Guarantee Fund in December 2009.

The need for improved energy efficiency more rational energy use is obvious in Estonia. The more emphasis is placed on energy efficiency and conservation, the easier it will be to cope with increased energy prices and stricter environmental restrictions and to achieve the target for the share of renewable energy. There is a widespread belief that poor energy efficiency and huge carbon intensity of the economy reduce Estonia's economic competitiveness, and the public sector expenditure on energy could be lower. The state's focus on energy conservation issues is characterised by a considerable increase in the amount of finances targeted to improving energy conservation and efficiency; also, the interest and knowledge of private consumers with respect to more rational use of energy have increased.

Estonia implements several development plans that have links to energy conservation or would result in energy savings or could improve Estonia's energy-intensity indicators. The most significant of these development plans are:

- National Development Plan of the Energy Sector until 2020;
- Development Plan of the Estonian Electricity Sector until 2018;
- Estonian Energy Technology Programme;
- National Development Plan for the Use of Oil Shale 2008–2015;
- National Strategic Reference Framework 2007–2013 and its operational programmes (for the development of human resources, living environment and economic environment);
- Transport Development Plan 2006–2013;
- Estonian Housing Development Plan 2008–2013,
- National Reform Programme 'Estonia 2020'.

A more detailed overview of these development plans is in subchapter 2.2.

According to Statistics Estonia, the final energy consumption has fluctuated a lot in recent years, reaching 110 PJ in the period 2001–2005, 129 PJ in 2007 and 113 PJ in 2009. This fluctuation is caused by changes in the industrial and transportation sectors; energy consumption of other sectors has remained relatively unchanged. When analysing the energy consumption structure in Estonia by energy sources and sectors (see figure 1), the sectors and consumption segments that required more attention due to the amount of energy they consume are:

- 1) households, which consume considerable amounts of fuel, heat and electricity. Heat is consumed primarily by apartment buildings, and fuels other than motor fuels are consumed primarily in small houses. The share of apartment buildings in the housing stock is about 70%; however, the aggregate

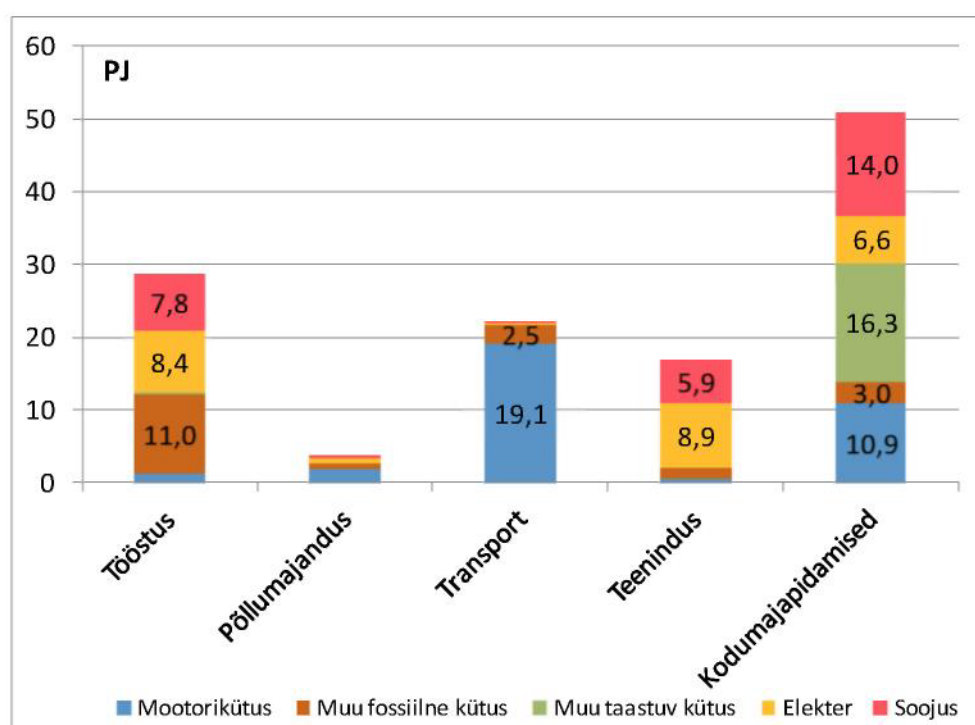
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<sup>1</sup> According to Eurostat, the number of degree days was 6.5% bigger in 2009 than in 2007.

<sup>2</sup> <https://www.riigiteataja.ee/akt/13196664> (in Estonian).

amount of fuel used for heat generation (19.3 PJ) is bigger than the amount of heat consumed by apartment blocks. Despite the fact that small houses have a larger area per person and despite the losses that occur in generating heat from fuels, the aggregate amount of fuel used in small houses gives basis for an assumption that small houses have considerable energy conservation opportunities;

- 2) industries. Like households, the sector requires attention from the point of view of all energy types used. Expert opinions on the situation in industry claim that industry has an energy conservation potential of 10% and a heat conservation potential of 30%<sup>3</sup>;
- 3) use of fuels in the transport sector;
- 4) electricity and heat consumption in the commercial and public service sectors. In terms of implementing energy conservation measures in this sector, special focus must be placed on making energy consumption more rational – electricity consumption of the service sector has exceeded even that of industry recently. Such a considerable electricity consumption by this sector cannot be justified by the fact that this sector also includes infrastructures, for the electricity consumption of water supply and sewerage companies was 0.43 PJ in 2008, the share of street lighting is probably even smaller because the total electricity consumption of the public sector was slightly over 1 PJ in 2008.



Industry; Agriculture; Transport; Service; Households  
 Motor fuel; Other fossil fuel; Other renewable fuel Electricity; Heat

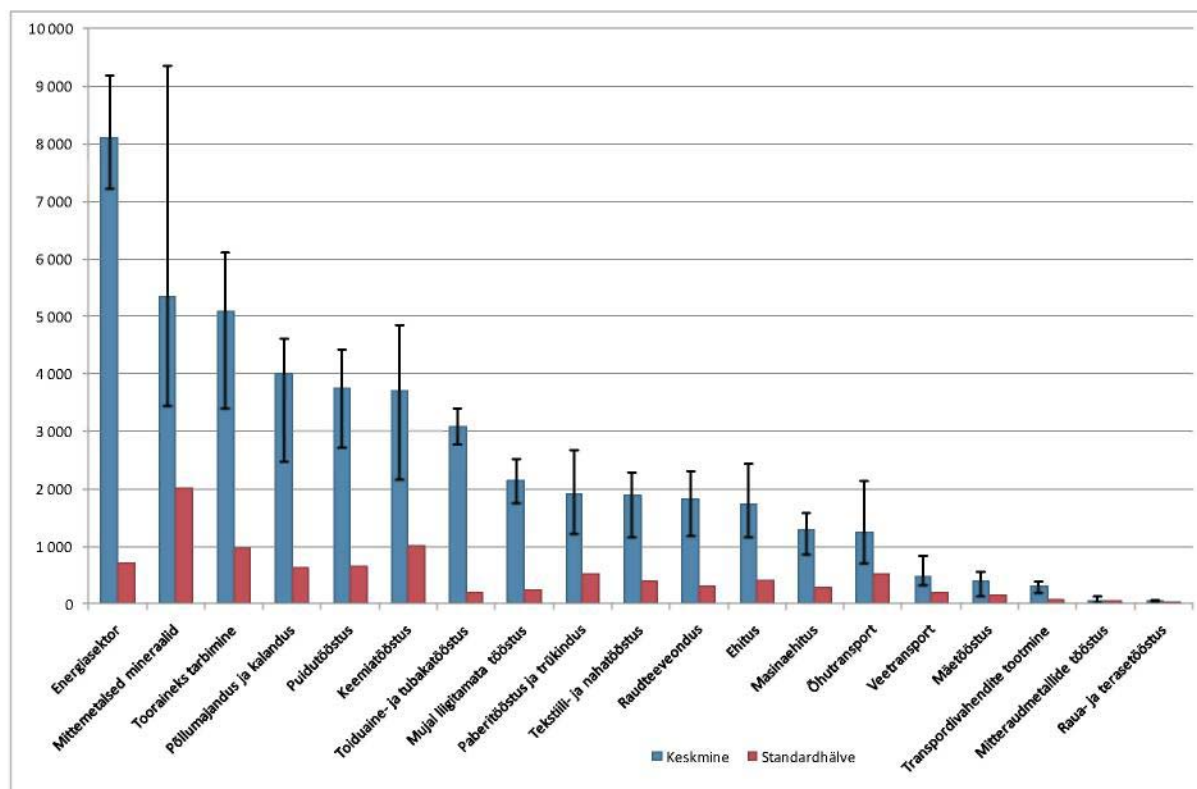
**Figure 1** Estonian energy consumption structure by energy sources and sectors in 2008 The data on other fuels pertain to fuels that are not motor fuels.

Several of the abovementioned sectors and consumption segments already have considerable energy measures in place; for example, excise duties for motor fuels, measures focussing on reconstruction of apartment buildings to reduce heat consumption of households and energy conservation measures for public buildings in the commercial and public service sectors. Furthermore, several measures with indirect effects have been developed (e.g. measures to improve public awareness), and activities to improve the expertise of specialists are being conducted.

Owing to limited resources, Estonia has not been able to thoroughly deal with the issues energy efficiency and conservation in industry. The studies conducted so far are either obsolete or have been conducted using overly simplified methods. However, energy statistics allow for identification of branches of industry that, considering their current energy consumption, are likely to have the biggest energy conservation potential. The average

<sup>3</sup> A survey on energy conservation in Estonian industrial companies, OÜ Energiasäästubüroo 2008.

energy consumption of the energy sector, industries, transport modes and agriculture in the period 2000–2008<sup>4</sup> and the changes therein can be seen in figure 2.



Energy sector; Non-metallic minerals; Consumption as raw material; Agriculture and fisheries; Timber industry; Chemical industry, Food and tobacco industries; Industry n.e.c.; Paper industry and printing; Textile and leather industries; Railway transport; Construction; Mechanical engineering; Air transport; Waterborne transport; Mining industry; Manufacture of transport equipment; Iron and steel industry; Average; Standard deviation

**Figure 2** The average energy consumption of the energy sector, industries, transport modes and agriculture in the period 2000–2008 and the fluctuation limits and standard deviations of these. The figures do not include data on land transport because the energy consumption in the land transport is twice as big as that in the energy sector.

Based on the data in the above figure, the industries where energy conservation must be focussed on are:

- production of other products from non-metallic minerals;
- timber industry;
- chemical industry,
- food and tobacco industries.

Considering the focus of Directive 2006/32/EC on energy end-use efficiency and energy services, there is no need to discuss the energy sector and consumption of fuels as a raw material in this plan. However, it must be mentioned that the use of fuels as raw material has decreased considerably due to the ceased operation of AS Nitrofert<sup>5</sup>, and it is not likely to be resumed in the former extent.

### 1.3 Overview of energy conservation policy objectives and their implementation

The following sections describe the objectives and targets of the Estonian energy conservation policy as derived from Directives 2006/32/EC and 2010/31/EU and national initiatives. The summary of the objectives

<sup>4</sup> It is likely that 2009 was exceptional due to the economic crisis; therefore, it has not been taken into account in this analysis.

<sup>5</sup> Consumption of fuels as raw material decreased by 77% in 2009, compared to 2008.



has been provided in a table as well (see also table 2 and table 3). Table 2 follows the required format of the action plan, table 3 was drawn up to display data on longer-term energy consumption forecasts and objectives for the main sectors and energy carriers for the years 2016 and 2020, based on the National Reform Programme 'Estonia 2020' (see also section 2.2.8).

Energy consumption objectives and measures are also included in the most important energy policy document in Estonia – National Development Plan of the Energy Sector until 2020 that was approved by the Riigikogu in June 2009. Its objective number 2 is to ensure more sustainable energy supply and consumption in Estonia, and this objective is described by several indicators (see the following table 1).

**Table 1.** Sustainable energy supply and consumption targets in the National Development Plan of the Energy Sector until 2020.

No	Indicator	Baseline	Target	Last known level
1.	Increasing the share of renewable energy in final energy consumption	17.5% (2006)	25% (2020)	19.1% (2008, EUROSTAT)
2.	Increasing the share of cogeneration in gross consumption of electricity	10.2% (2007)	20% (2020)	10.1% (2009, Estonian statistics)
3.	As a result of the energy conservation measures applied in the state, the total of 9.8 PJ is saved in 2016 (i.e. 9% of the average consumption of the years 2001–2005, arising from Directive 2006/32/EC)	5 TJ (2007)	9.8 PJ (2016)	2.9 PJ (2008), see also section 1.3.2
4.	Reduction of network losses (losses as a share of gross production)	Electricity: 11.1% (2007) Heat: 10.6% (2007)	Decreasing trend	Electricity: 10.1% (2009, Estonian statistics) Heat: 11.0% (2009, Estonian statistics)
5.	Reduction of the amount of primary energy used to satisfy the Estonian internal demand	124 438 TJ (2007)	Decreasing trend	
6.	The share of fuels based on renewable energy sources forms 10% of transport fuels in 2020.	0.06% (2007)	10% (2020)	
7.	CO <sub>2</sub> emissions of the energy sector have decreased twice by 2020, compared to 2007.	15.7 million tonnes (2007)	7.85 million tonnes (2020)	

To sum up the above targets, the most important objectives of the Estonian energy conservation policy and this plan are:

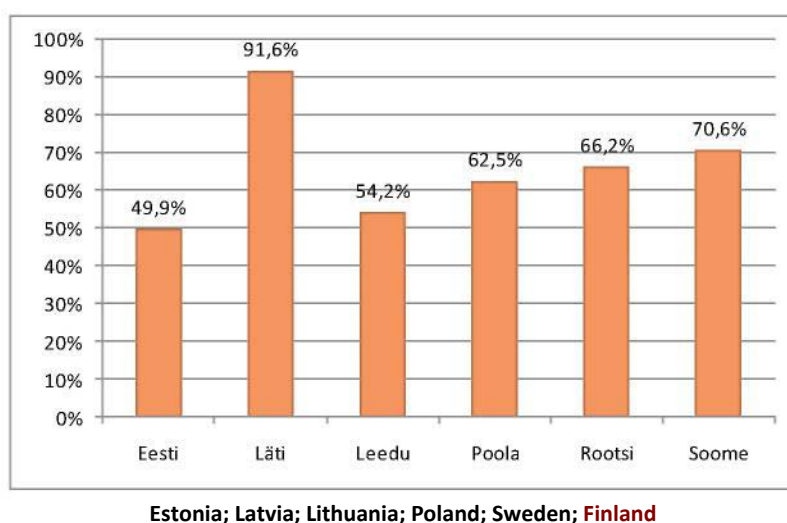
<b>Objective 1:</b>	to ensure achievement of the energy conservation and efficiency target stipulated in Directive 2006/32/EC and to achieve 9.9 PJ savings as a result of the energy conservation measures implemented in the period 2008–2016, including 6.6 PJ as a result of measures implemented in the period 2008–2013.
<b>Objective 2:</b>	to ensure that the energy conservation target stipulated in 'Estonia 2020' is reached. The target stipulated in 'Estonia 2020' is to keep the final energy consumption in Estonia at the same level in 2020 as it was in 2010. This means that energy consumption must stay at 121.3 PJ, and the aggregate energy savings compared to the basic scenario in the Renewable Energy Action Plan until 2020 must amount to 11.5%, i.e. 15.7 PJ by 2020.
<b>Objective 3:</b>	to construct at least 10 publicly accessible nearly zero-energy buildings of various types with total usable area not less than 5000 m <sup>2</sup> in Estonia by 2015.

### 1.3.1 National primary energy conservation target and energy conservation forecasts until 2020

In setting energy conservation and efficiency targets, these can be viewed as consisting of two parts:

- the target for the energy sector with respect to conversion of fuels, consumption as a raw material and distribution and transmission of energy;
- the target for final energy consumption with respect to final energy consumption sectors like households, industry, transport, commercial and public service sector and agriculture (see section 1.3.2).

The need to deal with the energy sector separately can be understood from figure 3. There, it can be seen that the final energy consumption compared to the primary energy supply is relatively modest compared to our closest neighbours in the EU. This is primarily due to the fact that Estonia exports fuels and electricity in considerable amounts<sup>6</sup>. Despite the fact that some events that significantly affect Estonia's energy export prospects can be forecast (e.g. the launch of Olkiluoto nuclear plant in 2013), Estonian does not have a capacity to assess our energy exports in a way that would allow us to set a comprehensive energy conservation and efficiency target for our energy sector for 2020.



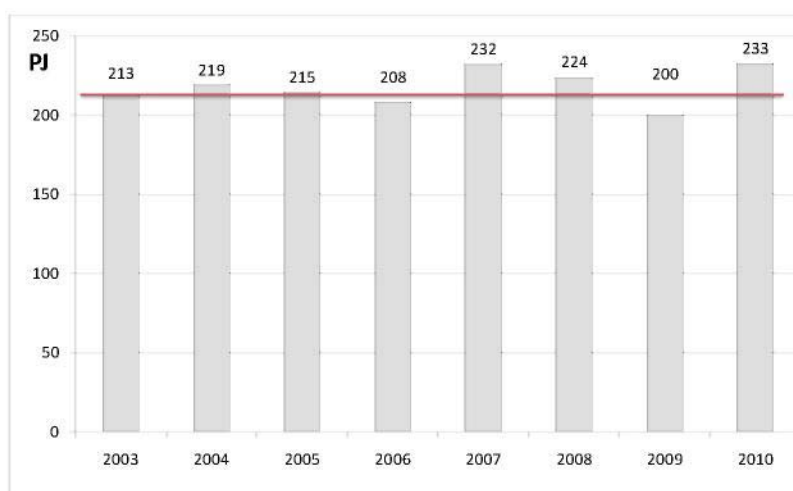
Estonia; Latvia; Lithuania; Poland; Sweden; Finland

**Figure 3** The ratio of the amount of final energy consumption and the primary energy supply (Eurostat data on 2007).

When looking back on the history of Estonia's energy policy, it must be remembered that the Long-Term National Development Plan for the Fuel and Energy Sector until 2015<sup>7</sup>, approved by the Riigikogu in 2004, stipulated an objective to keep the volume of primary energy consumption at the 2003 level until 2010. The progress towards this target can be seen in figure 4. Although the figure allows for different interpretations, the historical data indicate that the external influence (e.g. the situation on the regional electricity market or the prices of energy carriers on the global market) is much bigger than the steps taken in the state to control primary energy consumption.

<sup>6</sup> In 2007, Estonia exported 23.5 PJ of fuel (incl. 14 PJ of shale oil and 6 PJ of wood briquettes and pellets) and 10 PJ of electricity.

<sup>7</sup> <https://www.riigiteataja.ee/akt/829062> (in Estonian).



**Figure 4** Primary energy supply in Estonia in the period 2003–2010.

Despite the difficulties in forecasting the future and historical experience, there are processes in Estonia that result in restrictions for certain parts of the energy sector. These restrictions are essentially similar to the primary energy conservation objectives and their more detailed description is in subchapter 2.1.

### *1.3.2 National final energy consumption targets and progress towards these so far*

#### **Targets in the Energy Efficiency Plan 2007–2013 and progress towards these**

The overall target stipulated in the Energy Efficiency Plan 2007–2013 is to fulfil two-thirds of the target set out in Directive 2006/32/EC, and to ensure 5.1 PJ or 1417 GWh (transport sector not included) fuel and energy savings at the point of end use during the period 2008–2013.

Based on Article 4(1) of and Annex 4 to Directive 2006/32/EC, the European Commission proposed a draft on methodology for identifying the effectiveness of energy conservation measures. To assess the existence of data required for assessing the effectiveness of Estonia's energy conservation policy and the changes that took place in 2008 and 2009, a survey was conducted in 2010 to develop an energy conservation policy monitoring mechanism<sup>8</sup>. To assess the changes in energy efficiency and energy savings, the draft methodology sent by the Commission on 2 July 2010 to the committee stipulated in Article 16 of Directive 2006/32/EC was used. The survey led to the conclusion that the energy savings estimated on the basis of top-down indicators<sup>9</sup> were about 800 GWh, i.e. 2.88 PJ in 2008. The indicators for 2009 could not be used as there were not enough data on these; the bottom-up methods<sup>10</sup> could likewise not be used due to poor accessibility of data.

#### **Revised target of the Energy Efficiency Plan 2007–2013**

Considering Article 4(1) of Directive 2006/32/EC, the target for the final energy consumption in Estonia is to achieve 9.9 PJ energy savings by 2016, as a result of energy conservation measures. The calculation of the target that complies with Annex 1 to Directive 2006/32/EC is given in Annex 1 to this document.

#### **Energy conservation target stipulated in 'Estonia 2020'**

In parallel to this plan, the National Reform Programme 'Estonia 2020' was drawn up. According to that plan, there is a separate target for final energy consumption: to keep the final energy consumption in Estonia at the level of 2010 in 2020. Considering the importance of 'Estonia 2020', its target for final energy consumption is

<sup>8</sup> See the summary and report on the survey at <http://valitsus.ee/et/riigikantselei/tof/tarkade-otsuste-fondi-uuringute-kokkuvotted> (in Estonian).

<sup>9</sup> Top-down indicators are numbers that indicate savings and changes in energy efficiency and are calculated using various energy statistics.

Top-down indicators have no cause-effect relations with energy conservation measures; energy conservation measures may be just one among several reasons for a change in the indicator.

<sup>10</sup> A method where the 'bottom-up' indicators are received using the data characterising effectiveness of energy conservation measures.

also taken into account in planning the measures under this plan (i.e. in addition to the targets set in Directive 2006/32/EC). The Ministry of Economic Affairs and Communications compiled long-term final energy consumption forecasts when drawing up the Renewable Energy Actin Plan until 2020. According to these forecasts, Estonia's final energy consumption would be 137 PJ in the case of the basic or reference scenario and 131 PJ in the case of the additional energy efficiency scenario in 2020. The final energy consumption of Estonia was 121.3 PJ in 2010; thus, the energy savings target of 'Estonia 2020' is 15.7 PJ (11.5%) smaller than the final energy consumption that would be in 2020 should current trends continue.

The breakdown of targets by various years, energy carriers and sectors under the National Reform Programme 'Estonia 2020' can be seen in table 3. In the case of the target for 2016, it has been presumed that it amounts to 55% of the total target of 'Estonia 2020'.

### ***1.3.3 National targets regarding nearly zero-energy buildings so far***

By May 2011, KredEx had compiled initial proposals about requirements for low-energy and nearly zero-energy buildings in Estonian conditions. In the work conducted, KredEx tried also to take into account information regarding the methodology for identifying the cost-optimal levels of the minimum requirements for energy performance of buildings, as devised by the European Commission on the basis of Article 5 of Directive 2010/31/EU, by 30 June 2011. The proposals are yet to be explained and discussed with stakeholders; establishment of binding new requirements will be considered in the first half of 2012 when the minimum requirements for energy performance of buildings will be reviewed.

The most important difference between the requirements for low-energy and nearly zero-energy buildings is the generation of electricity from local renewable sources of energy in the buildings. Unfortunately, the financial calculations show that local electricity generation in buildings is not cost-optimal right now.

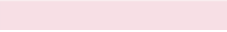
Estonia has not set any targets for developing or constructing low-energy or nearly zero-energy buildings.


**Table 2. An overview of the targets for primary energy consumption, final energy consumption and energy savings achieved and forecast**

	Primary energy supply		Final energy consumption		
	Primary energy supply target, PJ	Actual or forecast primary energy supply, PJ	Directive 2006/32/EC		Directive 2010/31/EU
Energy conservation target in the energy efficiency action plan, PJ			Energy savings achieved or forecast in final energy consumption, PJ	Target for the share of nearly zero-energy buildings in the total usable area of buildings, %	
<b>Year</b>					
2008-2009		224 (2008); 200 (2009)		2.9	
2010		233	3.3 <sup>11</sup>	3.3	
2015					1%
2016			9.9 <sup>12</sup>	<i>At least 9.9</i>	
2020					100%

Explanations:

*Italics* the figure is a forecast

 a required figure, as stipulated in Directive 2006/32/EC

 a required figure, as stipulated in Directive 2010/31/EU

<sup>11</sup> In the first energy efficiency action plan (Estonian Energy Efficiency Plan 2007–2013), the energy conservation target for the period 2007–2013 was 5.1 PJ (transport sector not included). The target being broken down proportionally by years would have meant 2.55 PJ for 2010.

<sup>12</sup> In the first energy efficiency action plan, the overall energy conservation target was 7.65 PJ (transport sector not included).

Table 3. Energy conservation targets by sectors and main energy carriers until 2016 and 2020

		Final consumption according to ESA, PJ			Basic scenario, PJ	Basic scenario, PJ	Additional energy efficiency scenario, PJ	Difference (additional energy efficiency scenario and actual consumption in 2009), PJ	Desired energy savings in the sector, according to the target in 'Estonia 2020', PJ	Desired energy consumption in 2020, according to 'Estonia 2020', PJ	Desired energy savings in the sector by 2016, according to the target in 'Estonia 2020', PJ	Desired energy consumption in 2016, considering the target in 'Estonia 2020', PJ
		2008	2009	2010	2016	2020	2020					
Industry	Ordinary fuels	11.3	5.7		13.4	14.4	14.4	8.7	1.7	12.7	0.9	12.5
	Motor fuels	1.2	1.1		1.3	1.4	1.4	0.3	0.2	1.3	0.1	1.2
	Electricity	8.4	7.0		10.2	11.0	11.0	4.0	1.3	9.7	0.7	9.5
	Heat	7.8	7.1		9.0	9.7	8.8	1.7	1.1	8.6	0.6	8.4
	Total	28.7	20.9		33.9	36.5	35.6	14.7	4.2	32.4	2.3	31.6
Agriculture	Ordinary fuels	0.8	0.4		0.9	0.9	0.9	0.5	0.1	0.8	0.1	0.8
	Motor fuels	1.8	2.3		2.1	2.2	2.2	-0.1	0.3	2.0	0.1	2.0
	Electricity	0.7	0.6		1.0	1.1	1.1	0.5	0.1	1.0	0.1	1.0
	Heat	0.4	0.4		0.4	0.4	0.4	0.0	0.1	0.4	0.0	0.4
	Total	3.8	3.7		4.5	4.7	4.6	0.9	0.5	4.2	0.3	4.2
Transport	Ordinary fuels	2.5	2.5		3.2	3.4	3.4	0.9	0.4	3.1	0.2	3.0
	Motor fuels	19.1	17.5		21.4	22.7	22.1	4.6	2.6	20.1	1.4	20.0
	Electricity	0.3	0.2		0.5	0.5	0.5	0.3	0.1	0.5	0.0	0.5
	Heat	0.1	0.1		0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1
	Total	22.1	20.3		25.2	26.8	26.2	5.9	3.1	23.7	1.7	23.5
Services	Ordinary fuels	1.6	1.5		1.3	1.4	1.1	-0.4	0.2	1.2	0.1	1.2
	Motor fuels	0.5	0.5		0.6	0.7	0.7	0.2	0.1	0.6	0.0	0.6
	Electricity	8.9	8.7		9.0	9.8	9.5	0.9	1.1	8.6	0.6	8.4
	Heat	5.9	6.0		5.1	5.1	5.1	-1.0	0.6	4.5	0.3	4.8
	Total	16.9	16.7		16.0	16.9	16.4	-0.3	1.9	14.9	1.1	15.0

Households	Ordinary fuels	19.3	20.0		18.4	18.4	16.0	-4.0	2.1	16.3	1.2	17.3
	Motor fuels	10.9	10.7		11.8	12.5	12.3	1.6	1.4	11.0	0.8	11.0
	Electricity	6.6	6.8		7.6	8.2	8.0	1.3	0.9	7.3	0.5	7.1
	Heat	14.0	13.8		12.9	12.9	11.7	-2.1	1.5	11.4	0.8	12.1
	Total	50.8	51.3		50.7	52.1	48.1	-3.2	6.0	46.1	3.3	47.4
Total	Ordinary fuels	35.6	30.2		37.2	38.6	35.9	5.8	4.4	34.2	2.4	34.8
	Motor fuels	33.6	32.0		37.2	39.5	38.7	6.7	4.5	35.0	2.5	34.7
	Electricity	24.9	23.3		28.3	30.6	30.2	6.9	3.5	27.1	1.9	26.4
	Heat	28.3	27.6		27.5	28.3	26.2	-1.4	3.2	25.0	1.8	25.8
	Total	122.3	113.0	121.3	130.3	137.0	131.0	18.0	15.7	121.3	8.6	121.7

## 2 PRIMARY ENERGY CONSERVATION

### 2.1 Primary energy conservation targets, primary energy supply projection

Currently, Estonia does not have a primary energy conservation target.

Estonia's primary energy supply and any possible primary energy conservation are affected mostly by the oil shale sector. The target for the oil shale mining volume stipulated in the National Development Plan for the Use of Oil Shale 2008–2015 the Riigikogu approved on 21 October 2008 can also be viewed as an agreed primary energy conservation target. According to that plan, the Earth's Crust Act and the conditions for issuing extraction permits must be amended in a way that the maximum amount of oil shale that may be extracted is up to 20 million tonnes a year and the target for 2015 is to reduce the extraction amount to 15 million tonnes a year. The National Development Plan of the Energy Sector until 2020 sets a target for 2020 as well: the volume of oil shale used in 2020 should be smaller than the amount stipulated in the oil shale development plan (i.e. 15 million tonnes a year by 2015).

The long-term energy sector development forecasts that estimate the possible total final energy consumption and the related primary energy supply until 2020 do not contain any forecasts for possible primary energy savings. Should current trends continue, the primary energy supply of Estonia may exceed 250 PJ in 2020, i.e. increase by 25% compared to 2009.

The future of the energy sector influences primary energy consumption the most. To provide a high-quality assessment of the possible primary energy savings, detailed information on the situation of the energy markets in 2020 is necessary.

### 2.2 Strategies contributing to energy conservation

#### 2.2.1 National Development Plan of the Energy Sector until 2020

<b>Short description</b>	The National Development Plan of the Energy Sector until 2020 describes the situation in the energy sector of Estonia, its future perspectives on energy markets, required measures and activities for achieving the targets. The overall objective of the plan is to ensure continuous, efficient, sustainable energy supply at a justified price and sustainable energy consumption in Estonia.
<b>Detailed information</b>	<a href="http://www.mkm.ee/public/ENMAK_EN.pdf">http://www.mkm.ee/public/ENMAK_EN.pdf</a>
<b>Assumptions</b>	The plan is based on the assumption that Estonia's economy and prosperity grow faster than the EU average. To ensure electricity supply, additional capacity will be built mostly in Estonia.
<b>Sphere of influence</b>	Primary energy
<b>Legal status</b>	Approved by the Riigikogu in its decision of 15 June 2009
<b>Sector(s) affected by the plan</b>	Energy sector (oil shale, energy generation and distribution)
<b>Links between the plan and EU primary energy conservation targets for 2020</b>	The measures that are described in the plan and contribute to primary energy conservation are: <u>Measure 1.1</u> : Diversification of energy supply through the construction of new connections and more even distribution of energy sources in the energy balance; <u>Measure 2.1</u> : Development of energy conservation through the Energy Efficiency Plan; <u>Measure 2.2</u> : Improvement of the efficiency of the use of oil shale; <u>Measure 2.3</u> : Development of energy technologies (through the Estonian Energy Technology Programme, see section 2.2.3); <u>Measure 2.4</u> : Preparation and implementation of the renewable energy activity plan; <u>Measure 2.5</u> : Preparation and implementation of the national heat sector development plan; <u>Measure 2.6</u> : Implementation of the new EU regulations concerning sustainable energy;



	<p><u>Measure 3.4</u>: Analysis of the alternatives of the taxation of the energy sector;</p> <p><u>Measure 3.5</u>: Promotion of education and research in the energy sector.</p> <p>The most immediate objective that is stipulated in the National Development Plan for the Energy Sector until 2020 and that may be considered to be one of the targets for primary energy conservation is the target for oil shale use: the volume of oil shale to be used in 2020 should be smaller than the volume stipulated in the oil shale development plan (i.e. 15 million tonnes by 2015).</p>
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### 2.2.2 Development Plan of the Estonian Electricity Sector until 2018

<b>Short description</b>	The Development Plan of the Estonian Electricity Sector until 2018 describes the situation in the electricity sector, the development of electricity generation and measures and activities required for achieving the targets. The overall objective of the plan is to make enterprises take investment decisions that ensure continuous, sustainable power supply at a justified price in Estonia.
<b>Detailed information</b>	<a href="http://www.mkm.ee/public/ELMAK_EN.pdf">http://www.mkm.ee/public/ELMAK_EN.pdf</a>
<b>Assumptions</b>	The plan is based on an assumption that after 2015, Estonia should focus primarily on meeting the domestic demand. Upon opening of the electricity market, the first priority of Estonian electricity producers would be supplying electricity to Estonian electricity consumers.
<b>Sphere of influence</b>	Primary energy
<b>Legal status</b>	Approved by the Government of the Republic of Estonia in their Directive No 74 of 26 February 2009
<b>Sector(s) affected by the plan</b>	Electricity generation, transmission and distribution. Connections to the electricity networks of other states.
<b>Links between the plan and EU primary energy conservation targets for 2020</b>	<p>The measures that are described in the plan and contribute to primary energy conservation are:</p> <p><u>Measure 2.1</u>: Supporting sustainable methods of electricity production</p> <p><u>Measure 2.2</u>: Updating of legislative acts with an aim of enhancing the efficiency of electricity companies</p> <p><u>Measure 2.3</u>: Implementation of innovative power network solutions</p> <p><u>Measure 2.4</u>: Raising awareness related to saving electricity</p> <p>The most immediate objective that is stipulated in the Development Plan of the Estonian Electricity Sector until 2018 and that may be considered to be one of the targets for primary energy conservation is the development of sustainable electricity supply, reduction of environmental emissions and sustainable use of oil shale stocks.</p>

### 2.2.3 Estonian Energy Technology Programme

<b>Short description</b>	The Estonian Energy Technology Programme sets out the priorities related to the energy sector and provides systematic information to decision-makers in order to help them in making decisions related to energy. The priorities of the Energy Technology Programme are oil shale technologies and new energy technologies based mainly on renewable energy sources. The implementation of the programme makes it possible to obtain a better overview of the use of the funds allocated to the energy sector, to decrease duplication and improve cooperation between the ministries in the field of energy.
<b>Detailed information</b>	<a href="http://www.eas.ee/index.php/ettevotjale/innovatsioon/energiatehnoloogia-programm/uldust">http://www.eas.ee/index.php/ettevotjale/innovatsioon/energiatehnoloogia-programm/uldust</a> (in Estonian)
<b>Assumptions</b>	Support for Estonian R&D
<b>Sphere of influence</b>	Primary energy

<b>Legal status</b>	The programme is a part of the implementation plan of the Estonian R&D and innovation strategy 'Knowledge-based Estonia 2007–2013';
	a cooperation programme of the Ministry of Economic Affairs and Communications, the Ministry of Education and Research, the Ministry of Agriculture and the Ministry of the Environment.
<b>Sector(s) affected by the plan</b>	Energy sector (energy production: oil shale technology, technology based on renewable sources of energy, nuclear power)
<b>Links between the plan and EU primary energy conservation targets for 2020</b>	Sets of measures for primary energy conservation: (1) and (2) support for R&D (introduction and development of green energy technologies, R&D required for promoting the use of biomass and bioenergy) and development of human resources in the field of energy; (3) support for technology transfer: devisal and introduction of innovative solutions for energy generation (measures for developing renewable energy technologies and environmental technologies); (4) development of joint activities, value adding services: to increase people's awareness of energy technologies and their economic perspectives (development monitoring, technological development mapping, cost-effectiveness analyses, etc.)

#### 2.2.4 National Development Plan for the Use of Oil Shale 2008–2015

<b>Short description</b>	The strategic objective of the National Development Plan for the Use of Oil Shale 2008–2015 is to ensure the supply of oil shale energy in Estonia and the energy independence of Estonia. One strategic objective set out in the Development Plan for the Use of Oil Shale is to increase the efficiency of the use and extraction of oil shale.
<b>Detailed information</b>	<a href="http://www.envir.ee/232764">http://www.envir.ee/232764</a> (in Estonian)
<b>Assumptions</b>	The plan is based on the assumption that Estonia's economy and prosperity grow faster than the EU average.
<b>Sphere of influence</b>	Primary energy
<b>Legal status</b>	Approved by the Riigikogu in its decision of 21 October 2008
<b>Sector(s) affected by the plan</b>	Oil shale sector
<b>Links between the plan and EU primary energy conservation targets for 2020</b>	The measures that are described in the plan and contribute to primary energy conservation are: <u>Measure 1.2:</u> Implementation of regulation for the reduction of the use of oil shale <u>Measure 2.1:</u> Optimisation of extraction volumes <u>Measure 2.2:</u> Promotion of applied research and product development in the field of oil shale <u>Measure 2.4:</u> Promotion of education and research According to that plan, the Earth's Crust Act and the conditions for issuing extraction permits must be amended in a way that the maximum amount of oil shale that may be extracted is up to 20 million tonnes a year and the target for 2015 is to reduce the extraction amount to 15 million tonnes a year. However, the state has issued oil shale extraction permits for 25.25 million tonnes a year. As the Earth's Crust Act allows for up to 20 million tonnes of oil shale to be extracted each year, on 10 August 2009, the Ministry of the Environment issued Directive No 1319 to set a maximum allowed volume of oil shale each owner of an extraction permit can extract each year. The aggregate maximum allowed volume of oil shale each company having a valid extraction permit (Eesti Energia Kaevandused AS, VKG Kaevandused OÜ, Kiviõli Keemiatööstuse OÜ and AS Kunda Nordic Tsement) can extract each year amounts to 20 million tonnes.

#### 2.2.5 National Strategic Reference Framework 2007–2013

<b>Short description</b>	The national strategic reference framework 2007–2013 is implemented through three operational programmes: operational programmes for the development of human resources, for the living environment and for the economic environment.
<b>Detailed information</b>	Operational Programme for Human Resource Development: <a href="http://www.struktuurifondid.ee/public/OP1_21juuni2007_ENG.pdf">http://www.struktuurifondid.ee/public/OP1_21juuni2007_ENG.pdf</a> Operational Programme for the Development of the Living Environment: <a href="http://www.siseministeerium.ee/public/OP2_21juuni2007_ENG_1.pdf">http://www.siseministeerium.ee/public/OP2_21juuni2007_ENG_1.pdf</a> Operational Programme for the Development of Economic Environment: <a href="http://www.struktuurifondid.ee/public/maj.keskond_ENG.pdf">http://www.struktuurifondid.ee/public/maj.keskond_ENG.pdf</a>
<b>Assumptions</b>	
<b>Sphere of influence</b>	Final energy consumption, primary energy
<b>Legal status</b>	Approved by the European Commission
<b>Sector(s) affected by the plan</b>	Energy sector (district heating) Public Sector Transport Industry Service sector
<b>Links between the plan and EU primary energy conservation targets for 2020</b>	<p>The activities conducted under operational programmes are grouped under priority axes. The number of priority axes and the most important priority axes with respect to energy conservation objectives are as follows (broken down by operational programmes):</p> <ol style="list-style-type: none"> <li>1. <b>Operational Programme for Human Resource Development: 7 priority axes, the most important ones being:</b> <ul style="list-style-type: none"> <li>- <u>I Lifelong learning</u>. Support under this axis is granted, for example, to content development of vocational education, creation of lifelong learning opportunities for adults, development of the professional qualifications system and development of environmental education.</li> <li>- <u>IV Knowledge and skills for innovative entrepreneurship</u>. Support under this axis is granted, for example, for training events for employees of enterprises and consultation services for entrepreneurs.</li> </ul> </li> <li>2. <b>Operational Programme for the Development of the Living Environment: 8 priority axes, the most important ones being:</b> <ul style="list-style-type: none"> <li>- <u>I Development of the water and waste management infrastructure</u>, under which enterprises are ensured better access to the capital they need for improving their productivity, and support is granted for technological innovations, development capacity and productivity improvement. Implementation of innovative business ideas is fostered.</li> <li>- <u>III The priority axis of the development of energy sector</u> has an objective to contribute to making the energy sector more efficient and environmentally friendly. Support is granted for promoting the wider use of renewable energy sources and protecting ambient air from one side and for promoting energy conservation in distribution networks and at final customers, including the housing sector from the other side.</li> <li>- <u>IV Integral and balanced development of regions</u>. It focuses primarily on the activities of three types: development of local public services, development of urban regions and strengthening the competitiveness of regions. The dominant part of the investments local authorities make into public service infrastructure (incl. buildings) is made through this support measure.</li> <li>- <u>V Development of education infrastructure</u>. Development of education infrastructure focuses on modernisation of vocational education, of schools for children with special educational needs, open youth centres, information and counselling centres and hobby schools.</li> <li>- <u>VI Development of healthcare and welfare infrastructure</u>. The priority axis of</li> </ul> </li> </ol>

	<p>the development of healthcare and welfare infrastructure includes modernisation of nursing care hospitals and acute care hospitals and welfare institutions for children and people with special psychiatric needs.</p> <p><b>3. Operational Programme for the Development of Economic Environment: 7 priority axes, the most important ones being:</b></p> <ul style="list-style-type: none"> <li>- <u>I Innovation and growth capacity of enterprises</u> under which support is granted to ensure that enterprises have better access to the capital they need for improving their productivity, and support is also granted for technological innovations, development capacity and productivity improvement. Implementation of innovative business ideas is fostered.</li> <li>- <u>III The priority axis of transport investments of strategic importance</u> is used for developing environmentally friendly public transport.</li> <li>- <u>IV Under the priority axis of development of transport infrastructure of regional importance</u>, support is granted for improvement of railway and road (public) transport infrastructure.</li> <li>- <u>V Development of information society</u>. Under this axis, support is granted, among other things, to improving Internet access in Estonia.</li> </ul>
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### 2.2.6 Transport Development Plan 2006–2013

<b>Short description</b>	One of the main objectives of the development plan is to contribute to Estonia's transport system becoming an efficient, safe and environmentally friendly system that satisfies people's and goods' mobility needs in Estonia and abroad. In addition to that, the plan foresees that the transport system must be cost-effective and make use of limited resources in an efficient way in order to ensure competitiveness of the transport system and the whole economy.
<b>Detailed information</b>	<a href="https://www.riigiteataja.ee/aktilisa/0000/1278/4604/12784610.pdf">https://www.riigiteataja.ee/aktilisa/0000/1278/4604/12784610.pdf</a> (in Estonian)
<b>Assumptions</b>	The plan assumes that the economy grows fast. According to the development plan, the state must make interventions to develop the transport sector: to provide targeted financing, make investments, purchase services, establish regulation and conduct supervision.
<b>Sphere of influence</b>	Final energy consumption, primary energy
<b>Legal status</b>	Approved by the Government of the Republic of Estonia on 28 April 2011.
<b>Sector(s) affected by the plan</b>	Transport
<b>Links between the plan and EU primary energy conservation targets for 2020</b>	<p>The measures that are described in the plan and contribute to primary energy conservation are:</p> <p><u>Measure 1.1:</u> Setting an order in the transport policy implementation system</p> <p><u>Measure 1.2:</u> Renewal of the national transport financing system</p> <p><u>Measure 3.2:</u> Reducing people's mobility needs and dependency on cars</p> <p><u>Measure 5.2:</u> Stimulation of the use of environmentally friendly technologies</p> <p><u>Measure 7.1:</u> Improvement of nationwide management, coordination and supervision of public transport</p> <p><u>Measure 7.2:</u> Increasing competitiveness of public transport</p> <p><u>Measure 7.3:</u> Promotion of NMV traffic</p>

### 2.2.7 Estonian National Housing Development Plan 2008–2013

<b>Short description</b>	The Estonian National Housing Development Plan 2008–2013 describes the situation in
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	the housing sector of Estonia, its problems, future perspectives and measures and activities required for achieving the targets. The principal aims are ensuring access to suitable and affordable housing for the population of Estonia, high-quality and sustainable housing stock and diversified residential areas that are developing in a balanced and sustainable manner.
<b>Detailed information</b>	<a href="http://been-online.org/fileadmin/medias/downloads/beenetwork/texts/estonia/Eluasemevaldkonna_arengukava_eng_19.09.2008.pdf">http://been-online.org/fileadmin/medias/downloads/beenetwork/texts/estonia/Eluasemevaldkonna_arengukava_eng_19.09.2008.pdf</a>
<b>Assumptions</b>	The plan is based on an assumption that the economic development of Estonia is faster than in the EU on average.
<b>Sphere of influence</b>	Final energy consumption
<b>Legal status</b>	Approved by the Government of the Republic of Estonia in their Directive No 35 of 17 January 2008
<b>Sector(s) affected by the plan</b>	Buildings (housing and residential areas)
<b>Links between the plan and EU primary energy conservation targets for 2020</b>	<p>The measures that are described in the plan and contribute to primary energy conservation are:</p> <p><u>Measure 2.1:</u> Increasing the quality and energy performance of the housing stock</p> <p><u>Measure 2.2:</u> Increasing awareness to improve the housing stock</p> <p><u>Measure 2.3:</u> Mapping the condition of the housing stock</p> <p><u>Measure 2.4:</u> Improving the legal environment and increasing administrative capacity</p> <p><u>Measure 3.4:</u> Valuing milieu-valuable residential areas</p> <p>The most immediate objective that is stipulated in the Estonian National Housing Development Plan 2008–2013 and that may be considered to be one of the targets for primary energy conservation is renovation of the housing stock to improve their structural quality and energy performance.</p>

### 2.2.8 National Reform Programme 'Estonia 2020'

<b>Short description</b>	The programme describes the main political courses of action and measures relating to improvement of Estonia's competitiveness, sets targets for 2015 and 2020 that match Estonian challenges and are in compliance with the objectives of the EU 2020 strategy that have been agreed among the member states.
<b>Detailed information</b>	<a href="http://www.valitsus.ee/UserFiles/valitsus/en/government-office/growth-and-jobs/estonian-positions-on-eu-2020/National%20Reform%20Programme%20Estonia%202020.pdf">http://www.valitsus.ee/UserFiles/valitsus/en/government-office/growth-and-jobs/estonian-positions-on-eu-2020/National%20Reform%20Programme%20Estonia%202020.pdf</a>
<b>Assumptions</b>	The programme is based on an assumption that housing and residential areas must meet the needs of the people, support social inclusion, follow the principles of sustainable development, support economic operation and balanced regional development.
<b>Sphere of influence</b>	Final energy consumption
<b>Legal status</b>	Approved by the Government of the Republic of Estonia in their Directive No 35 of 17 January 2008
<b>Sector(s) affected by the plan</b>	Energy sector Public Sector Transport
	Industry Households Service sector
<b>Links between the plan and EU</b>	Of the priorities of the government policy described in the programme, the ones that contribute towards improved final energy consumption and primary energy conservation

<b>primary energy conservation targets for 2020</b>	<p>the most are:</p> <p><u>Priority 12</u>: Implementing long-term structural changes in the energy sector in compliance with Estonia's energy security and efficiency objectives</p> <p><u>Priority 13</u>: Reducing the general resource-intensiveness, including energy intensiveness, of our economy, through increasing energy efficiency</p>
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### 2.2.9 Estonian Rural Development Plan 2007–2013

<b>Short description</b>	The general aim of the plan is to support balanced development of rural areas through measures for rural development related to the European Union Common Agricultural Policy. Its priorities include improving the competitiveness of the agricultural and forestry sectors and improving the environment and countryside.
<b>Detailed information</b>	<a href="http://www.agri.ee/public/juurkataloog/MAK/RDP_2007-2013.pdf">http://www.agri.ee/public/juurkataloog/MAK/RDP_2007-2013.pdf</a>
<b>Assumptions</b>	
<b>Sphere of influence</b>	Final energy consumption
<b>Legal status</b>	Approved by the Government of the Republic of Estonia in their Directive No 472 of 5 November 2009
<b>Sector(s) affected by the plan</b>	Agriculture and forestry sectors
<b>Links between the plan and EU primary energy conservation targets for 2020</b>	<p>The measures that are described in the plan and contribute to primary energy conservation are:</p> <p><u>Measure 1.1</u>: Training and information activities: covers issues related to competitiveness of agriculture and forestry, innovation, knowledge-based economy, land management and agricultural environment.</p> <p><u>Measure 1.4.1</u>: Investments into the development of micro-sized agricultural holdings</p> <p><u>Measure 1.4.2</u>: Investments in livestock buildings</p> <p><u>Measure 1.6.1</u>: Investment support for processing agricultural and non-wood forestry products</p> <p><u>Measure 1.6.2</u>: Investment support for organic farmers</p> <p><u>Measure 1.7.1</u>: Cooperation to develop new products, processes and technologies in the agriculture and food sector and in the forestry sector</p>

### 2.3 Primary energy conservation measures

Although Directive 2006/32/EC on energy end-use efficiency and energy services does not deal with or consider energy efficiency improvement in the energy sector, the measures to realise the primary energy conservation potential must also be discussed in order to have a complete picture of Estonian energy conservation policy. This subchapter describes energy conservation measures in generating, transmitting and distributing energy.

### 2.3.1 Energy efficiency measures in energy generation

Estonia implements various measures that result in improved energy efficiency at energy producers' or in the whole energy system. Electricity and heat producers are the ones these measures affect the most.

#### Electricity producers, including heat and power co-generation plants

The measures that affect electricity producers' operation and foster improved energy efficiency in generating electricity are the following:

- 1) opening of the electricity market. At present, the electricity market is open for those customers whose annual consumption exceeds 2 GWh; on 1 January 2013, the market will be opened for all customers. Open electricity market creates competition among producers; this is favourable for more efficient electricity producers;
- 2) modernisation of oil shale electricity generation facilities. Estonia is going to meet all its obligations taken in the accession treaty: we will close all electricity generation facilities that do not comply with Directive 2001/80/EC on large combustion plants or restrict their work by 2016. At the same time, new oil shale-based electricity generation facilities will be built to ensure security of electricity supply. In 2011, we will start construction of a 300 MW<sub>el</sub> electricity generation plant based on fluidised bed technology; in 2012, a decision on a further 300 MW<sub>el</sub> plant will be made;
- 3) support offered for constructing new CHP plants. The Electricity Market Act foresees operating support for constructing fossil-fuel-fired CHP plants. The support on the terms and conditions stipulated in the act is ensured to plants that generate electricity in efficient cogeneration regime from waste as defined in the Waste Act, from peat or from the retort gas from oil shale processing. Plants that use other sources of energy receive support if their electrical capacity does not exceed 10 MW. Operating support, according to the rate stipulated in the act, is granted on the amount of electricity the plant generates to the network for 12 years after starting the production;
- 4) requirements for efficiency of CHP plants. CHP plants are divided into high-efficiency and low-efficiency plants on the basis of cogeneration Directive 2004/8/EC. Only those CHP plants that meet the high-efficiency cogeneration requirements are granted support. High-efficiency cogeneration requirements are established in a regulation<sup>13</sup>;
- 5) environmental charges. The Environmental Charges Act is based on the 'polluter pays' principle. The environmental charges make producers reduce emissions from electricity generation.

#### Heat producers

Measures that affect heat producers' operation and foster improved energy efficiency in generating heat are the following:

- 1) options for local authorities to use district heating regions in compliance with the District Heating Act. A district heating region is an area determined by a comprehensive plan of a local authority within which consumer installations are provided with heat from the district heating network and the use of other sources of energy is restricted. District heating regions allow for CHP plants to be constructed. On the basis of the District Heating Act, 106 local authorities have established 164 district heating regions.<sup>14</sup>

<sup>13</sup> Requirements for efficient coproduction, regulation No 30 of the Minister of Economic Affairs and Communications, 3 May 2007 (<https://www.riigiteataja.ee/akt/12825847>; in Estonian).

<sup>14</sup> State's efforts in ensuring the sustainability of heat supply, audit report by the National Audit Office of Estonia (2011): <http://www.riigikontroll.ee/tabid/206/Audit/2169/Area/4/language/en-US/Default.aspx>.

- 2) heat price regulation. The ceiling for heat prices is set by the regulator of energy prices (the Estonian Competition Authority) for all companies offering district heating services, including boiler-houses and CHP plants. The methodology for setting the ceiling for heat prices includes the minimum technical requirements for the efficiency coefficient of boiler-houses. The efficiency coefficients by fuel types are as follows<sup>15</sup>:
  - a. heat generation from natural gas: not less than 90%, not less than 92% in the case of new plants;
  - b. heat generation from liquid fuels: not less than 85%, not less than 90% in the case of new plants;
  - c. heat generation from solid fuels: not less than 80%, not less than 85% in the case of new plants.

New plants are plants that are less than 10 years old. According to the methodology for establishing the ceiling for heat prices, operators may be required to develop their plant during a certain period of time in order to improve its efficiency and reduce fixed costs.

- 3) environmental charges. The environmental charges make producers reduce emissions from electricity generation;
- 4) support granted under the Operational Programme for the Development of the Living Environment (see section 2.2.5) and from other state budget funds. The measures are used to finance transfer from the use of fossil fuels to the use renewable sources of energy in generating heat and construction of small CHP plants using renewable sources of energy. Implementation of the measures is managed by the Environmental Investment Centre.

### 2.3.2 Energy efficiency measures in transmission and distribution networks

One way to reduce primary energy consumption is to reduce losses in the transmission and distribution networks. For that purpose, Estonia uses various measures in the electricity transmission and distribution networks and district heating networks.

#### **Electricity transmission and distribution networks**

Measures to reduce losses in electricity transmission and distribution networks are as follows:

- 1) network operator's development obligation and methodology for calculating network charges. According to the Electricity Market Act, the Estonian Competition Authority may issue a precept or change the terms and conditions of an activity permit of a network operator to ensure that it provides network services to meet the justified need of its customers. As regards monthly charges, the Estonian Competition Authority may, in compliance with the methodology for calculating network charges<sup>16</sup>, to require that the operator make developments to improve technical efficiency or decrease costs during a certain time period;
- 2) quality requirements for network services. Quality requirements for network services<sup>17</sup> were established in Estonia in 2005, and these, accompanied with contractual penalties, have given a good signal to network operators to improve their service quality and networks that are in poor technical condition.

#### **District heating networks**

The following measures contribute to reducing losses in district heating networks:

<sup>15</sup> Principles for establishing the ceiling for heat prices, Estonian Competition Authority, 2009: <http://www.konkurentsiamet.ee/?id=18306> (in Estonian).

<sup>16</sup> Common methodology for calculating power network charges, Estonian Competition Authority, 2008: <http://www.konkurentsiamet.ee/?id=18288> (in Estonian).

<sup>17</sup> Quality Requirements for Network Services and Conditions for Decreasing Network charges in Case of Violation of Quality Requirements, regulation No 42 of the Minister of Economic Affairs and Communications, 6 April 2005 (<https://www.riigiteataja.ee/akt/129122010047> in Estonian).



- 1) heat price regulation. The methodology for setting the ceiling for heat prices includes the technical criteria for maximum allowed losses from the pipelines. The maximum allowed heat loss from pipelines<sup>18</sup>:
  - a. 24% in 2009;
  - b. 23% in 2010;
  - c. 21% in 2011;
  - d. 20% in 2012;

If heat is cogenerated, the Estonian Competition Authority may establish, in the terms and conditions of operating licences, a different obligation to reduce heat losses from pipelines;

- 2) support granted under the Operational Programme for the Development of the Living Environment (see section 2.2.5) and from other state budget funds. The support is used for modernisation of district heating networks. As a result of the calls for proposals conducted in the period 2009–2011, almost 25 million euros was granted for modernisation of district heating networks and construction of CHP plants and boiler houses using renewable sources of energy.

### **2.3.3 Other primary energy conservation measures**

Only some manufacturing and aviation companies in Estonia participate in the EU emissions trading system. No separate energy efficiency measures for them have been planned. Other primary energy conservation measures in Estonia include activities that focus on increasing the efficiency of shale oil industry; however, most of these focus on environmental protection (e.g. environmental charges and an analysed public revenue principle for oil shale).

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<sup>18</sup> Principles for establishing the ceiling for heat prices, Estonian Competition Authority, 2009: <http://www.konkurentsiamet.ee/?id=18306> (in Estonian).

### 3 ENERGY CONSERVATION IN FINAL ENERGY CONSUMPTION SECTORS

This chapter provides an overview of the progress towards the energy conservation objectives stipulated in Directive 2006/32/EC and describes energy conservation measures in the final energy consumption sectors and sub-sectors. The difference between the sectors and spheres is based on the availability of data on these: statistics on the final energy consumption of sectors (households, transport, etc.) are available but that on the sub-sectors (buildings, electrical equipment, etc.) are not.

#### 3.1 Overview of final energy consumption targets and energy conservation achievements

##### 3.1.1 National final energy consumption target and achievement levels

Table 2 below summarises the available information on the progress of Estonia towards the target for making final energy consumption efficient, as stipulated in Directive 2006/32/EC. It must be born in mind that the recession in Estonia reached its lowest point in 2008 and 2009.

**Table 4.** Savings in final energy consumption as a result of measures under Directive 2006/32/EC on energy end-use efficiency and energy services.

	Target for savings in final energy consumption		Actual or estimated energy savings in final energy consumption	
	In absolute units (PJ)	Percentage (of aggregate energy consumption <sup>19</sup> )	In absolute units (PJ)	Percentage (of aggregate energy consumption)
2008-2009			2.88	2.6%
2010 (1 <sup>st</sup> intermediate result)	3.3	3%		
2016 (whole period)	9.9	9%		

##### 3.1.1.1 Achievement level as to intermediate target for 2010

The data on 2008 and 2009 (see also table 2) indicate that the intermediate target for 2010 was achieved. The interim target for 2010 was 3.3 PJ savings as a result of energy saving measures. Based on the draft methodology of the European Commission<sup>20</sup>, the survey to develop the energy conservation policy monitoring mechanism<sup>21</sup> concluded that the data on 2008 and 2009 indicate that the energy savings achieved in Estonia was 2.88 PJ. The survey used the latest data available; in some cases, the data on 2008 had to be used because there was no data on 2009 yet.

According to the energy statistics on 2010, the aggregate final energy consumption<sup>22</sup> in Estonia was 121 PJ, which is a bit more than the forecasts for 2010 made in the Renewable Energy Action Plan until 2020. On the basis of the basic scenario described in the Renewable Energy Development Plan until 2020, the estimated final energy consumption in 2010 would be 120 PJ, but on the basis of the additional energy efficiency scenario, it would be 119.2 PJ. According to preliminary estimates, the differences may be due to the bigger electricity consumption by the service sector (15% difference between the forecast and actual consumption

<sup>19</sup> The comparison is based on the average final energy consumption in the period 2001–2005; it is also used as a basis for calculating the target for making final energy consumption more efficient in Estonia in compliance with the criteria stipulated in Directive 2006/32/EC (109.3 PJ).

<sup>20</sup> "Recommendations on Measurement and Verification Methods in the Framework of the Directive 2006/32/EC on Energy End-Use Efficiency and Energy Services" (preliminary draft excerpt), DG ENER, 2.07.2010.

<sup>21</sup> ÄF-ESTIVO AS, Tallinn 2010.

<sup>22</sup> Final energy consumption is calculated slightly differently by Eurostat and Estonia. Estonia does not include fuel consumption of boiler-houses of the final consumption sectors. All boiler-houses are under energy conversion. Thus, the losses and consumption of boiler-houses of the final consumption sectors are not included in the final consumption of sectors; instead, these are under the energy conversion and transmission. Such a principle is followed by the energy consumption model of the Ministry of Economic Affairs and Communications that was used in making the forecasts in the Renewable Energy Action Plan until 2020.

in 2010, the absolute difference more than 1 PJ) and households (8% difference between the forecast and actual consumption in 2010, the absolute difference about 0.5 PJ) and bigger heat consumption by households (13% difference between the forecast and actual consumption in 2010, the absolute difference about 1.8 PJ) and the service sector (27% difference between the forecast and actual consumption in 2010, the absolute difference about 1.4 PJ). The changes in the transport sector have been more favourable than expected.

### ***3.1.1.2 Estimated energy savings compared to the overall target***

According to Directive 2006/32/EC, the 2016 target for Estonia is to achieve 9.9 PJ savings as a result of the energy conservation measures implemented in the period 2008–2016.

According to the National Reform Programme 'Estonia 2020', the aim is to keep the final energy consumption at the level of 2010 in 2020. If Estonia were not to implement any energy conservation measures, the final energy consumption would reach 137 PJ in 2020. The final energy consumption forecast for 2010 as presented in the Renewable Energy Action Plan until 2020 was 120 PJ. On the basis of the basic scenario in the Renewable Energy Action Plan until 2020, the energy consumption would reach 130 PJ in 2016; thus, we must prevent the 10 PJ increase by 2016. Adjustment of the forecasts is not yet justified.

### ***3.1.2 National target for developing nearly zero-energy buildings***

An initial proposal for minimum requirements for energy performance, usable with respect to nearly zero-energy buildings in Estonia, was ready in May 2011. It was commissioned by KredEx, the implementing body of the policy on the energy performance of buildings. According to the initial proposal, the efficiency coefficient for nearly zero-energy buildings would be 50–140 kWh/(m<sup>2</sup>·a), depending on the type of the building. Cost-optimal energy performance levels of minimum requirements range from 120 to 200 kWh/(m<sup>2</sup>·a), but the current minimum requirements range from 150 to 300 kWh/(m<sup>2</sup>·a). Thus, the changes in the minimum requirements for energy performance of buildings are significant and require long-term preparations.

Taking into account the above and financial considerations (construction of a nearly zero-energy building is not yet cost-optimal), the 2015 target for nearly zero-energy buildings in Estonia is limited to construction of sample nearly zero-energy buildings in all regional centres of Estonia. At least 10 publicly accessible nearly zero-energy buildings of various types with total usable area not less than 5000 m<sup>2</sup> will be constructed in Estonia by 2015.

Energy performance requirements are made stricter gradually in Estonia, preferably each three years beginning in 2013.

## **3.2 Measures and resulting energy savings**

### ***3.2.1 Methodology for calculating effectiveness of measures***

The effect of the following measures was forecast on the basis of expert opinions by the authors of this document, if possible, also other available methods (e.g. the respective methods of the European Commission). No measures for assessing effectiveness of energy conservation measures have been systematically devised in Estonia. Analyses of the effects of policies and measures are conducted as required and possible.

Assessment of effects of a measure may run the risk of duplicate calculations that also take into account the conservation measures of those companies that participate in the EU emission trading system. Nevertheless, the extent of possible duplicate calculations is not big in Estonia because there are just some isolated manufacturing companies that participate in the EU emission trading system.

### ***3.2.2 Energy conservation policy targets by sectors and assessment of the influence of measures implemented in subsectors***

The targets for various sectors and energy carriers are seen in table 3. Information on the energy conservation potential of the sectors in the table indicates that the targets are likely to be achieved if appropriate measures are taken. In analysing the effect of the measures in the future, we are going to follow the draft methodology

of the Commission<sup>23</sup> and, if required, other methods that allow for analysing the effectiveness of our energy conservation policy.

The effect of the existing and planned energy conservation measures is described by table 5.

### 3.2.3 Energy efficiency and conservation measures

This section provides an overview of energy conservation and efficiency measures in Estonia. Energy efficiency means effective and sustainable generation, distribution, transmission and consumption of energy. The term 'energy conservation' is used in connection with energy conservation measures at final customers'. In this programme, energy efficiency and conservation activities are divided into two:

- energy conservation measures are groups of activities that focus on specific target groups, e.g. the measure of reconstruction of blocks of flats, including insulation of buildings and modernisation of their heating systems. If possible, their effect is assessed;
- Programmes unite single measures in a specific subsector of the energy conservation policy.

Estonian energy conservation measures in various sectors are described in measure cards that are annexed to this document. The annexes to this document contain measure cards of the following subsectors of the energy conservation policy or final energy consumption subsectors:

- 1) buildings
- 2) public sector
- 3) industry
- 4) energy sector
- 5) transport
- 6) appliances of households and service sector
- 7) agriculture
- 8) other measures (horizontal measures, e.g. improvement of policy implementation quality, fuel and electricity excise duties)

Information on the nationally most important measures and programmes is in subsections of this section (see 3.2.3.1–3.2.3.8). In addition, there is a description of the most important measures that have the main aim of improving the quality of energy statistics, data on energy efficiency of the energy sector and energy conservation indicators of the final energy consumption sectors.

The sort description of each measure on the measure cards contains general information on the measure, for example:

- 1) name of measure;
- 2) if it is being implemented or planned;
- 3) timeframe, if known;
- 4) budget required for implementation;
- 5) target group;
- 6) estimated energy savings as a result of implementation.

The resources for assessing the effect of individual measures were inadequate when the programme was drawn up; therefore, the effect of the measures was assessed with respect to the whole final energy consumption sectors or subsectors of energy conservation policy. The results of the assessment are in the following table 5.

**Table 5.** Expected energy savings in final energy consumption as a result of the measures implemented.

Measure group No	Measure group name	Energy type	Final consumption, PJ	Estimated energy conservation potential, %	Estimated energy conservation potential, PJ	Expected energy savings as a result of the activities under the measure group, PJ

<sup>23</sup> "Recommendations on Measurement and Verification Methods in the Framework of the Directive 2006/32/EC".

						<b>2016</b>
1	Buildings	Total	47.0	25%	11.8	3.5
2	Public sector, except buildings	Total	2.0	10%	0.2	0.1
3	Industry	Ordinary fuels	11.3	25%	2.8	<i>0.9</i>
		Electricity	8.4	10%	0.8	<i>0.7</i>
		Heat	7.8	25%	2.0	<i>0.6</i>
		Total	27.5		5.6	2.2
4	Energy sector					
5	Transport	Motor fuels	32.0			<i>2.5</i>
		Electricity	0.3			<i>0.0</i>
		Total	32.3			2.5
6	Appliances of households and service sector	Electricity	11.0	20%	2.2	<i>0.4</i>
7	Agriculture	Total	1.9			<i>0.2</i>
8	Other measures	Total				
	<b>Total measure groups</b>	<b>Total</b>	<b>121.7</b>		<b>19.8</b>	<b>8.9</b>

Note: The figures in italics in light yellow cells denote expected energy savings.

### 3.2.3.1 Buildings

In Estonian energy conservation policy, the main attention is on energy conservation in buildings. The vast majority of Estonian buildings were designed and built in compliance with building standards that did not value energy conservation. Modernisation of buildings to comply with modern energy conservation standards requires billions of euros.

An overview of the measures and programmes aimed at energy performance of buildings is in Annex 2. About 10 of the 30+ measures and programmes are new, planned ones. The measures and programmes cover development and implementation of regulation on energy performance of buildings, modernisation of renovation and construction of buildings, tax policy measures, improvement of the skills of construction specialists, applied R&D to ensure analysis of the state of repairs of the buildings and the technical options for modernising them. Information dissemination on energy conservation in buildings among building users and owners of various target groups is foreseen.

The analysis of the national programmes and measures under way, one of the objectives of which is to modernise the existing or to construct new apartment buildings, indicated that their financial volume in the period 2008–2013 (2015) amounts to about 650 million euros. Of course, the programmes contain many activities that have no relation to energy conservation; nevertheless, these make a significant contribution to the overall state of repairs and energy performance of Estonian buildings. As a result of the measures devised in 2009 and 2010, construction activities intensified and it is likely that construction prices go up – the faster the faster grows demand for construction work in the Nordic countries, not just in Estonia. National measures must seek to maintain a constant strong demand for renovation of buildings.

One very important measure in ensuring sustainable energy use in buildings is high-quality implementation of energy performance regulation. In the field of improving the professional level of specialists and ensuring applicability of the requirements, Estonia has a lot of work to do yet.

### **3.2.3.2 Public sector**

Public sector energy conservation measures fall into two: measures related to energy performance of buildings were discussed in subsection 3.2.3.1; this subsection deals with measures that affect other energy consumption. Other energy consumption in the public sector includes, for example, street lighting, use of office appliances and vehicles and water management. The types of energy used most are heat, electricity and motor fuels. A detailed overview of energy conservation measures and programmes in the public sector are in Annex 3 and in sections 3.3.1–3.3.3.

### **3.2.3.3 Industry**

Energy consumption in Estonian industries and small enterprises varies considerably due to the economic situation: for example, in 2007, the industries used 32 PJ of energy, but two years later, in 2009, they used just 21 PJ. An overview of the measures and programmes aimed at energy conservation in industry is in Annex 4. Energy consumption of industries is made more rational due to measures that are related to the wider energy policy, such as opening of the electricity market, renewable energy charge, fuel and electricity excise duties and reduced differences in excise duty rates. Therefore, energy conservation measures for industries must focus primarily on improvement of the skills and awareness of specialists working in the companies. These energy conservation measures must be implemented simultaneously with other activities to improve competitiveness of companies, and energy conservation policy must include the following:

- encouragement to perform energy audits in industries and small enterprises;
- contribution to improvement of energy auditors' qualifications with respect to industrial energy conservation issues, fostering energy consultants' participation in EU projects related to energy conservation in industries;
- better financing opportunities for energy conservation measures in industries and small enterprises;
- development of databases and methods for benchmarking of companies.

### **3.2.3.4 Energy sector**

Energy efficiency measures in the energy sector can be found in Annex 5. Attaining energy efficiency in the energy sector requires diverse measures, the most important of these being ensuring purposeful application of sectoral regulation (e.g. taking energy generation and distribution efficiency into account when setting the ceiling for service prices of energy companies, maintaining district heating in densely populated areas if this is cost-effective, energy efficiency criteria for heat and power cogeneration and taking these into account when issuing activity licences to CHP plants). Reconstruction of district heating systems in smaller systems requires support from the state or local authority; at the moment, the state offers investment support. On one hand, the tax policy is used to encourage investments as the profit reinvested into the company is tax-free; on the other hand, environmental charges make companies use better production equipment.

Investments in the energy sector continue to be large, and preparing for these requires expert knowledge; for that purpose, research and development includes development of competences for drawing up development plans for the energy sector.

Energy conservation activities require information on the amount of energy consumed, the characteristics of energy consumption and the causes for any changes in these. The technical opportunities for offering better information to consumers will improve if smart measures are used. Guiding information can be provided on energy bills as well. In addition, the state must contribute to the development of the market of energy services.

#### **3.2.3.5 Transport**

An overview of energy conservation measures in the transport sector is in Annex 6; this foresees diverse measures to improve the situation in the transport sector.

The main energy conservation measure in the transport sector is excise duty on motor fuels. To make public sector transportation more energy efficient, the Public Procurement Act stipulates that motor vehicle procurements must take into account the energy and environmental impact of the vehicle during the whole service life of the vehicle. The on-going and planned investments into the public transport rolling stock must improve its energy efficiency and attractiveness for consumers.

There is an indirect measure – information campaigns – that is used for increasing people’s awareness of the impact of cars and for promoting non-motorised vehicles, for example a car-fee day. Also energy labelling standards for passenger cars are being devised to improve car users’ awareness of the environmental impact of cars and to promote vehicles that have low CO<sub>2</sub> emissions. To achieve energy efficiency in the transport sector, more efficient urban planning is used and sustainable transport is developed. For example, in order to promote electric cars in Estonia, a pilot project of electric cars was launched. Furthermore, we are considering an option to increase the maximum authorised mass of heavy goods vehicles to reduce the number of their trips.

A national information system for planning trips in Estonia with any type of public transport has been created and is accessible at [www.peatus.ee](http://www.peatus.ee). To ensure better connection between Estonia and the rest of Europe, the railway network is developed and all passenger trains are replaced. There is a plan to launch national programmes supporting devisal of sustainable transport technologies and development of new technologies (e.g. engines and alternative fuels) if possible.

#### **3.2.3.6 Energy efficiency of appliances**

Measures to achieve energy efficiency of appliances outside the public sector have been summed up in Annex 7, and these include activities to improve the efficiency of common household and office appliances but do not cover industrial or agricultural equipment, etc. As indicated by the annex, the key to the improved energy efficiency of appliances is application of the requirements for eco-design and energy labelling of appliances and products affecting energy consumption (energy-related products) on the basis of the respective framework directives.

#### **3.2.3.7 Agriculture**

Energy efficiency measures in the agriculture sector are summed up in Annex 8, and these cover activities to improve energy efficiency in this sector. The measures cover activities to achieve energy efficiency in the agricultural sector by improving the efficiency of the equipment, buildings and facilities. There is a plan to develop energy-efficient processes and technologies in the agriculture, food and forestry sectors. In addition, the measures include increasing the awareness of people in these sectors and their retraining in energy efficiency and conservation.

### **3.2.3.8 Other measures**

The measures in Annex 9 fall into two major groups: horizontal measures and activities to improve the assessment of the effectiveness of energy conservation measures and the monitoring quality. Fuel and electricity excise duties affect energy customers in all sectors. In the recent years, excise duties have increased sharply. Excise duties on motor fuels increased by about 40% in the period 2007–2011, excise duties on gas and electricity were established in 2008 and, by 2011, these had increased by 134% and 40%, respectively.

To improve the quality of monitoring and assessment of effectiveness of the energy conservation policy, the data indicating the changes in energy efficiency must be made more accessible and more statistical surveys must be conducted to ensure high-quality national energy statistics. Partnership with NGOs could contribute to gathering of data requiring thorough technical knowledge.

## **3.3 Public sector**

### ***3.3.1 Public sector setting an example***

According to Directive 2006/32/EC, member states must take action so that the public sector would set an example. Examples of such activities are:

- the public sector constantly informs the public of its role and activities with respect to energy conservation and efficiency;
- the public sector takes cost-effective energy conservation and efficiency measures;
- the public sector publishes guidelines to consider energy conservation criteria in procurements and other competitive tendering procedures;
- the public sector has created opportunities for information exchange between the organisations in the public sector.

To sum up the situation in Estonia and the activities conducted so far:

- The measures implemented in Estonia, including in the public sector, are actively publicised via the media. In addition to press releases, a project or programme website is also made in the case of bigger initiatives. Good examples of coverage on public sector measures are the website of the State Real Estate Ltd (Riigi Kinnisvara AS) that provides information on its energy conservation investments (<http://www.rkas.ee/co2>) and the website of the Ministry of the Environment on sustainable public procurement (<http://www.envir.ee/KHRH>). Openness and motivation have been constant communication objectives of the government.
- Local authorities who are a party to the Covenant of Mayors have drawn up a sustainable energy plan (Tallinn, Rakvere), and many Estonian local authorities have drawn up and are implementing a local energy plan (about 40% of local authorities, mostly big ones) or have conducted smaller analyses to deal with their energy consumption problems.
- In the upcoming years, one important task is to implement the planned investment programmes to improve energy efficiency of public buildings; these investments were planned taking into account cost-effectiveness.
- The guidelines to consider energy conservation criteria in procurements and other competitive tendering procedures are accessible in the sustainable procurement webpage of the Ministry of the Environment (<http://www.envir.ee/KHRH>).
- Information exchange between public sector institutions is project-based. Some examples of the projects:



- improvement of administrative capacity of local authorities and their subunits regarding coordination of energy efficiency (2008–2010, coordinated by the Ministry of Economic Affairs and Communications);
- promotion of environmentally friendly public procurements (2009–2010, coordinated by SEI Tallinn);
- improved application of environmental management principles in the public sector (2009–2013; coordinated by the Ministry of the Environment).

Opportunities for conducting new sectoral projects are provided by the priority axis of enhancing administrative capacity under the Operational Programme for the Development of Human Resources.

Development and extension of these activities will ensure the exemplary role of the public sector.

### ***3.3.2 Public sector setting an example with respect to energy performance of buildings***

Directive 2010/31/EU on energy performance of buildings requires member states to develop and implement measures to reconstruct public buildings to become nearly zero-energy buildings. Furthermore, public administrative bodies of member states must ensure that they set an example regarding energy performance of buildings, for example by following the energy conservation recommendations described in energy performance certificates.

Estonia has drawn up initial proposals for minimum energy efficiency requirements for nearly zero-energy buildings. As there has been no public discussion on the new minimum requirements for energy performance yet, no decision has been made regarding the schedule for enforcing the minimum requirements for nearly zero-energy buildings. In setting the targets and developing the measures, it must be taken into account that the initial investment into a nearly zero-energy building does not meet the cost-effectiveness criterion yet. More detailed further plans for supporting development of nearly zero-energy buildings will be made in the summer of 2012 at the latest; then, the new minimum requirements for energy performance will be implemented as well.

In general, energy conservation measures regarding public sector buildings will be implemented after receiving an expert opinion on the state of repairs of the building, i.e. an energy audit. An energy audit report is accompanied with an energy performance certificate. Reconstruction of buildings requires bulky investments and it is done when the state and/or local authorities have adequate budgetary resources for that.

The energy conservation investments of State Real Estate Ltd. are a clear example of the exemplary role of the public sector with respect to energy performance of buildings. The plan is to reconstruct 480 buildings with an aggregate usable area of 1.27 million m<sup>2</sup> within the programme. In its directive on energy end-use efficiency and energy services of June 2011, the Commission proposed an objective that, each year, the public sector must make at least 3% of its buildings energy efficient. In comparison, Estonian local authorities have made investments in the amount of about 5.1 billion Estonian kroons, i.e. 9.5% of the value of its fixed assets a year in recent years.

### ***3.3.3 Special measures in public procurements***

According to Directive 2006/32/EC, member states must implement at least two measures to ensure energy efficiency and conservation via public procurements. These measures are listed in Annex VI to the directive and include:

- a) requirements concerning the use of financial instruments for energy savings, including energy performance contracting that stipulate the delivery of measurable and pre-determined energy savings (including whenever public administrations have outsourced responsibilities);
- b) requirements to purchase equipment and vehicles based on lists of energy-efficient product specifications of different categories of equipment and vehicles to be drawn up by the authorities or agencies referred to in Article 4(4);
- c) requirements to purchase appliances that are energy efficient in all modes, including the stand-by mode;
- d) requirements to replace or retrofit existing equipment and vehicles with the equipment listed in

points (b) and (c);

- e) requirements to use energy audits and implement the resulting cost-effective recommendations;
- f) requirements to purchase or rent energy-efficient buildings or parts thereof, or requirements to replace or retrofit purchased or rented buildings or parts thereof in order to render them more energy-efficient.

Of these, Estonia implements measures (b) and (e). Measure (b) is implemented on the basis of section 3 of the Public Procurement Act that describes general principles for conducting public procurements. According to the act, the contracting authority has an obligation to prefer environmentally friendly solutions, if possible. Section 33(2<sup>1</sup>) of the same act stipulates that if the object of the procurement contract are road vehicles, the tender dossier must contain conditions that take into account the energy and environmental impact of the whole service life of the vehicle. In its webpage on sustainable public procurements (<http://www.envir.ee/KHRH>), the Ministry of the Environment has publicised instructions for environmentally friendly public procurements for various types of products.

Measure (e) has been essentially implemented by the State Assets Act, according to which the following principles have been applied to ensure efficient management of immovables owned by the state:

- 1) According to section 90(3) of the State Assets Act, the government will issue a regulation to establish requirements for the quality, use and wear-and-tear in the field of real estate.
- 2) Management of the state's activities with respect to immovables will be centralised and one provider of real estate services to the state will be appointed (sections 92 and 93 of the State Assets Act). State Real Estate Ltd. (Riigi Kinnisvara AS) has been founded for that purpose. The process is gradual, and right now, the usable area of the immovables in the portfolio of State Real Estate Ltd. amounts to 517,314 m<sup>2</sup>, but state agencies have 1064 more general purpose buildings (including parts of buildings) with total usable area of 508,494 m<sup>2</sup>. The aim of the provider of real estate services is to ensure expert and cost-effective management of the real estate portfolio.
- 3) State Real Estate Ltd. has launched a big programme for reconstructing its buildings to become more energy efficient; several local authorities take part in it as well. The total area to be reconstructed within the programme should reach 1,270,000 m<sup>2</sup> by 2013.
- 4) Based on sections 94–97 of the State Assets Act, a state real estate registry will be set up. The real estate registry will gather data with an aim of providing a uniform overview of the immovables the state uses.

Reconstruction of the existing public buildings and construction of new ones by local authorities depends considerably on the state's support for investments. Investments are applied for in a competitive way and applications are evaluated usually taking into account the environmental impact of the projects as well. The vast majority of the projects aim at improving the energy performance of buildings and facilities.

### **3.4 Availability of information and advice**

The programme for informing residents of energy performance of buildings was approved by the Minister of Economic Affairs and Communications in his Directive No 146 of 28 April 2008. The aim of the programme is to improve people's awareness of energy conservation and promote, through KredEx, intelligent energy conservation measures that ensure good indoor climate in buildings, reduce pollution of ambient air and increase energy savings in apartment blocks. Within the programme, regular media campaigns have been conducted since 2008; overviews of the energy conservation campaigns conducted under the programme have been published on the webpage of KredEx ([www.kredex.ee/11272](http://www.kredex.ee/11272)).

On the initiative of KredEx, annual energy weeks are organised as well. Opportunities are offered to interested organisations for organising energy-week-related information events, and the organiser of the energy week gathers all information on the information events into its webpage [www.energiatark.ee](http://www.energiatark.ee). Each year, events organised during the energy week have had as many as several thousand participants, and events have been organised by dozens of companies and organisations. The energy week of 2011 will be organised by the Tartu Regional Energy Agency ([www.trea.ee](http://www.trea.ee)).

Details on information campaigns and informational materials published have been provided to final customers through companies dealing with energy and building management (e.g. within the energy conservation campaign KredEx organised in 2009, information was distributed in the energy and utility bills of 27 heating companies and 23 building management companies). Larger energy companies provide energy conservation information to final customers via their websites (e.g. [kokkuhoid.energia.ee](http://kokkuhoid.energia.ee), [www.soojus.ee/energiasaast](http://www.soojus.ee/energiasaast)) and other channels (press releases, information campaigns in the media), and lots of information can be found on the websites of companies and organisations providing sectoral products and services.

### **3.5 Obligations for energy companies to encourage energy conservation in final consumption**

Energy prices have increased more than other prices in Estonia in recent years. According to Statistics Estonia, the price for natural gas for companies (final consumption) increased by about 70%, heat, 37% and electricity, 16% in the period 2007–2009. Excise duties on motor fuels increased by about 40% in the period 2007–2011, excise duties on gas and electricity were established in 2008 and, by 2011, these had increased by 134% and 40%, respectively. These exceed the EU minimum rates stipulated in Directive 2003/96/EC on the taxation of energy products by 4.5–9 times in the case of electricity, 4.7 times in the case of natural gas and 1.2 times in the case of motor fuels. The excise duties paid by energy companies make an indirect but significant contribution towards the financing granted from the state budget to final customers for energy conservation measures. At the same time, energy companies provide data to customers and energy auditors for conducting energy audits, and some companies have started to offer energy audit services. The Electricity Market Act stipulates that economic operators have an obligation to facilitate consumer activities that have the aim of saving energy.

To improve environmental protection and make resource use more efficient, the Ministry of the Environment has voluntarily entered into contracts with seven companies and organisations; three of these contracts have an indirect energy conservation output. According to the contracts with the Estonian Association for Environmental Management, the Estonian Association of Mining Enterprises and the Estonian Forest and Wood Industries Association, the companies belonging to these associations must implement environmental management systems, the best available technology, sustainable production and consumption techniques and holistic product policies.

### **3.6 Energy services market**

One obstacle for improving energy efficiency is the fact that consumers buy energy for appliances they have purchased. Unfortunately, consumers are rather passive in procuring new appliances, and they continue to use old and inefficient equipment. In providing a complete energy service, the energy supplier, in addition to the energy, also provides the required appliance and is obliged to ensure the functioning of the appliance to an agreed standard (for example, a lighting system must provide consumers with lighting to a certain level, a heating system must be able to maintain a certain temperature in the rooms). Due to the fact that the manufacturer is responsible for purchasing equipment, it is in the best interests of the producer to invest into sustainable equipment in order to maximise profit. The energy services market is not very active in Estonia and is limited primarily to, for example, street lighting services. To encourage provision of energy services, the following measures continue to be important:

1. determining the possible areas for the provision of energy services in Estonia, developing conditions and principles for their provision;
2. determining legal bases for the provision of energy services; for example, developing sample contracts between energy suppliers and consumers;
3. test provision of energy services;
4. promotion of the concept of energy services.

As regards PPP, the City of Tallinn has the most extensive experience: they have reconstructed 20 educational institutions within PPP in the period 2005–2010 and another four are going to be renovated in 2011.

### 3.7 A strategy for increasing the number of nearly zero-energy buildings

The following steps will be taken to increase the number and area of nearly zero-energy buildings in order to reach the indicator stipulated in section 3.1.2:

1. defining the concept of nearly zero-energy buildings. The proposal on the definition of and requirements for nearly zero-energy buildings have been developed but it requires more extensive public discussion. The discussion will be conducted simultaneously with the discussion on the new level of minimum requirements for energy performance of buildings;
2. devisal and application of support schemes to the first public buildings that meet the requirements set for nearly zero-energy buildings. The support scheme will be used to finance additional investments that ensure compliance with the requirements for nearly zero-energy buildings in new public buildings to be built. The type of support will be decided upon during the devisal of the scheme;
3. information activities are used to encourage the private sector to construct nearly zero-energy buildings.

### 3.8 Alternative measures for heating and air-conditioning systems

As required by Articles 14(4) and 15(4) of Directive 2010/31/EU, Estonia has established a system of advising based on the inspection of such devices and systems to ensure energy efficient functioning of hot water boilers, climate control devices (air conditioning), heat pumps and the related utility systems. The advisory system functions as a cooperation between distributors of equipment and independent specialists (e.g. energy auditors); the result is equivalent to that of regular inspections. According to section 3<sup>3</sup> of the Building Act<sup>24</sup>, since 1 October 2010, distributors of devices have an obligation to provide advice to customers upon reselling a device or granting its use; the advice must cover choosing and installation of the device, energy efficiency requirements for utility systems and energy efficiency-related inspection arrangements regarding the existing utility system. Inspection of a hot water boiler, air-conditioner or heat pump provides an assessment of its energy efficiency and appropriateness of its capacity to the heating, ventilation or cooling needs of the building. The inspection report provides an overview of options to ensure energy efficient functioning of the utility device or recommendations to replace it, indicating what are the alternatives.

#### **Equivalence of the advisory system and the system of compulsory inspections: hot water boilers**

Article 8(b) of Directive 2002/91/EC and Article 14(4) of Directive 2010/31/EU stipulate that if a member state provides advice instead of conducting compulsory inspection of boilers, it must submit reports on the equivalency of these two measures to the European Commission.

Estonia applies the system of providing advice on hot water boilers and heating systems because we do not have a reliable database on the small boilers used in local heating of buildings. Furthermore, we did not have enough data on the companies that sell and install boilers. However, ambient air pollution permits for boilers with a capacity exceeding 300 kW are registered in the information system of environmental permits, because they have received the permit in compliance with the regulation of the Minister of the Environment on Emission Levels of Pollutants and Capacities of Plants Used Beyond which an Ambient Air Pollution Permit and a Special Pollution Permit is Required<sup>25</sup>, as required by section 68(1) of the Ambient Air Protection Act<sup>26</sup>. In general, such big boilers are used in separate boiler-houses, not in the buildings, and environmental charges applied to boilers with a capacity exceeding 300 kW contribute to their efficient operation as well.

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<sup>24</sup> <https://www.riigiteataja.ee/akt/13327745> (in Estonian).

<sup>25</sup> <https://www.riigiteataja.ee/akt/789500> (in Estonian).

<sup>26</sup> <https://www.riigiteataja.ee/akt/131122010028> (in Estonian).

A vast majority of buildings, especially apartment buildings and other big buildings, use heat from the district heating system. Local heating is used mostly in small houses, the majority of which have kitchen ranges and stoves but no water-based heating systems. The use of boilers has increased since the 1990s. In 1990, electrical heating also was popular, but in the last decade, the share of heat pumps in the local heating increased the most. Thus, the use of boiler devices in local heating is rather modest and compulsory inspection would not have any significant effect on energy performance of buildings because the devices installed are relatively new. Local boilers use primarily gas, liquid fuels or pellets that all ensure stable functioning for a relatively long time, depending on the characteristics of the fuel.

In compliance with Article 15(2) of Directive 2002/91/EC, the government decided, on 18 August 2005, to use a three-year transitional period for applying the requirements stipulated in Articles 7, 8 and 9 of the Directive; this meant that the requirements for transposing these parts of the directive were finally devised by 1 January 2009. The requirements set in Directive 2002/91/EC were transposed in the Energy Efficiency of Equipment Act that was replaced by the Building Act on 1 October 2010. The first regulation that requires sales of boilers to be registered, took effect on 1 January 2008. The first data on the sales of boilers were gathered by the Technical Surveillance Authority with respect to 2009. The data was received from 2 companies that sold 32 boilers in total. The data on 2010 was received from 4 companies that sold 71 boilers in total. Our guess is that the actual number of enterprises that have sold boilers in their operating activities in 2009 and 2010 is 20. Information from the companies is gathered via an electronic registration system. In general, boilers are installed along with the new heating system by companies that install heating systems. Reconstruction of heating systems of small houses usually involve replacement of the whole heating system.

In view of the above information, it is not likely that compulsory inspection of boilers would ensure higher energy efficiency than the advisory system.

#### **Equivalence of the advisory system and the system of compulsory inspections: air-conditioning devices**

Article 15(4) of Directive 2010/31/EU stipulates that if a member state provides advice instead of conducting compulsory inspection of climate control devices, it must submit reports on the equivalency of these two measures to the European Commission.

In view of the climatic conditions in Estonia, the use of large air-conditioning devices is not widespread. Summertime heat waves do not last long in Estonia: the period when the temperature exceeds 23°C is 4.26 days in Tartu and 2.39 days in Tallinn<sup>27</sup>. The climate control devices are used for a short time in summer, and that time often coincides with the holiday season when the use of the buildings is minimal.

Installation of big cooling systems began in the beginning of the 2000s, so they are not yet widespread and majority of them are relatively new. The energy demand of big climate control devices of buildings is modest in the energy balance of the state. The number of cooling systems with an effective rated capacity exceeding 12 kW that are installed in Estonia a year is a two-digit one. Big cooling systems are not installed in residences; instead, these are mainly in office buildings and service buildings. In general, these devices are maintained by professionals on the basis of utility maintenance contracts.

In compliance with regulation 842/2006/EC, section 111 of the Ambient Air Protection Act stipulates competence requirements for persons engaged in the installation, operation, dismantling and leakage control of equipment containing fluorinated greenhouse gases and the related waste management. These economic operators are registered in the register of economic activities (<http://mtr.mkm.ee>). About 10 of them deal with climate control devices of buildings.

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<sup>27</sup> *Eesti kliima teatmik ehitajatele*, Eesti Ehitusteave 2000.

In view of the above information, it is not likely that compulsory inspection of air conditioners and other climate control devices would ensure higher energy efficiency than the advisory system.

### **3.9 Measures to support implementation of the directive on energy performance of buildings**

Article 10(2) of Directive 2010/31/EU stipulates that member states must draw up, by 30 June 2011, a list of existing and, if appropriate, proposed measures and instruments, including those of a financial nature, other than those required by this directive, which promote the objectives of this directive. The overview of these measures is in table 6.

**Table 6.** Measures to support implementation of the directive on energy performance of buildings

Implementation period	Status	Name of measure	Type of measure	Target group	Rough budget	Short description
2009..2015	Being implemented	The programme of renovation loan for apartment buildings (under the Operational Programme of the Development of the Living Environment)	Soft loan	Apartment associations, building associations and communities of apartment owners	€49 million, plus self-financing by borrowers. The total budget of this support programme is €57 million.	Supported activities: insulation of apartment buildings, reconstruction of utility systems (e.g. heating system and ventilation system), replacement of windows, etc. The soft loans are granted through AS Swedbank and AS SEB and financed from the structural funds of the EU. In 2009 and 2010, soft loans were granted in the amount of EEK 256.5 million (€16.4 million). The implementation of these measures is managed by KredEx.
2003..2009	Ended	Support for reconstruction of apartment buildings	Investment support	Apartment associations, building associations and communities of apartment owners	The investment support granted in the period 2003–2009 amounted to EEK 130,4 million (€8.33 million).	Supported activities: insulation of apartment buildings, reconstruction of utility systems (e.g. heating system and ventilation system), replacement of windows, etc. The support accounts for up to 10% of the cost of the project. The implementation of these measures is managed by KredEx.
2003..2015	Being implemented	Support for performance of energy audits and expert assessment of buildings and drawing up of building design documentation for apartment buildings	Support	Apartment associations, building associations and communities of apartment owners	The support granted in the period 2003–2009 amounted to EEK 19,6 million (€1.25 million).	Support is granted for preparations for renovation of apartment buildings. The implementation of these measures is managed by KredEx.
2010..	Being implemented	Support scheme for reconstruction of apartment buildings	Investment support	Apartment associations, building	The support granted in 2010 amounted to EEK 13,7 million	Supported activities: insulation of apartment buildings, reconstruction of utility systems (e.g. heating system

				associations and communities of apartment owners	(€0.88 million). The total volume of the support scheme until 2012 amounts to EEK 480 million (€30.7 million).	and ventilation system), replacement of windows, etc. The amount of support varies between 15 and 35% of the project costs, depending on the estimated energy savings achieved. The implementation of these measures is managed by KredEx.
2011..	Being implemented	A programme for reconstruction of public sector buildings	Investment support	State agencies and local authorities	The total volume of the support scheme until 2012 amounts to €146.5 million.	The implementation of the measure is managed by State Real Estate Ltd. The plan is to reconstruct 480 buildings with an aggregate usable area of 1.27 million m <sup>2</sup> within the programme.



#### 4 Authorities responsible and organisations involved

Energy conservation policy forms a part of the national energy policy. According to the Government of the Republic Act, issues related to the energy sector have been placed within the competence of the Ministry of Economic Affairs and Communications. Due to the need to integrate energy conservation policy into other policies, it is important also to involve other authorities (e.g. the Ministry of the Environment and the Ministry of Finance) into fulfilling these tasks and implementing the measures (see table 7).

**Table 7.** Authorities responsible and organisations involved

Tasks	MoEAC	MoF	MoE	MoA	TSA	KredEx	Development Fund
Supervision regarding the framework for progressing towards the targets stipulated in Directive 2006/32/EC (Article 4(4))	X					X	X
Fulfilling the administrative, management and implementation responsibilities for the integration of energy efficiency improvement requirements (Article 5(2) of Directive 2006/32/EC)	X	X	X				
Application of an independent audit system for energy performance certificates and reports on the inspection of heating and air-conditioning systems	X				X		
Implementation of energy efficiency measures for buildings	X				X	X	
Implementation of energy conservation measures for the public sector	X	X	X				
Implementation of energy efficiency measures for industries	X						X
Implementation of energy efficiency measures for the energy sector	X		X				X
Implementation of energy conservation measures for the transport sector	X						
Implementation of energy efficiency measures for appliances and other energy-related products	X						
Implementation of energy conservation measures for agriculture				X			
Implementation of other energy conservation measures (incl. taxes and excise duties)	X	X					

Abbreviations used in the table: MoEAC – Ministry of Economic Affairs and Communications; MoF – Ministry of Finance; MoE – Ministry of the Environment; MoA – Ministry of Agriculture; TSA – Technical Surveillance Authority; KredEx – KredEx Credit and Export Guarantee Fund

The implementation plan drawn up pursuant to regulation No 302 of the Government of the Republic of Estonia, of 13 December 2005, 'Types of strategic development plans, the procedure for their preparation, amendment, implementation and evaluation and the reporting procedure', sets out in greater detail the actions to be carried out, implementers and outputs for the period 2011–2013. The actions arising from the plan are reflected in the annual working plan of the authorities. Supervision of the implementation is based on regular assessment of the results of the measures and sub-actions included in the plan. Data required for assessment are gathered through surveys, and data gathered through administration are used as well. Observations, research and analyses related to this field are carried out in order to review and assess the results of the plan.

The Ministry of the Economic Affairs and Communications is responsible for the direct performance of the plan. Each September, the Ministry of the Economic Affairs and Communications assesses the results of the activities on the basis of national statistics and departmental data, reports to the government on the performance of the plan, achievement of the aims set forth in the plan and results of the measures, and if necessary makes proposals for improving the energy conservation policy, in the report on the implementation of the National Development Plan of the Energy Sector until 2020.

State financing for the energy efficiency plan depends on the financial possibilities the state budget offers. Achievement of the targets set in the plan also requires involvement of private sector finances, and the conditions for that depend on the specific measure.

**Annex 1. Calculation of Estonia's energy conservation target complying with guidelines in Annex 1 to Directive 2006/32/EC**

	2001	2002	2003	2004	2005
Final energy consumption (Statistics Estonia: table KE02), TJ	102,370	104,286	109,066	113,580	114,870
Final energy consumption (EUROSTAT: table nrg_100a, indicator B_101700), TJ	111,202	109,717	115,045	117,568	120,056
Final energy consumption in the field of application of Directive 2006/32/EC <sup>28</sup> (Statistics Estonia), TJ	104,343	103,165	106,003	116,907	118,784
..incl. final consumption of fuels, TJ	66,414	64,219	67,307	75,727	75,961
..incl. final consumption of electricity, TJ	17,042	17,546	18,659	19,825	20,336
..incl. final consumption of heat, TJ	20,887	21,399	20,037	21,355	22,486
Breakdown by sectors of final consumption					
..industrial consumption, TJ	24,065	20,882	24,317	28,887	31,176
..consumption in the transport sector, TJ	26,273	26,903	25,786	28,187	28,277
..consumption in the commercial and public service sectors, TJ	12,068	13,527	14,769	16,443	15,914
..consumption in agriculture, TJ	2,520	3,293	2,694	4,544	4,255
..consumption in households, TJ	39,417	38,561	38,437	38,846	39,162

Average final energy consumption in the sectors the directive is applied to, PJ:	110
Energy conservation target in compliance with Directive 2006/32/EC (9% of average consumption in the period 2001–2005), PJ:	9,9
<b>Estonia's energy conservation target on the basis of Directive 2006/32/EC, PJ</b>	<b>9,9</b>
Intermediate target for 2010 – one-third of the final target, PJ:	3,3
Intermediate target for 2013 – two-thirds of the final target, PJ:	6,6

Average final energy consumption in the sectors the directive is applied to, GWh:	30,511
Energy conservation target in compliance with Directive 2006/32/EC (9% of average consumption in the period 2001–2005), GWh:	2,746
Estonia's energy conservation target on the basis of Directive 2006/32/EC, GWh:	2,746
Intermediate target for 2010 – one-third of the final target, GWh:	915
Intermediate target for 2013 – two-thirds of the final target, GWh:	1,830

<sup>28</sup> Final consumption without that of the facilities participating in the EU emissions trading system, calculated in compliance with the methods of Eurostat.

## Annex 2. Measure card for an energy conservation policy sub-sector: buildings (B)

	Sectoral legislative acts	Financing and other support	Tax policy	Provision of knowhow	Research and development (development of knowhow)	Awareness
C	<b>B.1</b>	<b>B.7</b>	<b>B.18</b>	<b>B.20</b>	<b>B.27</b>	<b>B.32</b>
N	Minimum requirements on energy performance and making them gradually stricter	The programme of renovation loan for apartment buildings (under the Operational Programme for the Development of the Living Environment)	Stimulating the collection of initial capital necessary for investments	Drawing up and implementation of the action plan for training construction labour	Construction of sample buildings on the territories of local authorities in compliance with the standard for low-energy buildings	The programme for informing residents of energy performance of buildings
ST	A measure under implementation	A programme under implementation	A planned measure	A planned measure	A measure under implementation	A measure under implementation
T	2008..	2009..2015	2014	2012		2008..
B		49		1	5	0.6
TG	All new buildings and buildings undergoing major reconstruction	Apartment associations, building associations and communities of apartment owners	Building owners	Construction workers and vocational teachers	Local authorities (public sector)	Building owners, apartment associations
S						
R	Presumably, the requirements must be made stricter in three instances in the period 2011–2020	The priority axis of development of the energy sector under the Operational Programme for the Development of the Living Environment	Measure 3.2 of the Energy Efficiency Plan 2007–2013	The BUILDDEST project	A project of the Estonian-Swiss cooperation programme	The priority axis of development of the energy sector under the Operational Programme for the Development of the Living Environment
C	<b>B.2</b>	<b>B.8</b>	<b>B.19</b>	<b>B.21</b>	<b>B.28</b>	<b>B.33</b>
N	The requirement to have an energy performance certificate upon sales or lease of a building or its part; requirements for publication of energy performance certificates	Support for reconstruction of apartment buildings	interests paid on loans taken for reconstruction of homes are income tax free	Provision of knowhow to designers and architects	More detailed specification of procedures and development of aids for certifying compliance with the minimum requirements	Increasing the awareness of clients commissioning construction or design work, green public procurements
ST	A measure under implementation	A completed measure	A measure under implementation	A planned measure	A planned measure	A planned measure
T	2009..	2003..2009	2002..	2012	2012	
B		8.3	1	0.05	0.25	
TG	All buildings and their parts that are leased or sold	Apartment associations, building associations and communities of apartment owners	Building owners	Designers and architects	Policy makers and people making energy calculations regarding buildings	Public sector
S						
R				Implemented along with development of new minimum requirements		
C	<b>B.3</b>	<b>B.9</b>		<b>B.22</b>	<b>B.29</b>	<b>B.34</b>
N	A requirement to have an energy performance certificate for each building of more than 1000 m <sup>2</sup> (500 m <sup>2</sup> in the future, and 250 m <sup>2</sup> since 2015; Directive 2010/31/EU)	Support scheme for reconstruction of apartment buildings		Provision of knowhow and further training to energy auditors	Development of energy audit methods	Information dissemination among public sector managers and officials engaged in building management
ST	A measure under implementation	A programme under implementation		A planned measure	A planned measure	A planned measure
T	2009..	2010..		2012		
B		30.7				
TG	Public sector and public buildings	Apartment associations, building associations and communities of apartment owners		Energy auditors	Energy auditors and policymakers	Local authority officials
S				0.05		
R		A programme financed under the Green Investment Scheme			Measure 1.1 of the Energy Efficiency Plan 2007–2013	
C	<b>B.4</b>	<b>B.10</b>		<b>B.23</b>	<b>B.30</b>	
N	Obligations for building managers stipulated in the State Assets Act	A programme for reconstruction of public sector buildings		Informing local authority officials of regulation on energy performance of buildings	Implementation of projects based on energy conservation contracts and development of the provision of energy	

				services in buildings	
ST	A measure under implementation	A programme under implementation	A planned measure	A planned measure	
T	2011..	2011..	2012	2013	
B		146.5	0.1		
TG	State authorities	Public sector	Local authority officials		
S					
R		A programme of the State Real Estate Ltd. financed under the Green Investment Scheme	Implemented along with development of new minimum requirements		

C	<b>B.5</b>	<b>B.11</b>		<b>B.24</b>	<b>B.31</b>	
N	Provision of advice to customers upon acquisition of boilers, heat pumps, air conditioners and ventilation devices (during transposition of Directive 2010/31/EU, establishment of the requirement to conduct compulsory inspections is considered as well)	A programme for regional investment support from the gambling tax		Improvement of building managers' competence	Construction of sample nearly zero-energy buildings	
ST	A measure under implementation	A programme under implementation		A planned measure	A planned measure	
T	2007..	2007..			2014	
B		1		0.05		
TG	Owners of boilers (20 kW or more), air-conditioners (rated capacity of 8 kW or more), ventilation equipment	Local authorities and NPOs (public sector)		Building management specialists		
S						
R		Small one-off financing instances are covered by the programme				
C	<b>B.6</b>	<b>B.12</b>		<b>B.25</b>		
N	Drawing up instructions and/or regulation on application of individual cost calculations	Development of local public services		Support for performance of energy audits and expert assessments of buildings and drawing up of building design documentation		
ST	A planned measure	A measure under implementation		A measure under implementation		
T	2012	2004..2015		2008..		
B		88		2		
TG	Implementers of individual cost calculation systems	Local authorities (public sector)		Apartment associations, building associations and communities of apartment owners		
S						
R		The priority axis of integral and balanced development of regions under the Operational Programme for the Development of the Living Environment		The priority axis of development of the energy sector under the Operational Programme for the Development of the Living Environment		
C		<b>B.13</b>		<b>B.26</b>		
N		Modernisation of the study environment of vocational education institutions		Building design and construction supervision support for apartment associations for making preparations for major renovation		
ST		A measure under implementation		A measure under implementation		
T		2007..2015		2011..		
B		150		1		
TG		Public sector		Apartment associations, building associations and communities of apartment owners		
S						
R		The priority axis of development of education infrastructure under the Operational Programme for the Development of the Living Environment				

C	<b>B.14</b>				
N	Modernisation of open youth centres, information and counselling centres and hobby schools				
ST	A measure under implementation				
T	2007..2015				
B	25				
TG	Local authorities (public sector)				
S					
R	The priority axis of development of education infrastructure under the Operational Programme for the Development of the Living Environment				
C	<b>B.15</b>				
N	Development of healthcare and welfare infrastructure				
ST	A measure under implementation				
T	2007..2015				
B	175				
TG	Public sector				
S					
R	Covers the following measures: optimisation of the infrastructure of central and regional hospitals, development of the infrastructure for nursing and care services and reorganisation of state welfare institutions				
C	<b>B.16</b>				
N	Devisal of the principles of the support scheme for renovation of private houses with an aim of achieving energy savings, and establishment of the scheme				
ST	A planned measure				
T	2014..				
B					
SR	Owners of small houses				
S					
R	Mentioned in the action programme of the government 2011–2015				
C	<b>B.17</b>				
N	Provision of national guarantees for construction and renovation to achieve energy savings				
ST	A planned measure				
T					
B					
TG	Building owners, except the public sector				
S					
R	Based on the respective decision of the Riigikogu made on 18 June 2009				

Abbreviations in the table:  
C: code of the measure or programme;  
N: name of the measure or programme;  
ST: status of the measure or programme;  
T: implementation time of the measure or programme;  
B: total budget for the measure or programme;  
TG: target group of the measure or programme;  
S: planned energy savings as a result of the measure or programme;  
R: remarks.

**Annex 3. Measure card for an energy conservation policy sub-sector: public sector (P)**

	<b>Sectoral legislative acts and instructions</b>	<b>Financing and other support</b>	<b>Tax policy</b>	<b>Provision of knowhow</b>	<b>Research and development (development of knowhow)</b>	<b>Awareness</b>
C	<b>P.1</b>	<b>P.3</b>		<b>P.4</b>	<b>P.6</b>	<b>P.7</b>
N	Development of legislative acts on environmentally friendly public procurements and the related instruction materials	Preliminary surveys regarding modernisation of street lighting and analysis of respective financing options		Provision of training on environmentally friendly public procurements, development and distribution of respective informational materials	Implementation of projects based on energy conservation contracts and development of the provision of energy services in the public sector	Counselling of local governments upon planning the development of the energy sector and the related sectors
ST	A measure under implementation	A planned measure		A measure under implementation	A planned measure	A planned measure
T	2007..	2011..		2007..	2012..	2012..
B						
TG	Public sector	Public sector				Public sector (local authorities)
S						
R				Approved by the government in compliance with the 'Estonian Priorities for Environmental and Sustainable Public Procurements' in 2007		Measure 1.1 of the Energy Efficiency Plan 2007–2013
C	<b>P.2</b>			<b>P.5</b>		
N	Appointment of central contracting authorities for public procurements (appointment of centres of excellence)			Support for regional development plans for the energy sector		
ST	A planned measure			A planned measure		
T	2011			2011		
B						
TG	Public sector (the state)			Public sector (local authorities)		
S						
R	Mentioned in the action programme of the government 2011–2015			Measure 1.1 of the Energy Efficiency Plan 2007–2013		
C						
N						
ST						
T						
B						
TG						
S						
R						
C						
N						
ST						
T						
B						
TG						
S						
R						

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T: implementation time of the measure or programme;  
B: total budget for the measure or programme;  
TG: target group of the measure or programme;  
S: planned energy savings as a result of the measure or programme;  
R: remarks.



**Annex 4. Measure card for an energy conservation policy sub-sector: industry (In)**

	<b>Sectoral legislative acts</b>	<b>Financing and other support</b>	<b>Tax policy</b>	<b>Provision of knowhow</b>	<b>Research and development (development of knowhow)</b>	<b>Awareness</b>
<b>C</b>	<b>In.1</b>	<b>In.2</b>	<b>In.4</b>	<b>In.6</b>	<b>In.10</b>	<b>In.12</b>
N	Creation of opportunities for using residual heat of manufacturing companies in district heating	The programme of technology investment support for manufacturers	Tax exemption for reinvested profit of companies	Development and provision of training events on energy conservation to increase energy management competences of enterprises	Analysis and development of energy efficient technical solutions having a future in Estonia enterprises	Development and dissemination of informational materials on energy conservation for company employees
ST	A planned measure	A programme under implementation	A measure under implementation		A planned measure	A planned measure
T		2008..2013	2000..			
B		50				
TG		Manufacturing companies	Companies	Specialists responsible for energy-related arrangements of manufacturing companies	Companies, organisation involved in scientific research	Company managers, employees
S						
R		The priority axis of innovation and growth capacity of enterprises under the Operational Programme for the Development of the Economic Environment		incl. within the programme that is meant for improving the knowledge and skills of enterprises and that is co-financed from the EU structural funds	A new activity planned within the Energy Technology Programme	
<b>C</b>		<b>In.3</b>	<b>In.5</b>	<b>In.7</b>	<b>In.11</b>	
N		Encouragement of investments into energy conservation of industries within the financial instrument for energy conservation in industries	Pollution charges under the Environmental Charges Act	Support for energy audits of industries within the financial instrument for energy conservation in industries	Adjustment of methods and development of databases for benchmarking energy efficiency of manufacturing companies	
ST		A planned measure	A measure under implementation	A planned measure	A planned measure	
T		2014..	1994..	2014..		
B						
TG		Manufacturing companies	Manufacturing companies	Manufacturing companies	Companies and their associations, organisations involved in scientific research	
S						
R		Also planned in 'Estonia 2020'.		Implementation in compliance with the directive on energy end-use efficiency and energy services, and also foreseen in 'Estonia 2020'		
<b>C</b>				<b>In.8</b>		
N				Increasing the number of energy auditors in industries and development of opportunities for further training (incl. for energy consultants of industries)		
ST				A planned measure		
T						
B						
TG				Energy auditors and energy consultants		
S						
R				Also planned in the National Reform Programme 'Estonia 2020'.		

C			<b>In.9</b>			
N	Abbreviations in the table: C: code of the measure or programme; N: name of the measure or programme; ST: status of the measure or programme; T: implementation time of the measure or programme; B: total budget for the measure or programme; TG: target group of the measure or programme; S: planned energy savings as a result of the measure or programme; R: remarks.		Self-financing support for participation in programmes to projects that contribute to improving energy efficiency of industries			
ST			A planned measure			
T						
B						
TG				Companies offering consultation services and scientific research institutions		
S						
R			Developed with an aim of offering support for participation in EU programmes			

## Annex 5. Measure card for an energy conservation policy sub-sector: energy sector (En)

	Sectoral legislative acts and instructions	Financing and other support	Tax policy	Provision of knowhow	Research and development (development of knowhow)	Awareness
C	<b>En.1</b>	<b>En.5</b>	<b>En.9</b>		<b>En.11</b>	<b>En.14</b>
N	Encouragement for efficient CHP plants on the electricity market	Support for construction of CHP plants using renewable sources of energy and for renovation of district heating networks	Pollution charges under the Environmental Charges Act		Renewal of the methods of the development plans for the energy sector (taking new technologies into account and assessing the social impact of the use of local fuels) and the respective preparatory surveys	Development of new methods for dissemination of information in the field of energy conservation
ST	A measure under implementation	A measure under implementation	A measure under implementation		A planned measure	A planned measure
T	2007..	2009..	1994..			2012..
B						
TG	Energy producers	Energy producers and owners of district heating networks	Energy producers		Energy consultants	
S						
R		The priority axis of development of the energy sector under the Operational Programme for the Development of the Living Environment, green investment schemes				Measure 1.3 of the Energy Efficiency Plan 2007–2013, the new draft directive on energy services
C	<b>En.2</b>	<b>En.6</b>	<b>En.10</b>		<b>En.12</b>	
N	Application of district heating regions in densely populated areas, in comprehensive plans of local authorities	State guarantees for reconstruction of small boiler-houses	Tax exemption for reinvested profit of companies		Increasing energy consumption management capacities in Estonia through the development of an intelligent electricity network	
ST	A measure under implementation	A planned measure	A measure under implementation		A planned measure	
T	2003..		2000..			
B						
TG	Public sector (local authorities)	Energy producers and owners of district heating networks	Energy companies		Power network operators	
S						
R		Based on the respective decision of the Riigikogu made on 18 June 2009				
C	<b>En.3</b>	<b>En.7</b>			<b>En.13</b>	
N	Taking the efficiency of energy generation and distribution into account in approving price ceilings for services provided by energy companies	Supporting small-scale projects of local authorities directed at energy conservation			Development of the provision of energy services	
ST	A measure under implementation	A completed measure			A planned measure	
T	2007..	1994..2009				
B						
TG	District heating companies and electricity network operators	Local authorities			Energy companies	
S						
R					Measure 2.3 of the Energy Efficiency Plan 2007–2013	

C	En.4	En.8			
N	Imposing energy conservation obligation on energy companies	A national plan for making investments on the basis of the free emission quota in the electricity generation period 2013–2019			
ST	A planned measure	A planned measure			
T	2012..	2012..			
B					
TG	Energy companies	Energy companies			
S					
R	Measure 3.1 of the Energy Efficiency Plan 2007–2013, the new draft directive on energy services	A plan for supporting installations that receive free quota under the EU emissions trading system in the period 2013–2019			

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T: implementation time of the measure or programme;  
B: total budget for the measure or programme;  
TG: target group of the measure or programme;  
S: planned energy savings as a result of the measure or programme;  
R: remarks.

**Annex 6. Measure card for an energy conservation policy sub-sector: transport sector (Tr)**

	<b>Sectoral legislative acts and instructions</b>	<b>Financing and other support</b>	<b>Tax policy</b>
C	<b>Tr.1</b>	<b>Tr.4</b>	<b>Tr.6</b>
N	Energy conservation criteria in public procurements (ol-ol measure; procurements for motor vehicles take into account the whole service life of the vehicle: its energy efficiency, CO <sub>2</sub> and other emissions)	A green investment scheme for the development of public transport	To offer EU support for devisal and introduction of technical solutions that contribute to the efficiency of use of infrastructures and to reduction of CO <sub>2</sub> emissions (new pricing and taxing systems for the road network, intelligent transport systems and programmes to increase the capacity)
ST	A measure under implementation	A measure under implementation	A planned measure
T	2010..	2009..	
B			
TG	Public sector	Public transport	
S			
R		A programme financed under the Green Investment Scheme	
C	<b>Tr.2</b>	<b>Tr.5</b>	<b>Tr.7</b>
N	Introduction of bigger trucks (60 m <sup>3</sup> instead of 40 m <sup>3</sup> )	A pilot project for electric cars (construction of the charging infrastructure for electric cars, support for purchasing an electric car, electric cars to the employees of the Ministry of Social Affairs)	Free parking for electric cars
ST	A planned measure	A measure under implementation	A measure under implementation
T		2011/2012	
B			
TG	Carriage by road		
S			
R		A programme financed under the Green Investment Scheme	
C	<b>Tr.3</b>		
N	Development of standard energy performance certificates for passenger vehicles		
ST	A planned measure		
T			
B			
TG	Passenger vehicles in private and public sectors		
S			
R			
C			
N			
ST			
T			
B			
TG			
S			
R			
C			
N			
ST			
T			
B			
TG			
S			
R			

Provision of knowhow	Research and development (development of knowhow)	Awareness	Other
<b>Tr.8</b>	<b>Tr.10</b>	<b>Tr.12</b>	<b>Tr.13</b>
A new study programme in the Tallinn University of Technology: integrated transport management	To launch national programmes supporting devisal of sustainable transport technologies and development of new environmentally friendly technologies (e.g. engines and alternative fuels) if possible.	Information campaigns to increase people's awareness of the impact of cars on the environment and to promote non-motorised vehicles and public transport (a car-fee day)	More efficient spatial planning: promotion and development of NMV traffic (development/construction of bicycle roads in bigger cities); development of sustainable transport (incl. priority development of public transport)
A measure under implementation	A planned measure	A measure under implementation	A planned measure
		Public and private sectors	
<b>Tr.9</b>	<b>Tr.11</b>		<b>Tr.14</b>
Eco-driving courses in driving schools	Introduction of transport based on electricity, hydrogen and hybrid technology and increasing their share		To create a national public transport planning system that would take into account local needs and eliminate public transport overlaps
A measure under implementation	A planned measure		A planned measure
			<b>Tr.15</b>
			Improvement of the railway network, development of a rail connection to Europe (Rail Baltica), in compliance with the EU standards and allowing to travel from Estonia to Western Europe by an express train
			A planned measure
			<b>Tr.16</b>
			Renewal of public transport rolling stock, transition to electricity-powered transport (the new residential districts of Tallinn must have an environmentally friendly connection with the city centre, by electric transport)
			A planned measure
			<b>Tr.17</b>
			To start using intelligent mobility systems such as the European intelligent transport systems (ITS) and new-generation systems for arranging multimodal transport and information exchange
			A planned measure

**Annex 7. Measure card for an energy conservation policy sub-sector: energy efficiency of appliances (App)**

	Sectoral legislative acts and instructions	Financing and other support	Tax policy	Provision of knowhow	Research and development	Awareness
C	<b>App.1</b>				<b>App.3</b>	<b>App.4</b>
N	Ecodesign requirements for energy-related products				Analyses to popularise energy efficient consumption solutions and equipment	Development and dissemination of informational materials on energy conservation for people using energy-related products
ST	A measure under implementation				A planned measure	A planned measure
T	2006..					
B						
TG	Users of appliances and other equipment				Energy companies that inform customers, and other campaign organisers	Users of appliances and other equipment
S						
R	Ecodesign requirements for energy-related products are established by the European Commission in compliance with ecodesign Directive 2009/125/EC				Measure 1.4 of the Energy Efficiency Plan 2007–2013	Measure 1.4 of the Energy Efficiency Plan 2007–2013
C	<b>App.2</b>					
N	Requirements for energy performance certificates for energy-related products					
ST	A measure under implementation					
T	1992..					
B						
TG	Users of appliances and other equipment					
S						
R	Ecodesign requirements for energy-related products are established by the European Commission in compliance with ecodesign Directive 2010/30/EU					
C						
N						
ST						
T						
B						
TG						
S						
R						
				Abbreviations in the table: C: code of the measure or programme; N: name of the measure or programme; ST: status of the measure or programme; T: implementation time of the measure or programme; B: total budget for the measure or programme; TG: target group of the measure or programme; S: planned energy savings as a result of the measure or programme; R: remarks.		
S						
R						

**Annex 8. Measure card for an energy conservation policy sub-sector: agriculture (A)**

	Sectoral legislative acts and instructions	Financing and other support	Tax policy	Provision of knowhow	Research and development (development of knowhow)	Awareness
C		<b>Agri.1</b>			<b>Agri.3</b>	<b>Agri.4</b>
N		Support for investments into the development of micro-farms (for construction/renovation of buildings and facilities and acquisition of equipment)			Cooperation with scientific institutions with an aim of developing new products, energy efficient processes and technologies in the agriculture, food and forestry sectors	Training on issues related to agricultural and forestry competitiveness, innovation, knowledge-based economy, land management and agricultural environment. Further training and retraining for persons engaged in the agricultural, food and forestry sectors. Diffusion of scientific information, scientific achievements and innovative practices among persons engaged in the agricultural, food and forestry sectors
ST		A measure under implementation			A measure under implementation	A measure under implementation
T		2008-2015			2008-2015	2008-2015
B						
TG		Farmers			Companies in the agriculture and forestry sectors	Farmers, private forest managers, economic operators and their employees, trainers
S						
R		Subsection 5.3.1 of the Rural Development Plan 2007–2013: measure 1.4 (modernisation of farms) of axis 1 (improving the competitiveness of the agricultural and forestry sectors)			Subsection 5.3.1 of the Estonian Rural Development Plan 2007–2013: sub-measure 1.7.1 of axis 1 (improving the competitiveness of the agricultural and forestry sectors)	Subsection 5.3.1 of the Estonian Rural Development Plan 2007–2013: measure 1.1 (Training and information activities) of axis 1 (improving the competitiveness of the agricultural and forestry sectors)
C		<b>Agri.2</b>				
N		Investment support for adding value to agricultural and non-wood forestry products				
ST		A measure under implementation				
T		2008-2015				
B						
TG		Farms				
S						
R		Subsection 5.3.1 of the Estonian Rural Development Plan 2007–2013: measure 1.6 of axis 1 (improving the competitiveness of the agricultural and forestry sectors)				
No						
C						
N						
ST						
T						
B						
TG						
S						
R						



## Annex 9. Measure card for an energy conservation policy sub-sector: other measures (Pol)

	Sectoral legislative acts and instructions	Financing and other support	Tax policy	Provision of knowhow	Research and development	Awareness
C	<b>Pol.1</b>		<b>Pol.3</b>		<b>Pol.4</b>	
N	Analysis of the effect of the legislative acts that are a legal basis for gathering data required for energy statistics and energy consumption analysis, and improvement of the legislative acts		Fuel and electricity excise duties, reduction of exemptions		Carrying out surveys on energy consumption of households	
ST	A measure under implementation		A measure under implementation		A measure under implementation	
T			1995..			
B					0.25	
TG	People who submit and process the data		Consumers of fuels and electricity, energy producers		Statistics Estonia, users of energy statistics	
S						
R					Each 3 years	
C	<b>Pol.2</b>				<b>Pol.5</b>	
N	Full opening of the electricity market on 1 January 2013				Analysing the effectiveness of our energy conservation policy, development of data required for that, devisal and application of methodology	
ST	A measure under implementation				A measure under implementation	
T	2003..					
B					0.25	
TG	Electricity consumers				Ministry of Economic Affairs and Communications	
S						
R						
C					<b>Pol.6</b>	
N					Cooperation with NGOs for drawing up new elements of energy statistics	
ST					A planned measure	
T						
B						
TG					Statistics Estonia, Ministry of Economic Affairs and Communications	
S						
R					Analysis and cooperation with respect to energy statistics or analysis of effectiveness of energy conservation policy if appropriate	
C					<b>Pol.7</b>	
N					Institutional reinforcement of authorities implementing the energy conservation policy	
ST					A measure under implementation	
T						
B						
TG					Institutions participating in implementation of the energy policy	
S						
R						

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