Information report

On the progress towards the indicative national energy efficiency targets in 2014 – 2016 according to Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC

17 March 2014

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List of abbreviations and definitions of terms

1st NEEAP	First National Energy Efficiency Action Plan of Latvia 2008 – 2010
2nd NEEAP	Second National Energy Efficiency Action Plan of Latvia 2011 – 2013
RES	Renewable energy sources
bar	Bar – unit of pressure
CSB	Central Statistical Bureau
EC	European Commission
MoE	Ministry of the Economy
EEOS	Energy efficiency obligation scheme
ERDF	European Regional Development Fund
EU	European Union
ESCO	Energy services company
ETS	Emissions trading system
EUR	Euro (single currency of the European Union)
GWh	Gigawatt hour (unit of energy)
GDP	Gross domestic product
CF	Cohesion Fund
CCFI	Climate Change Financial Instrument
MARKAL	Model used to carry out economic analysis of different energy-related systems
Mtoe	Million tonnes of oil equivalent
MWh	Megawatt hour (unit of energy)
NCV	Net calorific value
PJ	Petajoule (unit of energy)
GHG	Greenhouse gas

▪ 1. INTRODUCTION

So far, Latvia has submitted two National Energy Efficiency Action Plans to the European Commission according to the requirements of Directive 2006/32/EC of the European Parliament and of the Council on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC (hereinafter – Directive 2006/32/EC). The Second National Energy Efficiency Action Plan of Latvia 2011 – 2013 was approved by Cabinet Order No 460 of 16 September 2011. This Plan also incorporates the assessment of the progress of the First National Energy Efficiency Action Plan of Latvia 2008 – 2010 approved by Cabinet Order No 266 of 20 May 2008.

The information report **"On the progress towards the indicative national energy efficiency targets in 2014 – 2016 according to Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC"** (hereinafter – the Information Report) has been drawn up pursuant to the requirements of Article 24(2) of Directive 2012/27/EU of the European Parliament and of the Council on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (hereinafter – Directive 2012/27/EU). The Information Report is also based on Commission Implementing Decision 2013/242/EU[1] of 22 May 2013 establishing a template for National Energy Efficiency Action Plans under Directive 2012/27/EU (hereinafter – the EC Guidance).

This document is prepared as an information report considering that neither Directive 2012/27/EU nor the EC Guidance requires the Member States to analyse the evaluation of the 2nd NEEAP, and a new law, which is being drafted to repeal the existing Energy End-use Efficiency Law, will provide that the National Energy Efficiency Action Plan will have to be prepared and submitted to the European Commission by 30 April 2017 at the latest.

The economic crisis brought about significant changes in the overall energy sector and, therefore, the information report "Latvia's Long-term Energy Strategy 2030 – Competitive Energy for Society" (hereinafter – Strategy 2030) was drawn up to update the existing policies and targets and plan long-term development of the energy sector, including the achievement of the national energy efficiency targets set by Latvia. This report was considered by the Cabinet on 28 May 2013. This document sets long-term targets for security of energy supply, competitiveness, energy efficiency and the use of renewable energy. To attain the long-term targets of Latvia's energy policy defined in Strategy 2030, the Ministry of the Economy will draw up and facilitate the adoption of the new energy policy guidelines for the period 2014 – 2020.

Improving energy efficiency will be further set as a national priority, which allows for the cost-effective reduction of risks associated with security of energy supply, sustainability and competitiveness, meanwhile creating new jobs and promoting growth.

[1] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:141:0048:0053:LV:PDF

- **2. OVERVIEW OF NATIONAL ENERGY EFFICIENCY TARGETS AND SAVINGS**

- **2.1. National 2020 energy efficiency targets**

- **2.1.1. Indicative national energy efficiency target for 2020**

Based on the requirements of Article 3 of Directive 2012/27/EU, **the indicative national energy efficiency target set for Latvia based on primary energy savings in 2020 is 0.670 Mtoe (28 PJ), which is equivalent to final energy savings of 0.457 Mtoe (19 PJ),** providing for energy savings in multi-apartment residential buildings, municipal and central government buildings, industry, services and transport, as well as district heating systems. Overall, the implementation of energy efficiency measures will promote shifting to a more energy efficient economy and enhance the competitiveness of industry and other sectors.

- **2.1.2. Impact of the target on overall primary and final energy consumption in 2020**

A low level of energy efficiency causes risks associated with energy security, sustainability and competitiveness, while raising this level is the most rapid and cost-effective way to reduce risks, meanwhile creating new jobs and promoting growth. The heat supply of buildings and the transport sector have the highest energy-savings potential through national support mechanisms.

The MARKAL-LV model (hereinafter – MARKAL-LV) designed by the Institute of Physical Energetics on the basis of the mathematical and programming software of the MARKAL[2] modelling platform has been employed in order to analyse Latvia's long-term energy consumption and supply scenario until 2020 and assess the impact of the energy efficiency policy on primary energy consumption in 2020. MARKAL-LV describes the energy system of Latvia, starting from the demand for energy services, followed by final consumption and transformation stages, ending with primary energy supply (production of local resources, import and export). MARKAL-LV requires as input projected resource costs, descriptions of technologies and energy resources, as well as energy service demands, such as room space to be heated or tonne kilometres, which demonstrate the required energy amount. Input data are supplied by the Institute of Physical Energetics on the basis of the CSB information and previous studies. MARKAL-LV, as a tool for energy and environmental policy evaluation, enables comprehensive analyses, which, apart from the existing energy structure of Latvia, present potential alternative energy supply chains, technologies and possibilities of reducing emissions.

[2] - http://www.iea-etsap.org

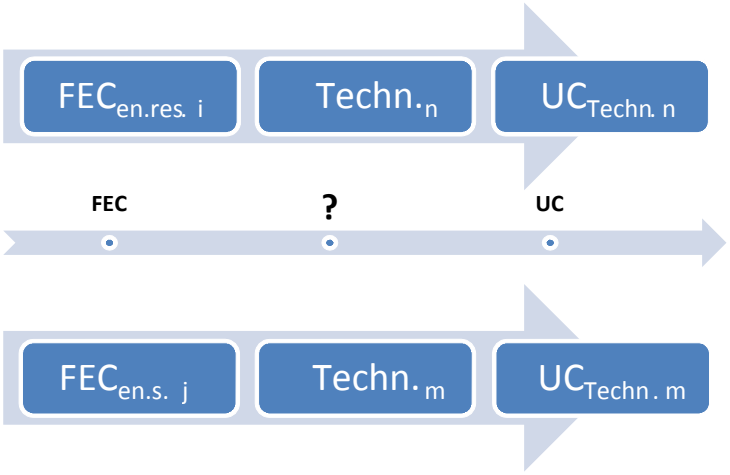


Figure 1. Link between useful energy and final energy under the model

According to the model, the demand for services or useful energy (UC) (see Figure 1) forecasted for the sub-sectors is ensured by technologies of the relevant sub-sector (Techn), using any energy sources, i.e. final energy consumption (FEC), where the consumed quantity is characterised by the specifications of the device (energy conversion efficiency (η), such as boiler efficiency). The total demand for useful energy of a sub-sector is derived by adding together the useful demand by certain technologies: $UC_{sub-sector}=\sum UC_{Techn}$. Therefore, the energy sources consumed by technologies constitute final energy consumption (FEC), which is the result achieved by the model.

Energy demand is linked with economic development; accordingly, in order to project the consumption of useful energy, long-term macroeconomic forecasts are taken into consideration, and a series of economic, technical and social factors, which affect the demand for each energy service or each type of useful energy, is identified: population; sector value added (VA); private consumption; tonne kilometres (t-km) in freight transport; passenger kilometres (P-km) in passenger transport; total space to be heated in the services sector; number of households; total residential space.

Trends in useful energy consumption by sub-sectors are determined on the basis of historical linkages between changes in these parameters and energy consumption, relying on GDP forecasts by industries and defining growth scenarios for the values of economic, technical and social factors. Generally, useful energy consumption of the relevant sector is linked with value added by elasticity, which demonstrates the percentage change in useful energy consumption with respect to one percentage change in value added. Future changes in useful energy consumption can be forecasted by calculating the elasticity of historical values and making assumptions as to future values.

In forecasting useful energy consumption, no specific macroeconomic assumptions have been made regarding the impact of price growth on the attainment of the maximum threshold of consumption. The elements of long-term macroeconomic forecasts (private consumption, public consumption, investments and net exports) are primarily calculated on the basis of the impact of demand side factors (technological progress and productivity gains as the key drivers of GDP) and are not linked with any price changes. Price changes are a neutral factor for the purposes of long-term forecasts because relative-price changes are balanced in the long-term.

Energy demand is directly linked with economic development and therefore the future demand for energy services (useful energy) is computed on the basis of projected

macroeconomic indicators as inputs, such as population, GDP, value added by industries and sub-industries, as well as dynamics of private consumption (see Table 1).

Table 1.

Forecasts of population, private consumption and macroeconomic indicators

(Forecasted by the Ministry of the Economy)

	2010	**2015**	**2020**	**2025**	**2030**
Mid-year population, 1 000	2 161	1 993	1 950	1 940	1 945
Annual change	-1.2 %	-1.6 %	-0.4 %	-0.1 %	0.1 %
Private consumption at 2000 prices, MEUR	6 464	8 134	10 039	11 947	14 079
Annual change	0.3 %	4.7 %	4.3 %	3.5 %	3.3 %
GDP at 2000 prices, MEUR					
GDP	9 552	12 244	15 181	18 214	21 350
Agriculture	384	442	534	607	681
Services (excluding transport, storage and communication)	5 237	6 335	7 704	9 333	11 009
Transport, storage and communication	1 235	1 683	2 023	2 361	2 657
Manufacturing industry	1 128	1 660	2 170	2 630	3 154
Chemical industry	56	85	112	134	161
Food industry	219	241	288	321	359
Metals industry	38	52	73	96	121
Non-metallic minerals industry	65	110	145	175	210
Paper production and printing	59	72	92	104	120
Wood processing industry	281	429	563	678	815
Other industries	409	668	898	1 120	1 367
Extractive industry	54	62	71	82	93
Construction	537	853	1 210	1 450	1 718
Transformation sector	270	305	352	408	465

Figure 2 shows the long-term GDP projection prepared by the Ministry of the Economy for the period until 2030 for certain sectors corresponding to end-use sectors in the energy mix, i.e. industry, services, agriculture and, to some extent, transport. The structure of manufacturing sectors is presented in Figure 3 below.

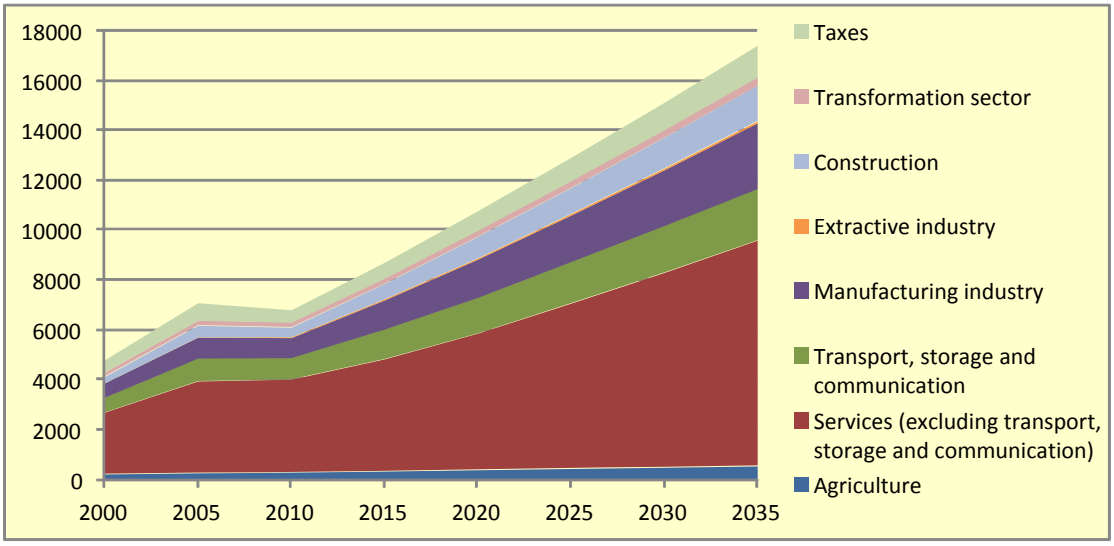


Figure 2. GDP projections at 2000 prices, MLVL (2000) (forecasted by the Ministry of the Economy)

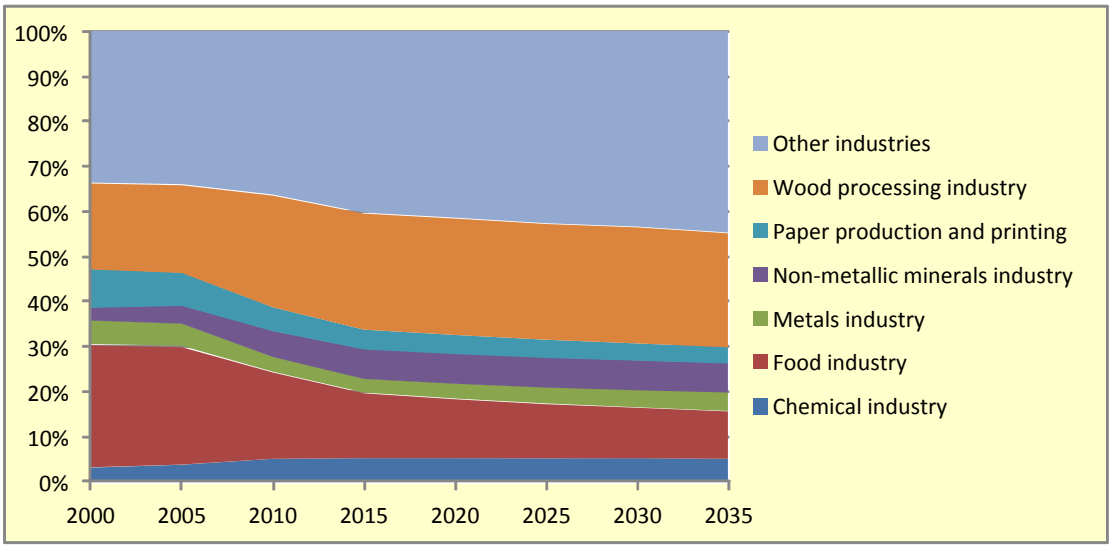
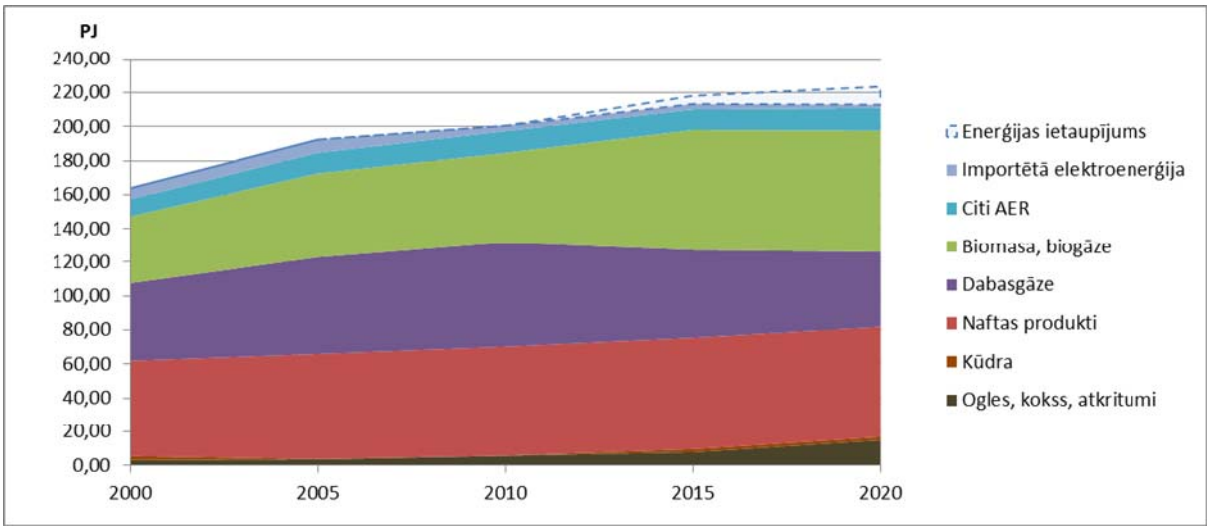


Figure 3. GDP projections for the manufacturing industry (forecasted by the Ministry of the Economy)

To assess energy savings, two alternative energy development scenarios for Latvia were modelled for the period from 2012 to 2030, determining characteristic parameters (structure of primary energy, final energy consumption, electricity production pattern, use of renewable energy sources (hereinafter – RES)). The first (base) scenario considers the current energy policy adopted by Latvia and related implementation measures, while the second scenario also relies on the targets of the energy policy and measures planned to attain these targets (the 2020 energy efficiency policy, renewable

energy targets for 2020, as well as measures to develop the energy sector set out in Latvia's National Development Plan 2014-2020 (hereinafter – the NDP2020).

According to the modelling results, the implementation of additional policies aimed at energy efficiency improvement would allow for primary energy savings of 0.670 Mtoe (28 PJ), or final energy savings of 0.457 Mtoe (19 PJ), in 2020. Primary energy consumption up to 2020, considering energy savings, is presented in Figure 4 below.



Key (top to bottom): energy savings; imported electricity; other RES; biomass, biogas; natural gas; oil products; peat; coal, coke, waste.

Figure 4. Primary energy consumption up to 2020, considering energy savings, PJ

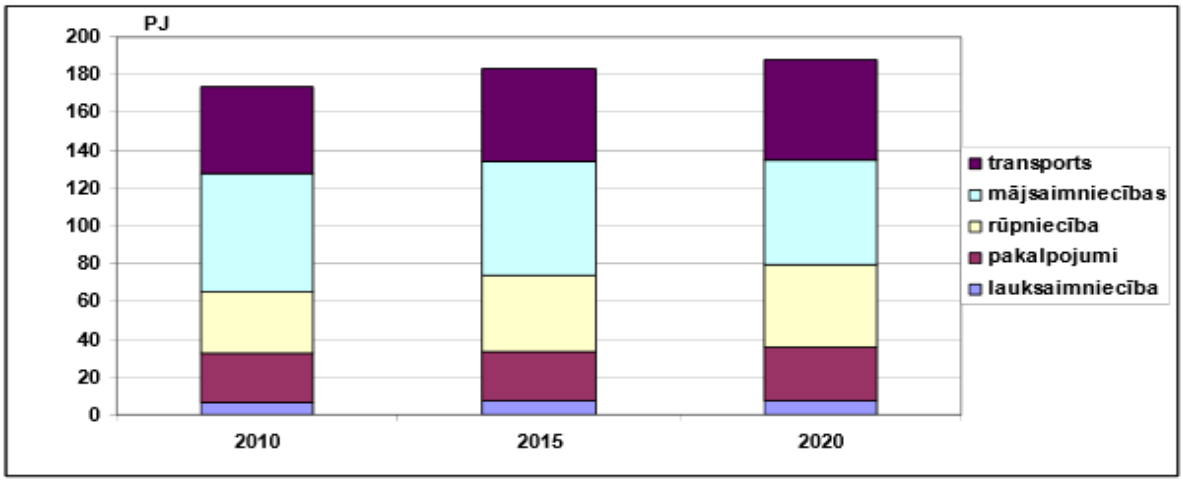
As a result of implementing energy efficiency measures and achieving the required savings, by 2020 final and primary energy consumption in Latvia will reach the values as aggregated in Table 2 below.

Table 2.

Primary and final energy consumption according to the scenario which considers additional energy efficiency measures

	2010	**2015**	**2020**
Primary energy consumption, PJ	200.5	223	225
Final energy consumption, PJ	178.5	185	187

Final energy consumption according to the scenario modelled for Latvia is presented in Figure 5. It is expected that energy efficiency measures implemented in multi-apartment residential buildings will lead to a reduction in final energy consumption by households, while the transport sector will face even a slight increase in consumption.



ATT. 2 ENERĢIJAS GALA PATĒRIŅŠ LATVIJĀ MODELĒTĀ SCENĀRIJĀ, PJ

Key (top to bottom): transport; households; industry; services; agriculture.

Figure 5. Final energy consumption according to the scenario modelled for Latvia, PJ

Table 3.

Forecasts for 2020

Indices	***PJ***
Total primary energy consumption in 2020	223.9
Total final energy consumption	187.6
Final energy consumption – Industry and construction	44.1
Final energy consumption – Transport	47.0
Final energy consumption – Households	61.3
Final energy consumption – Services	27.9
Final energy consumption – Agriculture, forestry, hunting and fishing	7.3

- **2.2. Additional energy efficiency targets**

The following energy efficiency targets also address the overall national economy:

1) the national indicative energy savings target for 2016, according to the requirements of Article 4(1) of Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC (hereinafter - Directive 2006/32/EC) – 3 483 GWh;

2) the overall indicative national energy efficiency target[3] - primary energy savings in 2020 – 0.670 Mtoe (28 PJ);

3) the annual 1.5 % cumulative end-use energy savings target[4] - 1.5 % of the energy sales to final customers – by 2020 – 0.213 Mtoe (8.9 PJ) in total;

4) 3 % of the total floor area of central government buildings to be renovated each year (the maximum estimate is 678 460 m^2 in total), which, together with the renovation of municipal buildings, makes up energy savings of 0.016 Mtoe (0.67 PJ, 186 GWh) for the whole period from 2014 to 2020;

5) the average heat consumption to be reduced by 50 % against the current rate by 2030, which, if climate-adjusted, constitutes nearly 200 kWh/m^2 per year (according to Strategy 2030[5]).

Latvia has not yet set the target for nearly zero-energy buildings. The definition of a nearly zero-energy building is provided in Section 1, Clause 6 of the Law on the Energy Performance of Buildings and Paragraph 17 of Cabinet Regulation No 383 of 9 July 2013 "Regulation on the Energy Certification of Buildings". Pursuant to Strategy 2030, one of the prerequisites for energy efficiency promotion is to establish, at short notice, much more cost-effective mandatory classes of construction standards for thermal insulation of new and renovated buildings, as well as respective voluntary classes, including zero-energy buildings.

In view of the fact that Latvia has no previous experience of constructing nearly zero-energy buildings, the relevant targets are still being investigated. In 2011 an open tender "Low-energy Buildings" was announced by the CCFI based on Cabinet Regulation No 1185 of 28 December 2010 "Regulation of the Open Tender "Low-energy Buildings" for the Projects Financed by the CCFI". The objective of the tender was the reduction of carbon dioxide emissions by constructing low-energy buildings, as well as the reconstruction or simplified renovation of existing buildings. The tender resulted in 14 projects implemented on the construction of low-energy buildings or the renovation of existing buildings, and most of these projects were carried out in 2013. The results of the tender after the newly constructed and renovated buildings have been in operation for one year, i.e. at the end of 2014, will be analysed, thereby allowing for a more effective formulation of future plans regarding the construction of nearly zero-energy buildings.

- **2.3. Primary energy savings**

To implement energy efficiency improvement measures concerning heat generation, as well as to facilitate the production of energy from RES, programmes on the construction and refurbishment of district heating systems and combined heat and power plants are being implemented within the framework of the 2007 – 2013 programming period of EU funds.

[3] Notified to the EC on 2 May 2013 in the Progress Report on the Implementation of the National Reform Programme of Latvia within the "Europe 2020" Strategy.

[4] Savings calculated as the diference between the base scenario and the scenario supplemented with additional measures; these savings mean a limitation of growth by means of these measures rather than the absolute reduction in national energy consumption. Methodological requirements as to the target notification are set out in Annex V to Directive 2012/27/EU.

[5] http://em.gov.lv/em/2nd/?cat=30166

By 14 April 2014, 115 projects on CF funding amounting to EUR 75.68 million had been approved under Sub-activity 3.5.2.1.1 "Measures to Enhance Efficiency of District Heating Systems" of the Supplement to the Operational Programme "Infrastructure and Services" (hereinafter - Sub-activity 3.5.2.1.1). Of these projects, 36 projects on CF funding amounting to EUR 28.83 million had been completed. The projects will result in the installation of heat capacity of 323 MW and the reconstruction of 168 km of heat pipelines. The total CF allocations available for Sub-activity 3.5.2.1.1 of the Supplement to the Operational Programme "Infrastructure and Services" (hereinafter – the SOP) are EUR 84 448 883.

Under Activity 3.5.2.2 "Development of Combined Heat and Power Plants Utilising Renewable Energy Sources", 10 contracts have been signed on CF funding of EUR 29.58 million, of which 7 projects on CF funding amounting to EUR 16.33 million have been completed. Electrical capacity of 36 MWel and heat capacity of 105 MW are to be installed under these projects.

A report on the progress of the projects is available on: http://em.gov.lv/em/2nd/?cat=30252. The aggregate primary energy savings to be reached in 2020 are 7 779 GWh (28.0 PJ).

Based on Cabinet Regulation No 923 of 30 September 2010 "Procedure for Measuring the National End-use Energy Savings and Ensuring the Operation of the Energy Efficiency Monitoring System" issued according to Section 4, Paragraph three and Section 5, Paragraph one of the Energy End-use Efficiency Law[6], only energy end-use monitoring is provided by the existing system. A new Energy Efficiency Law, which is currently being drafted, will lay down the procedure for measuring energy savings for the attainment of national indicative and binding targets, as well as the general procedure for energy efficiency monitoring, which will also incorporate the monitoring of primary energy savings.

- **2.4. Achieved final energy savings and forecast savings**

The national indicative energy savings target for 2016 was calculated for the purposes of the 1st NEEAP, applying the methodology set out in Annex I to Directive 2006/32/EC. The indicative energy savings target to be fulfilled by Latvia by 2016 was fixed as 3 483 GWh, and it was not revised in the 2nd NEEAP.

The energy savings target calculated for the period from 2008 to 2016 by sectors of the national economy is shown in Table 4 below. The cumulative (summed-up) method has been used to reflect energy savings for each specific year against the reference year (2008).

Table 4.

Calculated national energy savings target by end-use sectors, GWh

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Households	3	15	52	360	900	1 471	1 921	2 311	2 701

[6] http://likumi.lv/doc.php?id=205247

Transport	0	1	4	26	68	111	145	175	204
Industry and agriculture	0	1	3	23	57	92	121	147	170
Services	1	2	8	54	136	222	290	349	408
TOTAL:	**4**	**19**	**67**	**463**	**1 161**	**1 896**	**2 477**	**2 982**	**3 483**

The calculation of the energy savings target for 2020 also considers potential energy savings of the transformation sector, as recommended by the EC Guidance. The energy savings target for 2020 has been set for both end-use sectors and primary energy, and it has been notified to the EC in the Progress Report on the Implementation of the National Reform Programme of Latvia within the "Europe 2020" Strategy (approved by the extraordinary meeting of the Cabinet of 29 April 2013, Minutes No 25, Paragraph 2). A summary of forecast and achieved energy savings by end-use sectors and overall forecast energy savings (energy savings in end-use and primary energy savings) for 2020 is presented in Table 5 below.

Table 5.

Overall energy savings target (both end-use sectors and primary energy) for 2010, 2016 and 2020

	Forecast energy savings by end-use sectors, GWh (PJ)	**Achieved energy savings by end-use sectors, GWh (PJ)**	**Overall forecast energy savings, GWh (PJ)**
2010	67 (0.24)	2 069* (7.4)	N/a
2016	3 483 (12.55)	N/a	N/a
2020	6 050 (21.78)	N/a	7 779 (28.00)

*- Adjusted *results of the First National Energy Efficiency Action Plan of Latvia 2007 – 2010 notified to the European Commission* in the Progress Report on the Implementation of the National Reform Programme of Latvia within the "Europe 2020" Strategy issued in 2013.

A bottom-up calculation method has been applied to energy savings obtained through the implementation of 144 energy efficiency improvement projects in 2012 under the following support programmes:

1. (EU Structural Funds and the Cohesion Fund (hereinafter – EU funds)) Activity 3.4.4.1 "Measures to Improve Thermal Insulation of Multi-apartment Residential Buildings" of the Supplement to the 3rd Operational Programme "Infrastructure and Services" (hereinafter - Activity 3.4.4.1).

2. (EU funds) Activity 3.4.4.2 "Measures to Improve Thermal Insulation in Social Housing" of the Supplement to the 3rd Operational Programme "Infrastructure and Services" (hereinafter - Activity 3.4.4.2);

3. Tender "Increase in the Energy Performance of Municipal Buildings (Phase I)" financed by the CCFI.

Table 6.

Energy savings achieved in 2012 (based on the submitted energy savings reports)[7]

Energy performance programme	Sector for which energy savings are reported	Energy savings in heating, GWh	Energy savings in hot-water provision, GWh	Total energy savings, GWh
Increase in the energy performance of social housing	Households	0.42	0.21	0.63
Increase in the energy performance of residential buildings	Households	33.3	0.12	33.42
Increase in the energy performance of educational establishments and municipality administrative buildings	Municipalities and central government	25.1	-	25.1
Total		58.82	0.33	**59.15**

Table 7.

Energy savings in end-use in 2012 calculated on the basis of CSB data

▪ Sector/sub-sector	▪ Calculation method	▪ Energy savings achieved in 2012 (GWh)
Households	▪ top-down	▪ 1 869
Services	▪ top-down	▪ -76 (no energy savings achieved)
Industry	▪ top-down	-1 029 (no energy savings achieved)
Transport	▪ top-down	▪ 1 037
Total	▪	1 801

The total final energy savings obtained during the period from 2008 to 2012 are 1 801 GWh (6.48 PJ), which exceeds the planned trajectory to meet the final energy savings target.

[7] http://www.em.gov.lv/em/2nd/?cat=30173

Based on the EC Guidance[8], the Information Report is accompanied by Annex 1 "Methodology used for calculating energy savings according to the requirements of Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services".

[8] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:141:0048:0053:LV:PDF

- **3. IMPLEMENTATION OF ENERGY EFFICIENCY POLICY MEASURES**
- **3.1. Horizontal measures**
- **3.1.1. Amount of energy savings over the obligation period**

Article 7 of Directive 2012/27/EU provides for the national obligation to reduce energy sales to final customers, setting the binding target (hereinafter – the binding target). Each year new energy savings are calculated as 1.5 % of the reference value, which is computed as the average of the annual energy sales to final customers in 2010, 2011 and 2012. This reference value remains unchanged until 31 December 2020. The cumulative EEOS target relies on the following input data:

1) energy balance data by the CSB[9];

2) data on the utilisation of self-produced wood by households, derived from the CSB database of household surveys (1996, 2001, 2006, 2010)[10];

3) data about the use of energy in industrial activities listed in Annex I to Directive 2003/87/EC, derived from the database of the Latvian National Metrology Centre[11].

Calculation of the cumulative energy savings target (see Figure 6):

1. The cumulative final energy consumption that is initially set for Latvia for the period from 2014 to 2020 is 19 391 GWh (1.667 Mtoe; 69.8 PJ).

2. Pursuant to Article 7(1) of Directive 2012/27/EU, the sales of energy used in transport may be excluded from the calculation of the binding target. Considering this possibility, the cumulative final energy consumption (excluding the transport sector) to be achieved for the period from 2014 to 2020 is 13 971 GWh (1.2 Mtoe; 50.3 PJ).

3. Given that the binding target is calculated as new savings of 1.5 % of the annual energy sales to final customers of all energy distributors or all retail energy sales companies by volume, the consumption of energy from the utilisation of self-produced wood by households may be excluded from the calculation. As a result, the cumulative final energy consumption (excluding the transport sector and the utilisation of self-produced wood by households) for the period from 2014 to 2020 will be **13 194 GWh** (1.13 Mtoe; 47.5 PJ).

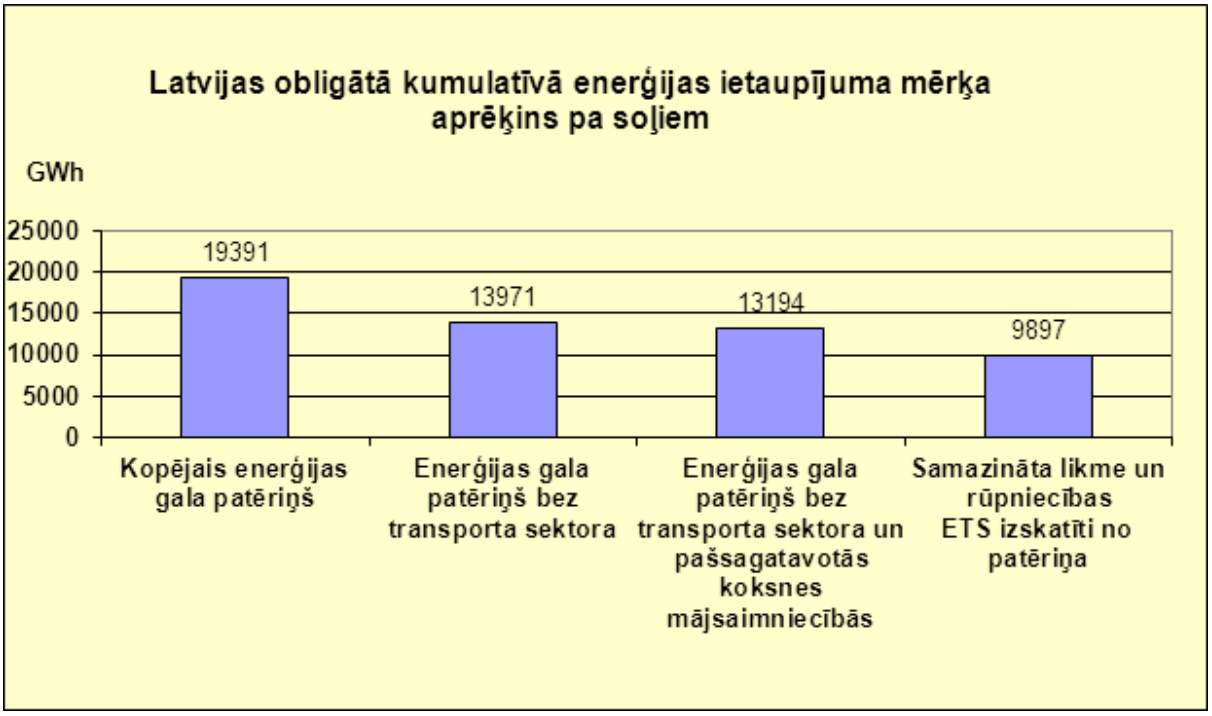
4. Articles 7(2) and (3) of Directive 2012/27/EU provide for various possibilities that allow for a reduction in energy savings for the binding target by no more than 25 %. As a result of applying the reduced annual rate of new energy savings to final energy consumption, excluding the sales of energy used in industrial activities listed in Annex I to Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, the binding

[9] http://www.csb.gov.lv/dati/statistikas-datubazes-28270.html

[10] http://www.csb.gov.lv/en/dati/statistics-database-30501.html

[11] http://www.meteo.lv/lapas/uznemumi-kuriem-izsniegtas-siltumnicefekta-gazu-emisijas-atlaujas-2-pe?id=1253&nid=575

cumulative target for the period from 2014 to 2020 is equivalent to energy savings of 9 897 GWh (0.85 Mtoe; 35.6 PJ) or 2 474 GWh (0.213 Mtoe; 8.9 PJ) in 2020. The calculation is shown in Figure 6 below.



Key (left to right): total final energy consumption; energy end-use without the transport sector; energy end-use without the transport sector and self-produced wood by households; reduced rate and industrial ETS excluded from the calculation.

Title: Step-by-step calculation of the binding cumulative energy savings target set for Latvia

Figure 6. Binding cumulative energy savings target over the obligation period (2014 – 2020), applying various possibilities for reducing the target

- **3.1.2. National energy efficiency obligation scheme**

Contrary to many other countries, Latvia has no experience in the implementation of the EEOS or its elements. Based on the experience of other countries, the preconditions for the successful fulfilment of the binding target include cooperation between energy companies and final customers, analysis of final customers' consumption pattern, implementation of cost-effective and innovative energy efficiency measures and adequate savings measurement, control and verification systems. These preconditions have not been fulfilled in Latvia yet. According to Article 7(9) of Directive 2012/27/EU, as an alternative to attain the 1.5% target, a Member State may opt to combine the EEOS with alternative measures (in which case the obligations imposed on companies are reduced) or use a combination of only alternative measures to achieve the required energy savings, without implementing the EEOS. According to Article 7(4) of Directive 2012/27/EU, the EEOS designates, on the basis of objective and non-discriminatory criteria, obligated parties amongst distributors and/or retail energy sales companies and may include transport fuel distributors or transport fuel retailers operating in the territory of the Member State. Obligated parties will be able either to take energy efficiency measures individually or count towards their obligation certified energy

savings achieved by energy service providers or other third parties. Once a year, the responsible public body will publish the energy savings achieved by each obligated party.

Latvia has opted to combine the EEOS with alternative measures, which involve allocations by EU funds. A decision on the establishment of the EEOS was approved by Paragraph 1, Sub-paragraph 1.2 of Cabinet Order No 587 of 2 December 2013 "On the Concept of the Transposition into National Law of the Requirements of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC" (Minutes No 63, Paragraph 52) (hereinafter – the Concept Order).

The most suitable obligated parties to be bound by the EEOS are as follows:

1) in the case of electricity supply – electricity sellers and distribution system operators. AS Sadales tīkls supplies electricity to more than one million electricity consumers, covering 99 % of the territory of Latvia. Apart from other activities, AS Sadales tīkls takes loss reduction efforts, ensures the measurement of supplied energy, as well as sets tariffs for the system services to be applied by customers depending on the use of electricity (for instance: S-1 – households);

2) in the case of district heating systems – district heating companies or district heating system operators if the scheme involves several heat producers, at least one of them being independent. An obligated party of the EEOS is any district heating company which is incorporated and governed by the Law on Public Utilities Regulators. In order to embrace the maximum portion of district heating, meanwhile considering the administrative capacity of the relevant district heating company for the purposes of the EEOS, annual sales of heat will be set as a threshold for the involvement of energy suppliers in the EEOS;

3) in the case of natural gas supply – the most suitable energy supplier is a natural gas system operator, based on Section 42 of the Energy Law and Paragraphs 1 and 3 of Cabinet Regulation No 1048 of 16 December 2008 "Regulation on the Supply and Use of Natural Gas".

Energy suppliers, which will be designated as obligated parties under the EEOS, will have to obtain cumulative (accumulated) energy savings in any end-use sector by 2020. These savings may be achieved by obligated parties either individually or through third parties by implementing energy efficiency measures, such as support to companies in the installation of more efficient lighting or to private individuals in the acquisition of more energy-efficient devices.

Representatives of energy companies are consulted to agree on the best solution for the EEOS implementation.

The Energy Efficiency Law is being drafted at present and, among other things, it will provide for the EEOS implementation, while detailed principles of the establishment and monitoring of the EEOS will be laid down in relevant Cabinet regulations.

- **3.1.3. Savings to be achieved through the EEOS**

There are multiple options how the target to be attained through the EEOS may be distributed among obligated parties. Until the qualifying obligated parties are selected, the distribution of the energy savings target among energy suppliers is calculated based

on an assumption that all suppliers of the relevant type of energy are bound by the EEOS. The potential trajectory to meet the cumulative energy savings target is derived by way of calculations developed by the Institute of Physical Energetics. The calculation of the cumulative energy savings target is presented in the Report on the Implementation of the Requirements Set Forth in Article 7 of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, which is available on the website of the Ministry of the Economy:

http://www.em.gov.lv/em/2nd/?cat=30173

Table 8.

Potential trajectory to meet the cumulative energy savings target for the period

Year	Energy savings (GWh)							Total
	Per year							
	2014	2015	2016	2017	2018	2019	2020	
2014	75							75
2015	75	100						175
2016	75	100	315					490
2017	75	100	315	535				1 025
2018	75	100	315	535	755			1 780
2019	75	100	315	535	755	906		2 686
2020	75	100	315	535	755	906	979	3 665
Total for the period								**9 896**

The cumulative energy savings target is calculated at national level, and it must be at least equivalent to achieving new savings each year from 1 January 2014 to 31 December 2020 of 1.5 % of the annual energy sales to final customers of all EEOS obligated parties by volume, averaged over the most recent three-year period prior to 1 January 2013. The sales of energy, by volume, used in transport may be partially or fully excluded from this calculation.

- **3.1.4. Implemented alternative policy measures**

Latvia is planning to achieve part of the calculated binding savings target by means of alternative measures, in order to reduce the burden of the target imposed on distributors and retail energy sales companies. Alternative measures chiefly include the activities referred to in the NDP2020 and energy efficiency improvement programmes of EU funds planned for the implementation of these activities. According to the

requirements of Article 7(1) of Directive 2012/27/EU, energy efficiency measures must concern final customers to achieve the 1.5 % target; therefore, measures to improve energy efficiency of the generation and distribution of energy financed by the EU funds in the district heating sector (reconstruction of heat sources and heat pipelines) cannot be regarded as alternative measures.

Multi-apartment and social housing

Housing insulation is one of the key energy efficiency improvement measures. The objective of this measure is to improve the energy performance of residential buildings to ensure the sustainability of the building stock and the efficient use of energy.

Activity 3.4.4.1 was initiated in 2009, while the projects under this activity will be implemented until 2015. It is expected that 200 – 300 projects on the renovation of multi-apartment residential buildings will be implemented annually in 2014 and 2015. By 30 May 2014, 902 contracts on the ERDF funding totalling EUR 79.44 million have been concluded, of which 387 projects on the ERDF funding amounting to EUR 28.66 million have been completed. According to the SOP, the ERDF allocations available for Activity 3.4.4.1 total EUR 67 956 285. The implementation of these projects would bring **the cumulative savings up to 1 050 GWh for the period**. With a view to popularising the activity, a large-scale information campaign "Dzīvo siltāk!" ("Living warmer!") has been carried out, encouraging apartment owners to participate in the management of common property and upgrading of the energy performance of buildings. In addition, the successful implementation of activities aimed at improving the energy performance of multi-apartment buildings has been promoted by amendments made to laws, thereby simplifying administrative procedures and expanding the pool of applicants.

Activity 3.4.4.2 has been implemented since 2008, while the projects under this activity will be continued until 2015. The objective of this activity is to enhance the energy performance of the municipal social housing stock, meanwhile improving its quality and sustainability and providing the categories of population at risk of social exclusion with adequate housing. By 30 May 2014, 55 contracts for ERDF funding of EUR 5.2 million have been concluded, of which 51 projects for ERDF funding amounting to EUR 4.65 million have been completed. These projects are expected to result in **cumulative savings of up to 40 GWh for the period**.

So far, almost 2 % of the total number of multi-apartment buildings have been renovated. Information about the measures implemented to renovate multi-apartment buildings is available on the website of the Ministry of the Economy, the link to "Renovēto daudzdzīvokļu māju e-karte" (the map of completed projects).

https://maps.google.com/maps/ms?ie=UTF8&oe=UTF8&msa=0&msid=213222271689586106991.0004a8f95b35872d3242a&dg=feature .

Information about renovated multi-apartment residential buildings by region can be found on: http://em.gov.lv/em/2nd/?cat=30819.

Public and production buildings

One of the objectives of CCFI tenders is to reduce carbon dioxide emissions by public and production buildings by way of energy efficiency measures. Complex solutions, such as the reduction of heat and electricity consumption, effective energy supply to buildings and construction and reconstruction of low-energy buildings, are also supported. During the period from 2009 to 2013, the aggregate CCFI allocations to improve the energy performance of buildings were approximately EUR 126 million, supporting the implementation of at least 205 projects.

The objective of upgrading the energy performance of public and production buildings is to provide financial support for energy efficiency projects in this sector, as well as to reduce GHG emissions. Complex solutions, such as the reduction of heat and electricity consumption and effective energy supply to buildings, may also qualify for support. During the period from 2010 to 2013, the aggregate CCFI contributions to implement the measures were EUR 107.42 million.

In 2011 several projects were commenced to increase the energy performance of public buildings. The total funds allocated to these projects were EUR 102.73 million, including EUR 33.15 million granted by the CCFI and EUR 51.08 million granted by EU funds. Complex solutions to upgrade the energy performance of buildings, as well as the construction and reconstruction of low-energy buildings, may also be eligible for support. Overall, the energy efficiency improvement measures covered 350 public buildings.

For the purposes of complex solutions to increase the energy performance of production companies, projects with a total public funding of EUR 2.87 million (CCFI) were launched and contracts for the total amount of EUR 11.2 million were signed by the end of 2011. A total of 28 projects to improve the energy performance of production buildings with total CCFI contributions of EUR 6.12 million were implemented in 2012.

54 project applications, including 38 projects for educational establishments and 16 projects for economic operators, with total CCFI contributions of EUR 11.36 million were approved under the CCFI tender "Complex Solutions for the Reduction of Greenhouse Gas Emissions" (Phase II) in 2013. The projects had to be completed by 31 October 2013, and their objective was to make investments in production equipment and upgrading of the energy performance of buildings. Applications for Phase III of this tender were submitted at the end of 2013. As a result, the total CCFI contributions of EUR 34 million were approved for 168 projects, including 97 projects for educational and cultural establishments, 62 projects for economic operators and nine projects for medical establishments. These projects have to be completed by 30 June 2014. Based on the available information, **the cumulative savings under Phase III could reach 384 GWh**[12]. Phase IV of the tender was announced at the beginning of 2014. The total available funding is EUR 14.5 million, the date for project completion is 31 January 2015. The purpose of the tender is to reduce GHG emissions by ensuring a switch from technologies that use fossil energy to technologies using renewable energy sources, upgrading the production equipment used by the tenderers or replacing it with new production equipment and improving the energy performance of buildings. Projects may be submitted by economic operators and educational, cultural or medical establishments.

Lighting infrastructure

[12] http://www.em.gov.lv/images/modules/items/atskaite_EERP_2013.pdf

The objective of introducing an efficient lighting infrastructure in the public territories of municipalities is to provide financial assistance to municipalities, their bodies, agencies or economic operators in the introduction of lighting infrastructure that would allow for a reduction in energy use and GHG emissions. 44 projects with CCFI contributions totalling EUR 5 457 389 were successfully implemented under Phases I and II of the CCFI tender "Reduction in Greenhouse Gas Emissions in the Lighting Infrastructure of the Public Territories of Municipalities". Applications for Phase III of this activity were submitted in 2013. As a result, 12 project applications with total CCFI contributions of EUR 1.18 million were approved. The projects had to be completed by 31 March 2014. The purpose of the tender is to reduce carbon dioxide emissions in the lighting infrastructure of the public territories of municipalities by introducing technologies and environment-friendly techniques that result in reduced electricity consumption. According to the available information, Phase III of the tender could bring about electricity savings of 1.2459 GWh per year. Based on the available information, **the cumulative savings under Phase III could reach 27 GWh**[13].

The objective of improving the energy efficiency of district heating systems is to boost the efficiency of heat generation, minimise heat loss in the transmission and distribution systems, as well as facilitate the replacement of fossil fuels with renewable energy sources. The measures under Sub-activity 3.5.2.1.1 of the SOP to improve the efficiency of district heating systems are still in progress. According to the SOP, the total CF funding allocated to Sub-activity 3.5.2.1.1 is EUR 84 448 883. Five phases of the tender resulted in 108 contracts signed with CF funding totalling EUR 72.9 million by February 2014.

▪ 3.1.5. Planned alternative policy measures

According to EU funds programming documents 2014 – 2020, an indicative amount of EUR 376.16 million will be allocated to the energy performance of buildings and the use of RES in Latvia for the period from 2014 to 2020, including the following:

1) the energy performance of industrial buildings and the use of RES – EUR 32.56 million; the goal is to facilitate the efficient use of energy and reduce energy consumption in the manufacturing industry. Energy efficiency will be improved by ensuring the sustainable use of energy and promoting the competitiveness of the manufacturing industry;

2) the energy performance of central government buildings – EUR 97.86 million. Starting from 2014 three per cent of the total floor area of central government buildings will be renovated so that they meet minimum energy performance requirements. Owing to the renovation efforts, central governments will fulfil an exemplary role and facilitate the energy certification of buildings;

3) the energy performance of residential buildings – EUR 150 million;

4) the energy performance of municipal buildings – EUR 42.56 million;

5) energy efficiency and the use of local RES in district heating – EUR 53.19 million; it is planned to support the reconstruction of heat sources, including the acquisition and installation of production equipment and the reconstruction and construction of heat transmission and distribution systems with a view to reducing heat loss.

[13] http://www.em.gov.lv/images/modules/items/atskaite_EERP_2013.pdf

The following measures may be considered as alternative measures to improve energy efficiency:

1) to formulate the procedure for the indication by labelling and standard product information of the consumption of energy for most widely used materials and technologies applied to upgrade the energy performance of buildings (for instance, windows). Like the existing procedure adopted for household electric appliances, such a new procedure would permit effective customer information about energy efficiency before the relevant item is purchased. As a result, energy customers would be able to rely not only on price but also energy-related information in selecting renovation products;

2) to stipulate that all consumers connected to the district heating system must be provided with individual water meters. Based on historical experience, this practice will encourage consumers to save energy because they have a means to manage their individual consumption, and energy costs are based on the actual energy consumption. It is laid down in Directive 2012/27/EU that in multi-apartment and multi-purpose buildings with a central heating/cooling source or supplied from a district heating network or from a central source serving multiple buildings, individual consumption meters must be installed to measure the consumption of heat or cooling or hot water for each unit where technically feasible and cost-efficient. Where the use of individual meters is not technically feasible or not cost-efficient, to measure heating, individual heat cost allocators must be used for measuring heat consumption at each radiator, unless it is shown by the Member State in question that the installation of such heat cost allocators would not be cost-efficient. In those cases, alternative cost-efficient methods of heat consumption measurement may be considered;

3) to enter into a voluntary agreement between the MoE and municipalities on energy efficiency measures pursuant to Cabinet Regulation No 555 of 12 July 2011 "Regulation on the Procedure for Entering into and Supervision of Energy Efficiency Improvement Agreements". To introduce different forms of agreements for large (Daugavpils, Jelgava, Jēkabpils, Jūrmala, Liepāja, Rēzekne, Riga, Valmiera, Ventspils) and small municipalities. The government should provide small municipalities with methodological support in designing their sustainable energy development plans, which may include the offer of suitable models, training on the application of the models and data aggregation. **The cumulative savings could reach 150 GWh in 2020;**

4) to provide large municipalities with methodological support in designing their sustainable energy development plans, energy audit support programmes, as well as financial support in the establishment of revolving funds in cities in the form of soft loans;

5) to design efficiency plans for the premises owned or occupied by the central government, which would specify that each ministry must formulate plans whereby energy performance would be upgraded by 20 – 25 %;

6) to enter into an energy efficiency agreement with the occupants of central government buildings, which will result in an improvement of at least 25 %. The selection and implementation of energy efficiency measures must be supported by a report attached to the building's energy performance certificate, showing economically justifiable measures to increase energy performance that are cost-effective over the expected (planned) lifetime. The government may suggest that reduced rents should be applied to a certain period after the measures to enhance the energy performance of the relevant building have been implemented;

7) to include energy efficiency criteria into State aid programmes. According to Strategy 2030, energy efficiency will be a national priority during its operation period, and it is the most rapid and cost-effective way to reduce sustainability and competitiveness risks, meanwhile creating new jobs and promoting growth. It is therefore essential for the government to make use of all possibilities for improving energy efficiency across all areas of intervention. Updating energy efficiency requirements should be considered. Such updates might include technical limits set for energy suppliers that are engaged in heat generation and district heating.

Household sector

So far, Latvian households occupying single-family detached houses have had extremely limited possibilities of enjoying energy efficiency support. However, single-family detached houses account for quite a large portion of the total household building stock. Targeted support measures are required to foster energy efficiency measures in this sector, thereby encouraging private capital investment.

Municipalities could set up an information centre and provide free expert advice services regarding energy efficiency solutions for households. Two municipal energy agencies – Riga Energy Agency (Rīgas enerģētikas aģentūra) and Zemgale Regional Energy Agency (Zemgales reģionālā enerģētikas aģentūra) – are consulting households free of charge on solutions for increasing their energy efficiency.

The central government or municipalities could render support to households in the implementation of energy efficiency measures, following the experience of Riga, Valmiera, Liepāja, etc.

Transport sector

According to the information report on refurbishment of the rolling stock of AS Pasažieru vilciens prepared by the Ministry of Transport and approved by the Cabinet on 19 November 2013, the Ministry of Transport intends to renovate the rolling stock of AS Pasažieru vilciens by leasing new electric multiple-unit trains (24 to 45 trains in 15 years) and by refurbishing 19 existing diesel multiple-unit trains during the period from January 2014 to August 2015. The projected energy savings from reduced energy consumption and more efficient functioning of the rolling stock could be 15 %. **The cumulative savings could reach 31 GWh by 2020.**

The energy efficiency of vehicles can be upgraded by improving the following:

- the EU legal framework;
- the taxation policy;
- the use of vehicles by means of information provision.

The national programmes refer to the last two types of measures listed above.

In the context of taxation policies, it is essential for Latvia to ensure adequate energy or CO2 taxes that have the effect of reducing end-use energy consumption, as set forth by Strategy 2030.

Several driving schools provide education and training on energy-efficient driving for vehicle drivers, which undergo either the basic course to obtain a driving licence or any

special training courses. Courses should be designed for both owners of private vehicles and special business categories, such as drivers of commercial vehicles or buses. Driver education could address both technical aspects and compliance with the required parameters and the impact produced by driving style on fuel consumption. Matters covered by such educational information campaigns may include but are not limited to the following[14]:

1) tyre inflation pressure control to prevent any increases in fuel consumption, for example:

- underinflation of 0.2 bar increases fuel consumption by 1 %;
- underinflation of 0.4 bar increases fuel consumption by 2 %;
- underinflation of 0.6 bar increases fuel consumption by 4 %.

2) higher speeds lead to increased fuel consumption, for example;

- speeds of 105 km/h against 90 km/h increase fuel consumption by nearly 20 %;
- speeds of 120 km/h increase fuel consumption by nearly 25 %.

- **3.1.6. Conversion factors by types of energy**

Both the conversion factors set out in Annex IV to Directive 2012/27/EU and other conversion factors that are justified given the different situation existing in the energy sector of the Member States are applied for the purpose of comparison of energy savings and conversion to a comparable unit.

Factors applied for the conversion of energy consumption in Latvia are listed in Table 9 below (highlighted in yellow), based on the net calorific value used in Annex IV to Directive 2012/27/EU and the Latvian Central Statistical Bureau.

Table 9.

Used net calorific value

Energy resource	**Unit of measurement**	**Net calorific value (NCV)**	
		Annex IV to Directive 2012/27/EU	Latvian Central Statistical Bureau
Coal	TJ/thousand tonnes	17.2-30.7	26.22
Peat	TJ/thousand tonnes	7.8-13.8	10.05
Peat briquettes	TJ/thousand tonnes	16-16.8	15.49
Coke	TJ/thousand tonnes	28.5	26.79

[14] Development of the suggestions for the National Energy Efficiency Action Plan according to Energy Efficiency Directive 2012/27/EU: http://www.em.gov.lv/images/modules/items/atskaite_EERP_2013.pdf

Natural gas	TJ/thousand tonnes	47.2	2010 – 49.12 2011 – 49.14 2012 – 49.14
Shale oil	TJ/thousand tonnes		39.35
Liquefied petroleum gas	TJ/thousand tonnes	46	45.54
Motor and aviation gasolene	TJ/thousand tonnes	44	43.97
Gasoline type jet fuel	TJ/thousand tonnes	44	43.21
Kerosene type jet fuel	TJ/thousand tonnes	44	43.21
Kerosene	TJ/thousand tonnes	44	43.20
Diesel fuel and fuel for household stoves	TJ/thousand tonnes	42.3	42.49
Residual (heavy) fuel oil	TJ/thousand tonnes	40	40.60
White spirit	TJ/thousand tonnes		41.86
Lubricants	TJ/thousand tonnes		41.86
Petroleum bitumen	TJ/thousand tonnes		41.86
Paraffin wax	TJ/thousand tonnes	40	41.86
Petroleum coke	TJ/thousand tonnes		32.98
Waste oil	TJ/thousand tonnes		29.23
Other oil products	TJ/thousand tonnes		41.86
Electricity	TJ/GWh	3.6	3.60
Heat	TJ/TJ	1	1.00
Municipal waste for burning	TJ/thousand tonnes	7.4-10.7	2010 – 18.56 2011 – 17.18 2012 – 17.05
Waste tyres	TJ/thousand tonnes	7.4-10.7	2010 – 26.20 2011 – 27.98 2012 – 27.98
Wood charcoal	TJ/thousand tonnes		30.00

Bioethanol	TJ/tonnes		0.0268
Biodiesel	TJ/tonnes		0.0372
Landfill gas	TJ/million m^3		2010 – 19.82 2011 – 19.03 2012 – 19.02
Sewage sludge gas	TJ/million m^3		2010 – 22.80 2011 – 20.49 2012 – 20.49
Straw	TJ/thousand tonnes		14.40
Wood	TJ/thousand solid m^3		6.70
Wood waste	TJ/thousand loose m^3		2.68
Chip fuel	TJ/thousand loose m^3		3.40
Wood bricks	TJ/thousand tonnes	16.8	17.00
Wood pellets	TJ/thousand tonnes	16.8	18.00

- **3.1.7. Measuring of energy savings**

The existing system ensures energy end-use monitoring based on Cabinet Regulation No 923 of 30 September 2010 "Procedure for Measuring the National End-use Energy Savings and Ensuring the Operation of the Energy Efficiency Monitoring System" issued according to Section 4, Paragraph three and Section 5, Paragraph one of the Energy End-use Efficiency Law.

Energy savings will be calculated using the general methods and principles set out in Annex V to Directive 2012/27/EU, including the lifetime of savings and additionality. The calculation of energy savings from the insulation of buildings is based on the lifetime according to point 4 of Annex IV to Directive 2006/32/EC, as specified in Annex 1 "Methodology used for calculating energy savings according to the requirements of Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services".

The report "On cost-optimal levels of minimum energy performance requirements applied in Latvia to new and reconstructed buildings according to Article 5 of Directive 2010/31/EU on the energy performance of buildings"[15] has been drawn up following the requirements of Article 5 of Directive 2010/31/EU. As regards

[15] http://em.gov.lv/em/2nd/?cat=30270

reconstructed buildings, energy savings will be calculated on the basis of the cost-optimal levels referred to in this report.

▪ 3.1.8. Energy audits and management systems

It is laid down in Strategy 2030 that, with a view to increasing energy efficiency, it is necessary to promote the improvement of energy efficiency of small and medium-sized enterprises by introducing energy audits and energy management systems. For the promotion of energy efficiency, it is essential to activate the role of the industry association by triggering a discussion regarding the determination of energy consumption benchmarks in the industry. Moreover, it is planned to implement public support mechanisms to promote the introduction of energy efficiency improvement measures in the industry during the upcoming programming period.

In accordance with Section 12 of the Energy End-use Efficiency Law, industry associations, economic operators or municipalities may enter into agreements with the State on the implementation of energy efficiency improvement measures and, based on Section 12, Paragraph two, Clause 2 of this Law, the State may specify subsidies for energy audits and individual energy efficiency improvement measures implemented in accordance with these agreements.

If an agreement on energy savings is defined by the government as an alternative measure to implement the EEOS, the government could cover up to 60 % of the costs of industrial energy audits, which would total EUR 324 415[16] for the period from 2014 to 2020. This practice would be an effective means to attract economic operators for this measure.

Cabinet Regulation No 138 of 12 March 2013 "Regulation on Industrial Energy Audits" (hereinafter – Regulation No 138) was adopted according to Section 15, Paragraph three of the Energy End-use Efficiency Law and Section 7, Paragraph one of the Conformity Assessment Law. Regulation No 138 lays down the procedure for carrying out industrial energy audits in large industrial enterprises, requirements as to the performance of industrial energy audits by legal entities, key requirements as to the conformity assessment of energy auditors, as well as the procedure for monitoring the compliance with these requirements.

Cabinet Regulation No 382 of 9 July 2013 "Regulation on Independent Experts in the Energy Performance of Buildings" (hereinafter – Regulation No 382) was adopted according to Section 12, Paragraph four of the Law on the Energy Performance of Buildings. Regulation No 382 sets out the requirements as to the competence of independent experts and the procedure for proving their competence. A list of independent experts, comprising 108 independent experts in the energy performance of buildings, is available on: http://www.em.gov.lv/em/2nd/?cat=30272.

[16] Considering that the costs of energy audits may differ significantly depending on the industry, it is assumed that the average costs of an energy audit in large industrial enterprises are EUR 4 268.62. 60 enterprises per year = EUR 256 116.93 in total, with 60 % amounting to EUR 153 670.16. It is assumed that the costs of an energy audit in small and medium-sized enterprises are EUR 1 422.87 on average (to be paid by the government: EUR 1 422.87 x 200 = EUR 284 574.36, with 60 % amounting to EUR 170 744.62).

At present, the Ministry of the Economy, jointly with the CSB, are compiling a list of large enterprises that will be required to undergo a mandatory energy audit until 5 December 2015 and once every four years thereafter.

▪ 3.1.9. Metering and billing

Strategy 2030 specifies that, in order to facilitate energy efficiency, the roll-out of smart meters should be promoted, thereby raising consumer awareness of their individual energy consumption and allowing for the control and decrease in the quantity of consumed energy.

It is set forth in Section 16, Paragraph four of the Energy End-use Efficiency Law that in so far as it is technically possible, financially reasonable and proportionate in relation to the potential energy savings, the energy service provider must install individual electricity and heat meters that accurately reflect the final customer's actual energy consumption and that provide information on actual time of use. Such meters must be provided when a connection is made in a new building or a building undergoes complete reconstruction, as set out in the Law on the Energy Performance of Buildings. AS Latvenergo has designed a smart grid concept (approved by a decision of the Board of Latvenergo on 1 March 2011) as part of the distribution network development. Key drivers for the smart grid include green initiatives and the development of renewable energy and energy efficiency – assuming that the most informed consumer will use less energy.

It is necessary to introduce smart metering systems in order to foster the participation of consumers in efficiency efforts. According to AS Sadales tīkls, the current installed base of meters includes 1 099 million electricity meters; legal entities have been provided with both simple electricity meters (metering consumption in one or several tariff areas, with no interface that would allow remote reading) and smart electricity meters (metering both daily and monthly consumption by tariff areas, creating load profiles, recording events (power outages, unauthorised opening of the meter cover, etc.) in a special ledger, recording instantaneous values and having communication interfaces for remote reading).

Table 10.

Number and types of installed electricity meters

Number of electricity meters of AS Sadales tīkls **Meter type**	**Number (pieces)**
Total meters, including:	**1 099 578**
Single-phase induction-type	646 794
Single-phase electronic, simple	132 671
Three-phase induction-type	232 243
Three-phase electronic, simple	76 157
Three-phase smart electricity meters	11 713

According to the current practice, smart electricity meters allowing for remote meter reading are provided to large electricity consumers above 100 kW (above 200 A). Such meters are being gradually installed by AS Sadales tīkls in households whose electricity consumption reaches 2 500 kWh per year. Starting from 2015, the extensive replacement of customer meters must be performed, and for this reason the installation of smart meters will be continued.

With a view to supporting dynamic pricing, electricity consumers are offered various tariffs depending on the time of use. In addition, smart metering systems are being introduced, and net metering will be ensured.

The introduction of innovative information and communication technologies and devices, including smart metering and smart grids, makes it possible to take a major step towards smart cities. This is a goal pursued by Riga and other cities and towns of Latvia.

AS Latvenergo is implementing a project named "Promoting Energy Efficiency in Households Using Smart Technologies". This five-year project is aimed at providing households with detailed information about their individual energy consumption and CO2 emissions, as well as achieving a 10 % reduction in energy consumption. A total of 500 households will be involved in the project. In 2012 a remote wireless automatic meter reading system which transmits data to the single control centre was installed in the district heating system of Riga by AS Rīgas siltums, covering 8 078 heating units (7 423 buildings), on the basis of modern meters.

- **3.1.10. Availability of qualification, accreditation and certification schemes**

According to Cabinet Regulation No 138, the accreditation of authorities certifying energy auditors is within the competence of the Latvian National Accreditation Bureau of the State-owned limited liability company Standartizācijas, akreditācijas un metroloģijas centrs (Standardisation, Accreditation and Metrology Centre). In Latvia, the certification of energy auditors is performed by the Building Specialist Certification Centre of the Association of Heat, Gas and Water Technology Engineers of Latvia and the Certification Office of SIA Mācību un konsultāciju centrs ABC (the Education and Consultation Centre ABC). The list of certified energy auditors and contact details of the accredited certification authorities are available on the website of the Ministry of the Economy[17].

It is set forth in Cabinet Regulation No 1013 of 9 December 2008 "Procedure according to which Owners of Apartments in Multi-apartment Residential Buildings Make Payments for the Services Associated with the Use of the Apartment" that, with a view to ensuring more efficient use of heat and facilitating payments, apartment owners may elect a representative (energy manager) to monitor energy use, take meter readings and perform other contractual duties. Apartment owners must enter into a contract with the energy manager on the performance of these duties, and the relevant contract must specify the energy manager's rights, duties and responsibilities.

The national level of technical competence, objectivity and reliability, as well as various training programmes are sufficient and available for all stakeholders, including providers of energy services, energy managers and installers of energy-related building elements.

[17] http://www.em.gov.lv/em/2nd/?cat=30272

According to Section 2 of the Vocational Education Law of 13 December 2007, Latvia has defined the levels of vocational education, levels of vocational qualifications and education necessary for the acquisition of a relevant vocational qualification. The education system of Latvia has five levels of vocational qualifications, which can be obtained after completing the duly accredited vocational education programmes.

The Law on Regulated Trades and the Recognition of Professional Qualifications (Section 7, Paragraph two) lists regulated trades in the construction industry (construction engineer and construction technician) for which the qualification requirements are defined by accredited education programmes and, where appropriate, professional certification regulations. As regards architecture and construction, construction inspectors are subject to regulation according to Section 7, Paragraph three of this Law, and the applicable qualification requirements are set out in relevant construction laws.

In Latvia, 29 study programmes were accredited as of 18 March 2013 in the following areas: power engineering, except for heat power engineering and heat engineering; electronic engineering and automation, except for automation, computer engineering and telecommunications. The programmes by Latvian educational establishments are available on the website of the Higher Education Quality Evaluation Centre: http://www.aiknc.lv/lv/prog_aip_virziens.php?id=18.

35 study programmes are accredited in architecture and construction. The distribution of programmes by Latvian educational establishments is available on the website of the Higher Education Quality Evaluation Centre: http://www.aiknc.lv/lv/prog_aip_virziens.php?id=20.

For instance, Riga Technical University offers a bachelor study programme in architecture and construction. At the end of the programme, students are awarded a degree in heat, gas and water engineering systems and an engineering qualification in heat, gas and water supply technologies. This study programme was approved by Resolution No 510 of the Senate of Riga Technical University dated 29 January 2007, and further amendments to the programme were approved by Resolution No 003, adopted by the Council of the Faculty of Civil Engineering on 7 March 2008. The programme comprises a subject named "Alternative energy sources for heating of buildings".

At Riga Technical University, the Centre for Professional Continuing Education of the Faculty of Civil Engineering offers a licensed professional upgrading programme "Energy audits of buildings and constructions" (Licence No P-34 issued by the Latvian Ministry of Education and Science on 7 August 2009). The following courses are provided under the programme:

- legislation governing energy audits of buildings and constructions;
- thermal processes in microclimate engineering systems and environmental science;
- heating, hot-water supply and lighting;
- inspection of buildings and constructions;
- building envelopes;

- boilers and heating systems;
- ventilation and air conditioning;
- methods for calculating the energy performance of buildings and constructions;
- preparation of energy audit reports for buildings;
- materials increasing energy efficiency, related technologies, projects and estimates.

Cabinet Regulation No 138 and Cabinet Regulation No 382, respectively, set out qualification requirements for industrial energy auditors and independent experts in the energy performance of buildings.

At present, the number of qualified energy efficiency experts is sufficient to meet the current demand. Should the demand grow (for instance, in the SME sector), the existing system allows for quick education and certification of additional experts.

▪ 3.1.11. Energy services

Section 14 of the Energy End-use Efficiency Law sets out the basic principles of providing and financing energy services.

In Latvia, the first ESCOs started operating in 2000, delivering professional street lighting services. However, the successful fulfilment of the contracts was encumbered due to certain difficulties, mostly of a legal nature.

The development of the energy services market is impeded by the ambiguity of legal aspects pertaining to service contracts, such as title to the installed equipment, the lack of interest of energy services (district heating) companies in delivering energy services, low customer awareness about ESCO possibilities and the absence of positive examples. Therefore, a special law is being drafted to eliminate all deficiencies and stimulate the energy services market. This law will comprise a special chapter dealing with the promotion of energy end-use efficiency and energy services, which will oblige the Ministry of the Economy to publish information about available energy service contracts and clauses that should be included in such contracts, as well as model contracts and information about energy service providers and best practices.

The lack of clarity on financial aspects related to ESCO introduction is another barrier to the growth of the energy services market. These aspects include, inter alia, the division of financial savings among stakeholders and State guarantees for ESCO loans. At present, one energy services company – SIA Renesco – is successfully operating in Latvia. This company is implementing projects to renovate multi-apartment residential buildings. Detailed information can be found on http://www.renesco.lv. Other private bodies, such as SIA Latvijas namsaimnieks, SIA LATIO Namsaimnieks, etc. have also attempted to join this scheme and, for this purpose, they have concluded ESCO contracts on the renovation of several buildings. Several municipal house management authorities (MESA), including SIA Rīgas namu pārvaldnieks, also apply ESCO principles to perform renovations. As a result, in 2013 one building was renovated under the ESCO contract, and 10 more contracts were concluded.

Consultations with stakeholders, including the banking sector, on ESCO promotion are underway.

▪ 3.1.12. Energy Efficiency National Fund

The purpose of the Energy Efficiency National Fund (hereinafter – the EENF) is to support national energy efficiency initiatives across the whole end-use sector. The EENF is financed by EU funds addressing energy efficiency for the 2014 – 2020 programming period of EU funds. The possibility of delegating EU funds programme management to ALTUM/AFI is being examined as an option. The EENF could provide financing in the form of both loans and grants. The EENF must discharge the functions to comply with the requirements of Directive 2012/27/EU, including the promotion of energy services.

The existing financial institutions of Latvia do not perform the functions that are necessary to ensure compliance with Directive 2012/27/EU. The fund should facilitate the establishment of financing facilities, or the use of existing ones, for energy efficiency improvement measures to maximise the benefits of multiple streams of financing. The facility to introduce EU funds is still being under discussion.

Based on Sub-paragraph 3.2 of the Concept Order[18], the Ministry of the Economy must draw up and present the draft of the Energy Efficiency Law, which would provide for the establishment of an energy efficiency national fund. The establishment of revolving funds in cities in the form of soft loans might also be considered.

Referring to the experience of the 2007 – 2013 programming period of EU funds regarding the promotion of energy efficiency improvement measures in multi-apartment buildings, including problems with bank financing, it is essential to ensure a financing facility whereby in the following programming period, financing would be granted for the implementation of economically justifiable projects. It is therefore planned to provide support as low-interest loans and partial principal repayment subject to the achievement of a certain energy efficiency level.

Moreover, a financial facility as a funding solution to improve the energy performance of public buildings and housing is also suggested in Strategy 2030, which is a policy paper drawn up by the Ministry of the Economy.

The institutional model and conditions of the fund's operations will be provided for by the Energy Efficiency Law. The fund can be set up as a revolving fund to implement sustainable financial investment projects, providing soft loans to finance project implementation, combined with other support mechanisms depending on the energy savings attained at the end of each project.

▪ 3.1.13. Conformity of energy efficiency measures with the legal framework for State aid

[18] The Concept Order is available on http://www.mk.gov.lv/lv/mk/tap/?pid=40288015

The Information Report lists the following potential energy efficiency measures, which should be assessed in the context of State aid:

- energy efficiency measures in multi-apartment residential buildings;

- reduced rents over a certain period after the measures to enhance the energy performance of a building have been implemented;

- programmes to support energy audits (the government could cover up to 60 % of the costs of industrial energy audits);

- training measures addressing energy-efficient driving for special business categories;

- State aid to implement energy efficiency improvement measures in the industry;

- the establishment of an energy efficiency (revolving) national fund.

Both the provisions of the Law on the Control of Aid for Commercial Activity and the EU Guidelines on State aid for environmental protection and energy 2014 – 2020 will be taken into consideration when assessing the possibilities of implementing the aforementioned energy efficiency measures to attain the national indicative and binding cumulative energy savings targets.

- **3.2. Energy efficiency measures in buildings**

- **3.2.1. Building renovation strategy**

Pursuant to Article 4 of Directive 2012/27/EU, Latvia as a Member State must establish a long-term strategy for mobilising investment in the renovation of the national stock of residential and commercial buildings, both public and private (hereinafter – the Strategy).

The Strategy will encompass:

- an overview of the national building stock based, as appropriate, on statistical sampling;
- identification of cost-effective approaches to renovations relevant to the building type and climatic zone;
- policies and measures to stimulate cost-effective deep renovations of buildings, including staged deep renovations;
- a forward-looking perspective to guide investment decisions of individuals, the construction industry and financial institutions;
- an evidence-based estimate of expected energy savings and wider benefits.

The first version of the Strategy of Latvia is presented in Annex 2.

- **3.2.2. Additional measures addressing energy efficiency in buildings**

Based on the experience with renovation projects of EU funds in 2007 – 2013, further successful implementation of energy efficiency measures in buildings requires the following:

1) availability of financing for the implementation of economically justifiable projects across Latvia, including regions;

2) high quality project management and supervision;

3) results-oriented monitoring of activities, including the attainment of energy savings;

4) achievement of high energy performance and high quality construction;

5) improvement of the procedure for selecting construction companies;

6) reduction in the cost of resources.

The indicative financial allocations under the Cohesion Policy to improve national and housing energy efficiency in the following 2014 – 2020 programming period are EUR 247.86 million. Projects will be financed on the basis of activity implementation regulations that are currently in the development phase. Grants ranging from 50 % to 60 % were available to citizens in the 2007 – 2013 programming period. Meanwhile, in the 2014 – 2020 programming period, low-interest loans for renovations and principal repayment up to 35 % are planned for inhabitants of multi-apartment residential buildings subject to the achievement of a certain energy efficiency level. As a result, financing required for project implementation will be guaranteed, while at present quite a number of houses cannot obtain financing from commercial banks to implement their renovation projects.

In order to attain these targets in the 2014 – 2020 programming period of the EU funds, the following activities must be implemented:

1) to promote the services of energy consultants ("energy consultant" means a legal entity which is responsible for energy efficiency project management in multi-apartment buildings, providing the following experts: energy auditors, designers and construction supervisors who, within the boundaries of their competence, ensure that energy efficiency projects are prepared and implemented as desired by the inhabitants, in conformity with laws governing construction and the energy performance of buildings and that the planned savings level is achieved after the relevant renovation project has been completed). An energy consultant is responsible for the achievement of the intended energy efficiency level under the project by means of a bank's guarantee or insurance policy. An energy consultant must indemnify the inhabitants of the relevant multi-apartment building against the loss incurred due to the non-achievement of the energy savings target at the end of the renovation project. Consulting support is planned within the framework of the EENF;

2) to continue **educating potential tenderers and project promoters** by means of the information campaign "Dzīvo siltāk!" ("Living warmer!"), including education seminars and conferences on energy efficiency in both multi-apartment buildings and the public sector. Special guidance materials must be provided on project preparation and implementation, as well as the operation of buildings after the completion of the energy efficiency project;

3) minimum energy performance requirements for buildings (construction elements of external building envelopes and technical building systems) are to be reviewed in 2014. These requirements will be set with a view to achieving the cost-optimal balance between the investments involved and the energy costs saved throughout the lifecycle of the building.

- **3.3. Energy efficiency measures in buildings of public bodies**

- **3.3.1. Energy efficiency in public sector buildings**

Due to the implementation of Directive 2012/27/EU, Latvia must achieve the indicative national energy efficiency target according to which 3 % of the total floor area of central government buildings must be renovated each year, as laid down in Article 5 of Directive 2012/27/EU. Considering that central government buildings form part of the total final energy consumption, the fulfilment of the 3 % renovation target for central government buildings contributes to the achievement of the cumulative end-use energy savings target of 1.5 %.

Following the requirements of Article 5(5) of Directive 2012/27/EU, the Ministry of the Economy has compiled a list of buildings with a total floor area over 500 m^2 that are owned or occupied by or under the jurisdiction of public authorities. Table 11 below summarises data about the energy carriers used in 904 central government buildings. According to this table, gas is used as fuel by 192 central government buildings with a total floor area over 500 m^2, liquid fuel (diesel fuel) – 31 buildings, solid fuel – 144 buildings, mixed fuel – 23 buildings.

Table 11.

Fuel used by central government buildings with a total floor area over 500 m^2 [19]

Fuel type	**Number**
Gas	
Natural gas	192
Liquid fuel	
Diesel fuel	31
Solid fuel	
Hard coal	6
Wood, pellets, chips, grain	107
Coal, pellets	2
Wood, hard coal	29

[19] The list of buildings with a total floor area over 500 m^2 that are owned or occupied by or under the jurisdiction of public authorities is available on: http://em.gov.lv/em/2nd/?cat=30273

Other types of fuel	
Electricity	5
Heat pump	1
District heating	458
Mixed fuel	
Hard coal, natural gas	4
Natural gas, diesel fuel	1
Diesel fuel, natural gas, wood	1
Diesel fuel, wood	2
Gas, district heating	1
Gas, grain	2
Wood, district heating	1
Petroleum gas, wood	4
No heating, data unavailable	7

Table 12.
Central government buildings with a floor area over 500 m^2

CENTRAL GOVERNMENT BUILDINGS with a floor area OVER 500 m^2, of which:	**Number**	**Total area, m^2**	**Note**
Office buildings	229	513 018	
Educational establishments, educational buildings, workshops, training workshops, laboratories	191	702 639	
Residential buildings	37	73 026	
Business hotels (hostels), barracks	120	467 426	
Buildings of medical or healthcare	84	421 435	

institutions			
Office buildings with accommodation spaces	4	7 120	
Sports buildings	22	45 030	
Museums and libraries, book depositories, archives buildings, entertainment buildings	20	43 548	
Production buildings (of Latvia University of Agriculture, Ministry of Agriculture, Ministry of Justice (prisons), Ministry of Education and Science), non-residential buildings of agricultural holdings	15	27 432	
Outbuildings (laundries)	33	35 867	
Fire stations	29	29 490	
Other not elsewhere classified buildings (infirmaries, etc.)	32	41 110	
Garages	10	22 145	

Heritage buildings	140	426 819	According to Article 5(2) of Directive 2012/27/EU, Member States may decide not to set or apply the requirements referred to in paragraph 1 to the following categories of buildings: - buildings officially protected as part of a designated environment, or because of their special architectural or historical merit, in so far as compliance with certain minimum energy performance requirements would unacceptably alter their character or appearance; - buildings owned by the armed forces or central government and serving national defence purposes, apart from single living quarters or office buildings for the armed forces and other staff employed by national defence authorities; - buildings used as places of worship and for religious activities.
Buildings commissioned after 2003	66	142 479	Pursuant to Article 1(2) of Directive 2012/27/EU, the 3 % rate is calculated on the total floor area of buildings with a total useful floor area over 500 m^2 owned and occupied by the central government of the Member State concerned that, on 1 January of each year, do not meet the national minimum energy performance requirements set in application of Article 4 of Directive 2010/31/EU.
Warehouses, communication buildings	11	16 619	Irrelevant use.

Buildings used for unclear purposes	1	940	Irrelevant use.
TOTAL:	**1 044**	**3 016 143**	

Total central government buildings pursuant to Article 1(1) of Directive 2012/27/EU	**904**	**2 589 322**

- **3.3.2. Energy efficiency in buildings of other public bodies**

Latvia's National Development Plan 2014-2020 foresees the following measures related to energy efficiency in the public sector:

- development of energy plans of municipalities providing for complex measures to promote energy efficiency and switch to renewable energy (the indicative source of financing – municipal budgets);

- incorporation of energy plans of national development centres into the development plans of municipalities considering that, based on the Operational Programme "Growth and Employment" for the 2014 – 2020 programming period of EU funds, the energy performance of municipal buildings will be improved by means of investments into integrated urban development;

- development of energy efficiency programmes for public buildings owned by the central government and municipalities.

At present, there is no information available about any public bodies having developed energy efficiency action plans.

The indicative financial allocations under the Cohesion Policy to improve national and housing energy efficiency in the following 2014 – 2020 programming period are EUR 247.86 million.

- **3.3.3. Purchasing by public bodies**

Undertaken measures

Latvia has undertaken several measures to encourage the public sector to purchase energy-efficient products, services and buildings. These measures only serve as recommendations for both the central government and other public bodies.

The information report "On Recommendations for the Promotion of Green Public Procurement by State and Municipal Authorities and Recommendations for the Promotion of Green Construction" was approved by the Cabinet at the meeting of 22 December 2008 (Minutes No 94, Paragraph 92). This report encompasses a detailed document named "Recommendations for the Promotion of Green Public Procurement by State and Municipal Authorities". These recommendations have been published by the Procurement Monitoring Bureau on its website: http://www.iub.gov.lv/node/63. The recommendations contain references to procurement laws, models for including energy

efficiency criteria into the procurement conditions, as well as explanations regarding the practical application of the criteria.

The requirements as to the application of the green procurement criteria are also included in the CCFI open tender regulations.

The Law on the Energy Performance of Buildings entered into force on 9 January 2013. It is laid down in Section 7 of this Law that public buildings owned by the central government or municipalities are subject to energy certification, and energy certification may be required by the buyer or tenant of a relevant building. According to Section 13 of the Law on the Energy Performance of Buildings, energy performance certificates of public buildings owned by the central government or municipalities must be displayed in a prominent place clearly visible to the public. Owing to these provisions, the central government and municipalities are given correct information about the energy performance of buildings occupied, to be rented or bought by the public sector. As a result, strong grounds are formed for setting energy performance criteria in the purchase of buildings.

Purchasing of energy-efficient products, services and buildings at a municipal level can be facilitated by binding regulations and action plans issued by municipalities. For instance, Riga City Sustainable Energy Action Plan for 2010 – 2020, which was adopted by Riga Council's Resolution No 1644 of 6 July 2010, sets out measures for the energy efficiency of the city's lighting system, such as the replacement of existing bulbs with energy-efficient LED bulbs and the introduction of an electronic control system to reduce energy consumption. The Plan also considers the possibility of cooperating with energy service providers.

Planned measures

To meet the requirements of Article 6(1) of Directive 2012/27/EU, the public sector will be obliged to purchase only products, services and buildings with high energy-efficiency performance. This obligation will be provided for by the following laws:

1) in the case of the purchase of goods and services – draft amendments to the Public Procurement Law (VSS-1880), proclaimed at the State Secretaries' Meeting of 17 October 2013 (http://www.mk.gov.lv/lv/mk/tap/?pid=40302704);

2) in the case of the purchase of buildings - draft amendments to the Law on the Energy Performance of Buildings.

With a view to encouraging municipalities to purchase products, services and buildings with high energy-efficiency performance, the relevant recommendations will be included in the methodological recommendations drawn up by the Ministry of Environmental Protection and Regional Development for development programmes of municipalities (the Sector-specific Policy Guidance for Municipalities, Chapter 20 "Guidance in the field of energy and energy efficiency"), which should be considered by municipalities in drawing up and implementing their development programmes for 2014 - 2020.

- **3.4. Energy efficiency measures in transport**

To facilitate energy efficiency in the transport sector, reduce the importation of energy resources (e.g. fossil fuel, natural gas) and promote local energy generation, Strategy 2030 specifically addresses the promotion of RES in transport, providing for a wider use of RES in public transport, including further electrification of railway transport and the switch of public transport to biofuel and other types of green energy. The Electromobility Development Plan for 2014 – 2016[20] adopted by the Cabinet on 11 February 2014 is one of the conditions to fulfil this target.

The aforementioned Plan is based on the following three priorities: to make Latvian companies more competitive to create new industry; to increase energy independence; to reduce pollution and greenhouse gas emissions. Electromobility has considerable potential for the further economic development of Latvia because it affects multiple areas, such as environmental protection and sustainability, energy, entrepreneurship and transport. To enhance the development of electromobility, the Plan sets out specific support policy areas referring to the main elements: promotion of electric vehicles, construction of the charging station network, innovative products, as well as public education and information about electromobility.

- **3.5. Promoting of efficient heating and cooling**

- **3.5.1. Comprehensive assessment**

Latvia has set up a legal framework on the promotion of cogeneration based on a useful heat demand in the internal energy market. High-efficiency cogeneration has developed rapidly in the energy sector of Latvia since 2000. In 2012 Latvia had as much as 132 combined heat and power plants with total electrical capacity of 1 016 MW, which reported electricity output of 2 340 GWh. In 2012 combined heat and power plants generated 4 693 GWh of heat for sale, which accounted for 62.9 % of total district heating. In 2011 there were 83 combined heat and power plants with total electrical capacity of 963.4 MW.

In 2011 electricity produced from high-efficiency cogeneration amounted to 2 888 GWh, which represents 92 % of total electricity from cogeneration. Such a high rate was achieved owing to public support by means of mandatory electricity procurement (the feed-in tariff system). One of the activities in the frame of this system is the gradual replacement of existing heat generation installations with high-efficiency cogeneration units using local energy resources.

In Latvia, electricity from cogeneration is regulated by the Energy Law, the Electricity Market Law and Cabinet Regulation No 221 of 10 March 2009 "Regulation on the Production of Electricity from Cogeneration and the Related Pricing Procedure" issued according to the latter law, as well as the Law on Public Utilities Regulators and related laws and regulations.

This regulation and measures have been introduced pursuant to the requirements of Directive 2004/8/EC[21]. Considering that Directive 2012/27/EU has repealed Directive 2004/8/EC and Latvia must transpose also Article 14 of Directive 2012/27/EU

[20] http://www.mk.gov.lv/lv/mk/tap/?pid=40304985&mode=mk&date=2014-02-04

[21] Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC

into its national law by 5 June 2014, the provisions of Directive 2004/8/EC, which have been already transposed by Latvia, need to be reviewed.

According to the Concept Order, it has been decided not to exempt the installations listed in Article 14 of Directive 2012/27/EU from the requirements to assess the potential for heating and cogeneration and carry out a cost-benefit analysis.

Based on the Energy Efficiency Law which is being currently drafted, by 31 December 2015 the Ministry of the Economy must carry out and notify to the EC a comprehensive assessment of the potential for the application of high-efficiency cogeneration and efficient district heating and cooling, comprising a cost-benefit analysis. In developing policy measures to drive efficient heating and cooling, the Ministry of the Economy takes account of the outcome of the aforementioned comprehensive assessment of the potential for the application of high-efficiency cogeneration and efficient district heating and cooling.

The Cabinet will determine the procedure according to which a cost-benefit analysis must be carried out and competent authorities must take into account the outcome of this analysis. The relevant Cabinet regulations will be formulated on the basis of Annexes VIII and XI to Directive 2012/27/EU.

- **3.5.2. Other measures addressing efficient heating and cooling**

The attainment of the main target and sub-targets defined in Strategy 2030 largely depends on energy efficiency and related measures not only across all energy sub-sectors but also other industries. Therefore, Strategy 2030 sets one more target, which is the annual heat consumption in heating down by 50 % by the year 2030 against the current rate, which is nearly 200 kWh/m^2 (climate-adjusted) per year (2009 – 202 kWh/m^2). This rate has substantially decreased over the last 20 years (1990 – 304 kWh/m^2). The target is ambitious enough to bring in investments and improve the energy performance of buildings while addressing the enhancement of energy efficiency in production, which is a prerequisite for competitive success.

Bearing in mind that heat generation, including district heating, has the largest energy end-use, Strategy 2030 foresees the definition of more rigid requirements for district heating systems with respect to energy loss reduction in systems, analysing the reasonableness of investments, thereby bringing the benchmark of loss to 10 % in 2030, as well as the stimulation of the connection of new consumers to efficient district heating systems, also by restricting the installation of low-efficiency fossil-fuel autonomous heating installations in locations where district heating is available.

The objective of improving the energy efficiency of district heating systems is to boost the efficiency of heat generation, minimise heat loss in the transmission and distribution systems, as well as facilitate the replacement of fossil fuels with renewable energy sources (see Section 2.3).

Combined heat and power plants using renewable energy sources are being developed to achieve a considerable increase in the generation of electricity and heat from renewable energy, thereby helping Latvia reduce its dependence on primary energy imports.

- **3.6. Energy transformation, transmission, distribution, and demand response**

The successful introduction of a demand response system requires a detailed analysis and amendments to applicable laws.

In Latvia, the energy exchange stated operating in Latvia – a bidding area at NordPool Spot was launched to facilitate the integration of the Baltic electricity market into the Scandinavian region.

Network operators are incentivised to improve efficiency in infrastructure design and operation by means of a project named "Kurzeme Ring, 2nd Phase: 330 kV Transmission Line Grobiņa – Ventspils", which is intended to strengthen the transmission grid in the western region of Latvia (Kurzeme Ring).

It is also planned to improve links to Europe's energy backbone through active absorption of the Connecting Europe Facility, meanwhile promoting regional cooperation to agree as soon as possible on common regional projects aimed at the integration of the entire Baltic market into the EU.

Strategy 2030 sets several prerequisites and commitments for the areas of actions and measures to ensure access to efficient energy markets, stable and reasonable energy prices, as well as secure national and regional energy infrastructure in the long run:

1) to ensure flexible and secure energy supply at the national level, considering the ever-wider expansion of microgeneration and resulting changes in Latvia's energy portfolio. Energy generated in the decentralised microgeneration process can be efficiently integrated in the network only under the condition that energy supply networks are carefully supervised, their operation and development are analysed and planned, and the efficient balancing of capacities in the network is ensured;

2) to develop the capacity for evaluating the impact of the energy policy, by fully covering direct and indirect costs of the energy policy to consumers and benefits for the economy, including alternative costs and local pollution;

3) to ensure social support in the energy sector at the national level, including social support measures for certain categories of consumers to prevent energy poverty and ensure the availability of energy at an adequate and affordable price for every citizen;

4) to ensure the liberalisation of the energy market by facilitating the entry of new participants into the market, facilitating the diversification of energy supply sources and ways at the regional level, and promoting public awareness about their benefits and obligations in the open and efficient energy market;

5) to continue close cooperation with regional partners within the framework of the Baltic Energy Market Interconnection Plan and the Connecting Europe Facility (CEF), based on the principles of solidarity and mutual financial support, balancing national and regional interests for commonly beneficial solutions (e.g. the development of natural gas supply and storage infrastructure);

6) to continue integration of the Scandinavian and Baltic electricity markets within the framework of NordPool Spot, including the trade in futures/forwards, by forming a unified price area and developing economically justifiable regional interconnections, minimising rapid electricity price fluctuations, increasing market liquidity, and giving signals to the development of new capacities, including renewable energy;

7) to form an efficient and open regional natural gas market by transposing the Third Energy Package and to support diversification solutions for natural gas supplies in the Baltic region, including the development of the regional liquefied natural gas terminal,

natural gas interconnections between Poland and Lithuania and between Finland and Estonia, as well as to increase the capacities of the regional natural gas storage facility;

8) to develop market conditions only for economically justifiable regional low carbon baseload projects, abstaining from direct State aid for new baseload projects.

Minister for the Economy V. Dombrovskis

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Approved by:
State Secretary M. Lazdovskis

15 May 2014 2:12 p.m.

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