

Report on the progress made in 2015 towards implementing national energy efficiency targets for the year 2020 pursuant to Article 24(1) and Section 1 of Annex XIV to Directive 2012/27/EU

Indicative national energy efficiency target

Pursuant to Article 3 of Directive 2012/27/EU, Latvia's indicative national energy efficiency target, based on primary energy savings in 2020, is 0.670 Mtoe (28 PJ), which corresponds to final energy savings of 0.457 Mtoe (19 PJ).

Impact of the target on energy consumption in 2020

By implementing energy efficiency measures and achieving the savings in line with the indicative national energy efficiency target, primary and final energy consumption in Latvia in 2020 will be as follows:

Table 1
Latvia's indicative national energy efficiency target, expressed as the absolute level of primary and final energy consumption in 2020

	2010	2015	2020
Consumption of primary energy resources, PJ	200.5	223	225
Final energy consumption, PJ	178.5	185	187

Progress towards achieving the national energy efficiency targets for 2020

Pursuant to point (a) of Annex XIV to Directive 2012/27/EU, the indicators for the years 2014 and 2015 are shown and compared in Table 2.

Table 2
Comparative table of indicators for the years 2014/2015 pursuant to Annex XIV to Directive 2012/27/EU

No	Name of indicator	Indicator, 2014	Indicator, 2015	Increase/decrease in indicator	Unit of measurement.	Source of data
1.	Primary energy consumption	4.35	4.27	-0.08	Mtoe	Central Statistical Bureau of the Republic of Latvia (CSP)
2.	Total final energy consumption	3.98	3.90	-0.08	Mtoe	CSP
3.	Final energy consumption by sector:					
	industry (including	0.870	0.874	+0.004	Mtoe	CSP

	construction)					
	transport	1.11	1.17	+0.06	Mtoe	CSP
	Households	1.24	1.11	-0.13	Mtoe	CSP
	Services	0.61	0.59	-0.02	Mtoe	CSP
	Agriculture and forestry	0.15	0.16	+0.01	Mtoe	CSP
4.	Gross value added by sector: a) at current prices:					
	Total value added	20 910.6	21 546.6	+636.0	EUR m	Eurostat
	Industry (excluding construction)	3 506.6	3 599.0	+92.4	EUR m	Eurostat
	Construction	1 397.1	1 381.7	-15.4	EUR m	Eurostat
	Agriculture and forestry	683.0	681.2	-.8	EUR m	Eurostat
	services	15 323.9	15 884.7	+555.1	EUR m	Eurostat
	b) at comparable 2005 prices:					
	Total value added	13 963.7	14 317.6	+353.9	EUR m	Eurostat
	industry (excluding construction)	1 931.4	1 999.	+68.4	EUR m	Eurostat
	Construction	785.1	776.3	-8.8	EUR m	Eurostat
	Agriculture and forestry	601.7	610.4	+8.7	EUR m	Eurostat
	Services	10 645.5	10 931.1	+180.6	EUR m	Eurostat
5.	Disposable income of households:					
	Average per household;	930.52	996.92	+66.4	EUR/month	CSP
	Average per household member	386.91	416.50	+29.59	EUR/month	CSP
	Average per equivalent consumer	580.79	627.18	+46.39	EUR/month	CSP
6.	Gross domestic					

	product (GDP):					
	- at current prices	23 607.9	24 348.5	+740.6	EUR m	CSP
	- at comparable 2005 prices	NA			EUR m	Eurostat
7.	Electricity generation from thermal power generation					
8.	Electricity generation from combined heat and power	3 004	3 526	+522	GWh	CSP
9.	Electricity generated in power plants (in the transformation sector)	2	0	-2	GWh	CSP
10.	Heat generation from boiler houses	1 962	1 805	-157	GWh	CSP
11.	Heat generation from combined heat and power plants, including industrial waste heat	5 189	5 267	+78	GWh	CSP
12.	Fuel input for boiler houses	0.22	0.20	-0.02	Mtoe	CSP
13.	Fuel input for combined heat and power plants	0.88	0.98	+0.1	Mtoe	CSP
14.	Fuel input for power plants (in the transformation sector)	0.001	0	-0.001	Mtoe	CSP
15.	Passenger-kilometres (pkm):					
	Carriage of	15 300			Mpkm	Based on

	passengers by car					assumptions relating to the calculation of transport emissions
	Carriage of passengers by public transport	2 345	2 314	-31	Mpkm	Carriage of passengers by bus only
	Carriage of passengers by rail (including by tram)	649	591	-58	Mpkm	CSP
	Carriage of passengers by air (domestic and international)	3 318	4 110	+792	Mpkm	CSP
14.	Tonne kilometres (tkm):					
	Carriage of goods by road	13 670	14 690	+1 020	Mtkm	CSP
	Carriage of goods by rail	19 441	18 906	-535	Mtkm	CSP
	Carriage of goods by air	13	9	-4	Mtkm	CSP
15.	Population (at start of year)	2 001 468	1 986 096	-15 372	Inhabitants	CSP
16.	Population (average)	1 993 782	1 977 527	-16 255	Inhabitants	CSP

Analysis of the increase in energy consumption in specific sectors

Subparagraph (a) of Part 1 of Annex XIV to Directive 2012/27/EU provides that in sectors where energy consumption remains stable or is growing, Member States must analyse the reasons for it and attach their appraisal to the estimates. In accordance with Annex A to the reporting guidelines, changes in energy end-use by sector have been analysed by comparing statistical data on energy end-use in various end-use sectors for the years 2014 and 2015.

Total energy end-use in Latvia fell by two percentage points in 2015 compared with the previous year. The increase in the use of energy resources in 2015 was comparable to the previous year's in the transport, agriculture and forestry sector, whilst in industry the consumption of energy resources remained unchanged.

Transport

Consumption of energy resources (petroleum products, biofuel and electricity) in the transport sector grew by 0.06 Mtoe in 2015, representing a year-on-year increase of

5.5%. Road transport accounted for 84.2% of the total energy resources consumption in 2015, air transport 9.2% and rail transport 6.2%. The remainder was accounted for by inland waterways and pipeline transport. Road transport was the only sector to see a year-on-year increase in the consumption of energy resources (by 7.8 percentage points), other sectors of transport seeing a decrease, with air transport seeing a 2.4% fall and rail transport 4.3%. The road sector's y/y increase in consumption is attributable to a 7.5% increase in road haulage and a 3.2% rise in the number of cars registered.

Industry

In 2015 industry saw a year-on-year increase of 0.004 Mtoe or 0.5% compared with 2014. An increase in consumption was observed in 2015 in four sectors: metal products (NACE Rev. 2, 24.1-24.3, 24.51, 24.52), where consumption of energy resources increased from 0.001 Mtoe to 0.014 Mtoe, manufacture of wood and of products of wood and cork, except furniture, manufacture of articles of straw and plaiting materials (NACE Rev. 2 16), where consumption increased by 6.4%, a 6.25% increase observed in the manufacture of rubber and plastic products, manufacture of furniture and other products (NACE Rev. 2, 22, 31, 32), and an 8.4% increase in the construction sector.

Agriculture and forestry

Energy consumption in the agriculture and forestry sector increased slightly in 2015 (+0.01 Mtoe) compared with 2014. This slight increase is attributable to the increase in diesel consumption in this sector (7.8%) and the 1.6% increase in areas under cultivation compared with 2014.

Information on major legislative and non-legislative measures

In accordance with sub-paragraphs (b) to (d) of Annex XIV to Directive 2012/27/EU, information is given here on major legislative and non-legislative measures implemented last year (2016).

1. Laws and regulations promoting improved energy efficiency

- a) On 29 March 2016 the **Law on energy efficiency**¹ entered into force. The law aims to ensure the rational use and management of energy resources and to promote sustainable economic development and limit climate change.
- b) On 29 March 2016 the **Amendments to the Law on energy**² entered into force. The aim of these amendments is to ensure that a number of the requirements of Directive 2012/27/EU are transposed in respect of effective heat supply systems and co-generation, by providing for the delegation of authority for implementing the Cabinet Regulation on the methodology for calculating the primary energy saving of co-generation, and by defining the supply of district heating, local heating and individual heating.
- c) On 29 March 2016 the **Amendments to the Law on public procurement**³ came into force. These transpose the requirements of Article 6 of Directive

¹ <https://likumi.lv/doc.php?id=280932>

² <http://likumi.lv/ta/id/280931-grozijumi-energetikas-likuma>

³ <http://likumi.lv/ta/id/280938-grozijumi-publisko-iepirkumu-likuma>

2012/27/EU, ensuring that State institutions procure energy-efficient products and services.

- d) On 5 April 2016 the **Amendments to the Law on the energy performance of buildings**⁴ came into force. These amendments basically aim to ensure that central government institutions procure and lease only buildings that are highly energy-efficient.
- e) On 22 June 2016 the **Amendments to the Law on the electricity market**⁵ entered into force. These are designed to ensure that the definition of the term "aggregator" provided in Directive 2012/27/EU is transposed and to provide a legal framework for demand response and aggregator operations on the energy market. The draft law lays down that the transmission system operator responsible for managing energy flows must take into account the load procured when using the demand response service, which it procures as an ancillary service from various sources, including aggregators.
- f) 17 May 2016 saw the adoption of Cabinet Regulation No 294 **on the procedure for calculating the primary energy savings of cogeneration stations**⁶, the purpose of which is to establish a methodology for calculating the primary energy savings of cogeneration stations.
- g) 19 April 2016 saw the adoption of Cabinet Regulation No 243 on **energy efficiency requirements for district heating systems in the possession of a licensed or registered energy supply trader and procedures for checking their conformity**⁷, which sets out the energy efficiency requirements for district heating systems in the possession of a licensed or registered energy supply trader and procedures for checking their conformity.
- h) 26 July 2016 saw the adoption of Cabinet Regulation No 487 on **company energy audits**⁸. This sets out the procedure governing the energy audits of companies, the qualification requirements applicable to an energy auditor (legal person) and the arrangements for certifying competence, the arrangements for certifying energy auditors and their liability, the arrangements for registering an energy audit report, and the arrangements for expanding an environmental management system and for attesting to such expansion, the institutions authorised to carry out such expansion and the standard applicable to the certification of an environmental management system.
- i) 11 October 2016 saw the adoption of Cabinet Regulation No 668 on **the monitoring of energy efficiency and the applicable energy management system standard**⁹, which sets out the arrangements and structure of the procedure governing the operations relating to a State energy efficiency management system, the procedure whereby a central or local government body notifies the introduction of an energy management system, certification, notification deadlines, the contents of a notification and of supporting documents, and how notifications about the energy savings made as a result of

⁴ <http://likumi.lv/ta/id/281087-grozijumi-eku-energoefektivitates-likuma>

⁵ <https://likumi.lv/ta/id/282649-grozijumi-elektroenerģijas-tirgus-likuma>

⁶ <https://likumi.lv/ta/id/282203-kogenerācijas-stacijas-sarazotas-primāras-enerģijas-ietaupījuma-apreķināšanas-kartība>

⁷ <https://likumi.lv/ta/id/281914-noteikumi-par-energoefektivitates-prasibam-licenceta-vai-registreta-energoapgades-komersanta-valdījuma-esosam-centralizētām>

⁸ <https://likumi.lv/ta/id/283807-uznemumu-energoaudita-noteikumi>

⁹ <https://likumi.lv/ta/id/285878-energoefektivitates-monitoringa-un-piemerojama-energoaparvaldības-sistemas-standarta-noteikumi>

introducing an energy management system are made. In respect of major companies or major electrical energy consumers, a procedure is established for notifying the introduction of an obligatory energy audit or the introduction of a certified energy management system or environmental management system in addition to statutory requirements, and proposed energy performance enhancement measures. The Regulation sets out the arrangements whereby a party responsible for an energy efficiency obligation scheme notifies an energy saving.

- j) 11 October 2016 saw the adoption of Cabinet Regulation No 669 **on the procedure governing the conclusion and monitoring of voluntary agreements to improve energy efficiency**¹⁰, which sets out the terms and conditions governing voluntary agreements to improve energy efficiency, and the contents, deadlines and the monitoring of compliance with such agreements.

2. Implementation of energy efficiency measures

Public funding for projects aimed at improving energy efficiency was allocated from the European Union Structural Funds (the European Regional Development Fund [ERDF] and the Cohesion Fund [CF]), from the State budget programme "Climate change financial instrument "(KFPI) and from other financial instruments.

Funding to improve the heat insulation of multi-apartment residential buildings and social housing comes from the European Union Structural Funds (ERDT), which are managed by the Ministry of the Economy, whilst measures to increase the efficiency of district heating supply systems were financed from the Cohesion Fund. Funding for improving the energy efficiency of buildings owned by the State and local authorities, registered traders and private individuals and for improving the energy efficiency of technological equipment for manufacturing came from the KPFI, a programme financed from the State budget and managed by the Ministry of Environmental Protection and Regional development (VARAM).

a) Implementation of ERDF and CF projects

Implementation of ERDF and CF projects managed by the Ministry of the Economy continued in 2015 under the following "Infrastructure and services" activities of the European Structural Fund operational programme:

- Activity 3.4.4.1 of the Programme Complement "Measures to improve the heat insulation of multi-apartment residential buildings". These projects involve construction work in those parts of multi-apartment residential buildings jointly owned by the owners of the apartments in the building: this is done to ensure restoration of the structural components of the building, as provided for in the technical design or simplified renovation documentation, and to carry out works under the energy efficiency improvement measures referred to in the building's energy audit report.

In all, 740 projects have been completed with EUR 63.21 million worth of ERDF funding. Investment in the heating of homes has been effective, the

¹⁰ <https://likumi.lv/ta/id/285879-kartiba-kada-nosledz-un-parrauga-brivpratigu-vienosanos-par-energoefektivitates-uzlabosanu>

average heat energy saving after renovation being 43%. In these projects, the average period of return on investment is around 22 years.

- Activity 3.4.4.2 of the Programme Complement "Measures to improve the heat insulation of social housing". The programme aims to increase the energy efficiency of social housing owned by local authorities, improve the quality and sustainability of social housing and ensure that groups in society at risk of social exclusion have access to suitable housing.

Under this part of the programme, 55 projects have been implemented for a total of EUR 5.16 million.

- Sub-activity 3.5.2.1.1 "measures to increase the efficiency of district heating supply systems". The aim of the programme is to make the production of heat energy more efficient, reduce heat energy losses in transmission and distribution systems and facilitate the replacement of fossil fuels with renewable fuels.

During the 2007-2013 planning period 131 projects were completed with CF funding of EUR 71.53. As a result of project implementation, 286.7 MW of heat output was installed and 149 km of the heating network reconstructed.

Detailed information on the implementation of ERDF and CF projects is available at: <http://em.gov.lv/em/2nd/?cat=30252>

b) Implementation of the KPFI State budget programme

KPFI aims to help prevent global climate change and help adapt to its effects, achieve a reduction in greenhouse gas emissions (for instance, by implementing measures in both the public and the private sectors aimed at improving the energy efficiency of buildings, developing and introducing technologies that make use of renewable energy sources, and implementing integrated solutions for reducing greenhouse gas emissions).

Tender projects under the KPFI State budget programme managed by VARAM continued to be implemented in 2015:

- The call for tenders "Complex solutions for the reduction of greenhouse gas emissions" supports investment projects aimed at improving the energy efficiency of buildings owned by the State and local authorities, registered traders and private individuals and investment in technological equipment for manufacturing and for utilising renewable sources of energy. For the purposes of this report the projects are grouped as follows: increasing energy efficiency in vocational school buildings, increasing energy efficiency in tertiary education institution buildings, increasing energy efficiency in production buildings and facilities, increasing energy efficiency in municipal buildings and institutes of education and installing smart electrical energy meters.
- The call for tenders "Buildings with low energy consumption" supports the construction of buildings with low energy consumption and the reconstruction or basic renovation of existing buildings. This enables energy consumption in such buildings to be reduced.
- The call for tenders "Reduction of carbon dioxide emissions from lighting infrastructure in local authority public spaces" supports the reduction of greenhouse gas emissions from lighting infrastructure in local authority public spaces through the application of technology and environmentally friendly techniques that enable a reduction in electricity consumption.

More detailed information on calls for tenders under the KPFI at www.varam.gov.lv un www.lvif.gov.lv.

c) "Warmer living" information campaign¹¹

At the initiative of the Ministry of the Economy, on 25 February 2010, 18 public entities, NGOs and banks signed a memorandum of cooperation on establishing effective and open cooperation when providing information about housing renovations. By 31 December 2016 the Memorandum had been signed by 39 organisations (eight more having joined in the space of a year). The Memorandum's main purpose is to ensure that information on housing renovations is generally accessible. This means:

- fostering mutual cooperation/learning between sectoral associations to ensure the dissemination of up-to-date information relevant to the sector;
- ensuring that information is available on issues relating to the management and operation of multi-apartment residential buildings;
- ensuring that apartment owners have access to information on sources of funding for housing renovations;
- publicising the benefits of housing renovations;
- educating people about the conditions that need to be fulfilled to ensure that renovations are carried out to a high standard;
- informing people about quality standards for building materials and of the technologies that utilise them;
- facilitating access to high-quality services by providing the public with up-to-date information on the sector.

Between 2010 and 2017, 11 cycles of workshops were held in regions throughout Latvia, along with a number of information events (discussions, seminars for building administrators and designers, conferences and participation in exhibitions (at least 235 events)).

In 2016 a conference was organised entitled "Aid to improve the energy efficiency of multi-apartment residential buildings"; during the spring and autumn, two cycles of seminars were organised in conjunction with the "Altum" Development Financial Institution on assistance from the EU funds for improving the energy efficiency of multi-apartment dwellings (32 seminars in all), and in parallel with these measures eight seminars were organised in the regions on the latest energy efficiency requirements for businesses and local authorities. Two seminars were also organised aimed at designers and construction companies on the qualitative refurbishment of housing. A booklet was produced called "Step-by-step housing renovation". In autumn 2016 the "Māja.Dzīvoklis" foundation had a "Warmer living" stand for four days, at which interested parties could meet with representatives from the Ministry of the Economy, Altum, the State Fire and Rescue Service and the energy efficiency centre AS "Latvernergo". Over that period, 900 interested people visited the stand. In December 2016 Jelgava Technical College organised a seminar entitled "Plaster facades and the installation of windows, a practical guide". In conjunction with Altum and SIA "Rīgas namu pārvaldnieks", seminars were organised in Riga on EU aid for improving the energy performance of multi-apartment buildings.

¹¹ https://www.em.gov.lv/lv/es_fondi/dzivo_siltak/

d) "Latvia's most energy efficient building 2016" competition¹²

The competition entitled "Latvia's most energy efficient building" competition is organised by the Ministry of the Economy in conjunction with VARAM and the trade journal "Būvinženieris" as part of the "Warmer living" information campaign. The aim of the competition is to encourage good energy efficiency practices through the construction of energy-efficient buildings or the renovation and reconstruction of buildings to make them energy-efficient and thereby reduce the amount of carbon dioxide in the atmosphere, raise public awareness about building heat insulation and the importance of and opportunities for reducing greenhouse gas emissions to create a high-quality and architecturally expressive living environment.

Leading NGOs in the building sector (the Latvian Union of Construction Engineers, the Latvian Association of Consulting Engineers, the Latvian Association of Builders, the Latvian Association of Building Managers and Operators, the Association of Technical Experts, the Latvian Union of Thermal, Gas and Water Engineers, the Sustainable Building Council, the Latvian Association of Door and Window Manufacturers, Riga Technical University, the Association of Building Material Producers and a number of individual firms) were involved in laying down the rules of the competition and evaluating submissions.

For the "Latvia's most energy efficient building 2016" competition, 33 projects were submitted in four categories (renovated multi-apartment dwelling; new multi-apartment dwelling; public building; industrial building). The competition's closing event honoured not just the competition winners but the competition organisers, the members of the jury and all promoters of energy efficiency.

The results of all the above-mentioned competitions are available on the Ministry of the Economy's website¹³.

List of buildings owned, managed or used by the State

In accordance with Article 5(5) of Directive 2012/27/EU, each year the Ministry of the Economy draws up a list of buildings owned, managed or used by the State and publishes it on its website¹⁴.

- 1) According to the list of buildings, as of 1 January 2017 the 3% renovation target for 2017 corresponded to an area covering 59 980.10 m².
- 2) According to the list of buildings, as of 1 January 2016 the 3% renovation target for 2016 corresponded to an area of 66 175.41 m².
- 3) According to the list of buildings, as of 1 January 2015 the 3% renovation target for 2015 corresponded to an area of 74 908.00 m².
- 4) According to the list of buildings, as of 1 January 2014, the 3% renovation target for 2014 corresponded to an area of 77 679 m².

The floor area in 2015 was greater than the 3% renovation target calculated for 2014. In accordance with Article 5(3) of Directive 2012/27/EU, therefore, Latvia was

¹² <http://www.energoefektivakaeka.lv/>

¹³ <http://www.energoefektivakaeka.lv/index.php/vesture/eee2013>

¹⁴ https://www.em.gov.lv/lv/nozares_politika/majokli/eku_energoefektivitate/no_direktivas_2012_27_es_par_energoefektivitati_i_zrietasas_prasibas/

allowed to count this excess renovated area towards the renovation rate for the following years, i.e. fully for the 2015 and 2016 rates and partially for the 2017 rate.

$$232\,635\text{ m}^2 - 77\,679\text{ m}^2\text{ (2014 target)} = 154\,956\text{ m}^2$$

$$232\,635\text{ m}^2\text{ (area renovated in 2014)} - 77\,679\text{ m}^2\text{ (2014 target)} - 74\,908\text{ m}^2\text{ (2015 target)} - 66\,175.41\text{ m}^2\text{ (2016 target)} = 13\,872.59\text{ m}^2\text{ (included in 2017 target)}$$

$$59\,980.10\text{ m}^2\text{ (2017 target)} - 13\,872.59\text{ m}^2\text{ (remainder of area renovated in 2014)} = \mathbf{42\,107.51\text{ m}^2}$$
 (total area actually scheduled for renovation in 2017)

To be precise, the additional total surface area of central government buildings renovated in 2015 was 136 155.30 m².

$$136\,155.30\text{ m}^2 - \mathbf{42\,107.51\text{ m}^2}$$
 (planned total area for renovation in 2017) = **94 047.79 m²** (total renovated area to be counted towards implementation of the 2018 and 2019 targets).

Energy savings achieved through the application of the national energy efficiency obligation scheme or alternative measures

In accordance with Article 7 of Directive 2012/27/EU, the cumulative energy saving target set for Latvia in the period up to 2020 is 9 896 GWh.

Since Latvia had still not introduced an energy efficiency obligation scheme as of 2016, it is not possible to show any energy savings achieved under an energy efficiency obligation scheme in this report.

According to the Report on compliance with Article 7 of Directive 2012/27/EU of 25 October 2017 on energy efficiency, amending Directive 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, the following alternative measures are planned:

Table 3
Planned energy savings from main alternative measures and funding earmarked under support programmes

No	Title of alternative measure	Implementation period	Planned funding (LVL million)	Calculated accumulated energy saving (GWh)
1.	Programmes, financed from the EU funds and scheduled for the 2014-2020 planning period, for the purpose of improving the energy efficiency of multi-apartment residential buildings, central and local government buildings and small- and	2014-2020	227 (EUR 323 million)	1 690

	medium-sized enterprises.			
2.	Activity 3.4.4.1 'Measures to improve the heat insulation of multi-apartment residential buildings', implemented under Measure 3.4.4. 'Energy efficiency of housing' of the Complement to the EU Structural Funds Operational Programme 'Infrastructure and services' for 2007-2013	2014-2015	0.418 (EUR 0.595 million) (funding requested for projects currently being evaluated)	1 050
3.	Agreement between the local authority and registered traders on improving energy efficiency in accordance with Cabinet Regulation No 555 of 12 July 2011 on procedures for concluding and monitoring agreements on improving energy efficiency	2014-2020	In accordance with local authority development plans	150
4.	Modernisation of AS Pasažieru vilciens rolling stock.	2014-2020	108.0 (EUR 153.67 million) (indicative)	31
5.	KPFI instrument 'Complex solutions for the reduction of greenhouse gas emissions', round 3	2014-2015	13. 607 (EUR 19.361 million)	386
6.	KPFI instrument 'Reduction of greenhouse gas emissions from lighting infrastructure in local authority public spaces', round 3	2014	0.729 (EUR 19.361 million)	130
	TOTAL:		349.755 (EUR 497.657 million)	3 437

The alternatives have also been included in the "plan for alternative energy efficiency measures to achieve the final energy consumption objective between 2014-2020", which has been submitted to the Cabinet of Ministers for approval.

In 2015, energy savings were recorded and calculated for individual projects implemented under the alternative measures.

The energy savings were calculated using an ex-post method and are based on recording the object's energy consumption before and after implementation of the measure. The project recording and monitoring system set up by the authorities responsible for implementing the projects also provides a way of checking energy saved under a project, should this prove necessary.

Only the projects with the first recorded energy saving in 2014 and then in 2015 are taken into account for calculation of the energy savings. The energy saving for individual activities is calculated based on reports submitted by the relevant authorities on projects implemented and results achieved.

Table 4
Energy savings achieved in 2014/2015 and the cumulative saving for 2020

Measure	New saving in 2014, GWh	New saving in 2015, GWh	Cumulative saving for 2020, GWh	Comments
KPFI instrument 'Reduction of greenhouse gas emissions from lighting infrastructure in local authority public spaces', round 3	4.3	5.2	61	Measure run time in light-bulb hours: at least 25 000 hours.
KPFI instrument 'Complex solutions for reducing greenhouse gas emissions' (KPFI – 7)	15		105	Run-time of measure: at least 7 years.
KPFI instrument call for proposals "Complex solutions for reducing greenhouse gas emissions in the buildings of government and local authority vocational training buildings" (KPFI – 5)	9		63	Run-time of measure: at least 7 years.

KPFI instrument, Call for proposals "Enhancing energy efficiency in institutes of tertiary education" (KPFI-3)	6		42	Run-time of measure: at least 7 years.
KPFI instrument, Call for proposals "Low-energy-consumption buildings" (KPFI – 10)	9.1		64	Run-time of measure: at least 7 years.
KPFI instrument, Installation of smart electrical energy meters	0.34		0.7	Run-time of measure: 2 years.
KPFI instrument, Call for proposals "Complex solutions for reducing greenhouse gas emissions" (KPFI-15)	47.2	58.2	680	Run-time of project: at least 7 years.
KPFI instrument, Call for proposals "Complex solutions for reducing greenhouse gas emissions in production facilities" (KPFI – 6)	13.3		93	Run-time of measure: at least 7 years.
KPFI instrument, Call for proposals "Enhancing energy efficiency in municipal buildings" (KPFI – 1)	2.1		15	Run-time of measure: at least 7 years.
Renovation of government-owned buildings from State aid programmes	2.7		19	Run-time of measure: at least 7 years.
"Infrastructure and services"	23	23.3	301	Run-time of measure: at

operational programme, supplementary priority 3.4. "Securing a quality environment for living and economic activity", measure 3.4.4. "Energy-efficient housing", activity 3.4.4.1. "Measures to improve the heat insulation of multi-apartment residential buildings", and "Infrastructure and services" operational programme, supplementary priority 3.4. "Securing a quality environment for living and economic activity", measure 3.4.4. "Energy efficient housing" , activity 3.4.4.2. "Measures to improve the heat insulation of social housing"				least 7 years.
Total	132	86.7	1 444	

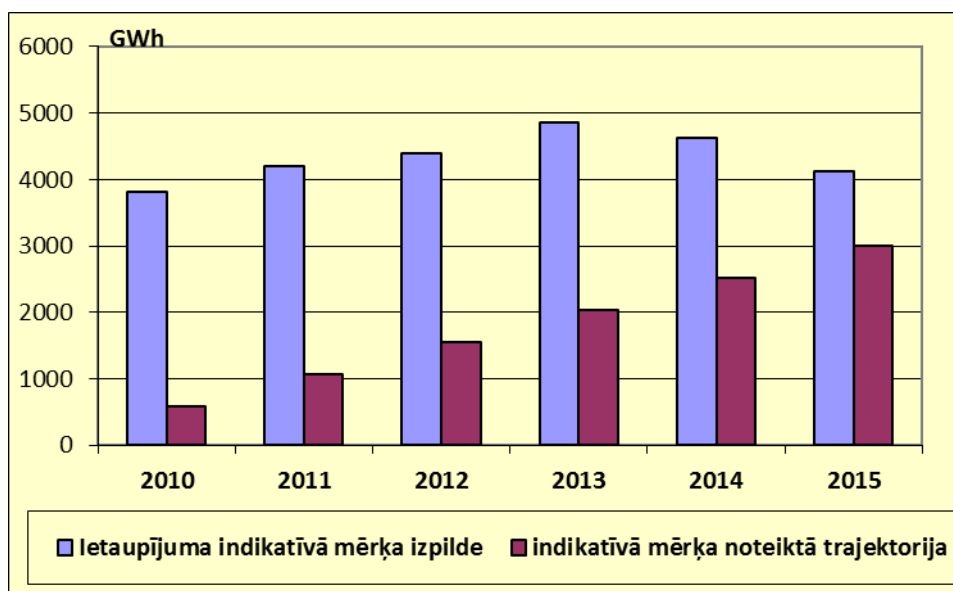
The cumulative energy saving by 2020 in the years 2014 and 2015 from the introduction of alternative energy improvement measures is **1 444.0 GWh, or 14.6% of the obligatory cumulative target (9 896 GWh).**

Calculated energy savings to achieve the indicative savings target for 2016¹⁵

Latvia's First Energy Efficiency Action Plan for 2008-2010 calculated and set an indicative final energy consumption savings target of 9%, or 3 483 GWh. The energy

¹⁵ Indicative target set in accordance with the requirements of Directive 2006/32/EC, and its implementation is binding until 2016.

saving calculated for 2015 (4 127.0 GWh, cf. fig. 1) exceeds the indicative trajectory value for achieving the total energy consumption savings of 9% by 18% in 2016 and by 37.5% in 2015. This saving does not take account of the negative savings recorded in some branches of the industrial sector. Approximately 23% of total energy savings in 2015 were assessed using a bottom-up calculation method.



Key to figure reads "Implementation of indicative savings target; Trajectory of indicative target".

Fig 1 *Calculated total final energy consumption saving 2010-2015 in accordance with the requirements of Directive 2006/32/EC*