

LITHUANIAN ENERGY AGENCY

**2019 LITHUANIAN REPORT ON THE  
PROGRESS ACHIEVED TOWARDS  
NATIONAL ENERGY EFFICIENCY  
TARGETS**

**2021, Vilnius**

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## 1. Executive summary

The 2019 Report on the progress achieved towards national energy efficiency targets (hereinafter ‘the Report’) provides a basis for monitoring the progress made by the country in achieving the national energy efficiency targets for 2020.

The Report was drawn up using official statistics supplied by Statistics Lithuania, which coordinates the drawing up of the country’s official statistics, and by other government institutions and bodies, companies and organisations.

The Report contains data for 2018 and 2019 on Lithuania’s economic and energy indicators, general trends in primary and final energy consumption and energy consumption in the transport sector, data on the major legislative and non-legislative measures implemented in 2020 which contribute towards the achievement of the national energy efficiency targets for 2020, and information on the compliance of State-owned buildings with energy performance requirements.

The Report examines the following energy efficiency improvement measures:

- Taxes and excise duties on fuel;
- Renovation of multi-apartment buildings;
- Renovation of public buildings;
- Energy audits of industrial enterprises;
- Agreements with energy suppliers on consumer education and consultancy;
- Energy saving agreements with energy undertakings;
- Energy audits of industrial enterprises;
- Renewal of the public transport fleet through the acquisition of new clean vehicles;
- Energy saving measures implemented under the Climate Change and the Lithuanian Environmental Protection Investment Fund Programmes
- Replacement (modernisation) of heat production facilities in the household sector.

Measures coming under the policy of increasing energy efficiency receive funding from EU Structural Funds, the Lithuanian State budget or private sources.

The total quantity of energy saved **up to 2020** as a result of all measures deployed from 2014 to 2019, calculated by summation (cumulative method), is **11 500.92 GWh**. The quantities of energy saved by Lithuanian programmes/measures to improve energy efficiency are shown in Table 1.1. The quantities of energy saved are detailed in Section 8 of the Report ‘Energy saved using alternative measures’.

*Table 1.1 Quantities of energy saved in Lithuania according to 2019 data, GWh*

Measure	Projected cumulative savings in 2020 from measures deployed in the period 2014-2019
	2014–2020
Renovation of multi-apartment buildings	2 971.08
Tax and excise on fuel <sup>1</sup>	4 626.04
Renovation of public buildings	573.70
Energy education and consultancy agreements <sup>1</sup>	392.77
Energy saving agreements with energy undertakings	1 653.61
Renewal of the public transport fleet	6.51
Energy saving measures implemented under the Climate Change and the Lithuanian Environmental Protection Investment Fund Programmes <sup>2</sup>	1 165.61
Replacement (modernisation) of heat production facilities in the household sector.	111.6

<sup>1</sup> Duration of measure - one year

<sup>2</sup> The figure supplied has changed as a result of the fact that the renewal of the public transport fleet is now accounted for as a separate measure and Lithuania’s 2021 long-term renovation strategy has been assessed on the basis of data from an official representative source.

Measure	Projected cumulative savings in 2020 from measures deployed in the period 2014-2019
	2014–2020
<b>Total:</b>	<b>11 500,92</b>

Lithuania's improving economic and energy productivity indicators (€4 897/kgoe according to EUROSTAT data) and the steady convergence of its energy efficiency level with the EU average is having a positive impact on the country's competitiveness at regional and global level and is helping to enhance the effectiveness of the country's energy consumption and reduce environmental pollutants and greenhouse gases.

## 2. Basic 2019 economic and energy indicators

Statistical information for Lithuania for 2018-2019 relating to efficient energy consumption is shown in Table 2.1 of this Report.

*Table 2.1 Lithuanian statistical indicators 2018-19.*

Indicator (measure)	in 2018 <sup>3</sup>	in 2019	Difference	Evolution Pct.
Quantity of primary energy consumed (total gross domestic consumption) (ktoe)	7 712.9	7 784.3	71.4	0.93
Total quantity of final energy consumed (ktoe)	5 574.1	5 583.5	9.4	0.17
Quantity of final energy consumed:	—	—	—	—
— by industry (ktoe)	1 062.1	1 069.6	7.5	0.71
— by transport (ktoe)	2 208.4	2 284.4	76	3.44
— by the services sector (ktoe)	651.3	627	-24.3	-3.73
— by households (ktoe)	1 499.7	1 447.7	-52	-3.47
Total gross value added at current prices:	—	—	—	—
— in the industrial sector (€ million) (Sections B_E according to NACE 2)	8 719	9 106	387	4.44
— in the services sector (€ million) (Sections G_T under according to NACE 2)	27 812	29 952	2 140	7.69
<i>That figure includes:</i>				
— in the transport and storage sector (€ million) (Section H according to NACE 2)	4 950.3	5 592.8	6 42.5	12.98
— in households <sup>[4]</sup> (€ million) (Section T according to NACE 2)	38.9	45.1	6.2	15.94
Total disposable income of households at current prices (€ million)	27 178	30 362	3 184	11.72
Value of gross domestic product at current prices (€ million)	45 264	48 797	3 533	7.81

<sup>3</sup> Data provided by Statistics Lithuania by letter ref. SD-116 of 28 February 2020.

<sup>4</sup> Activities of households as employers; undifferentiated goods and services producing activities of households for own use

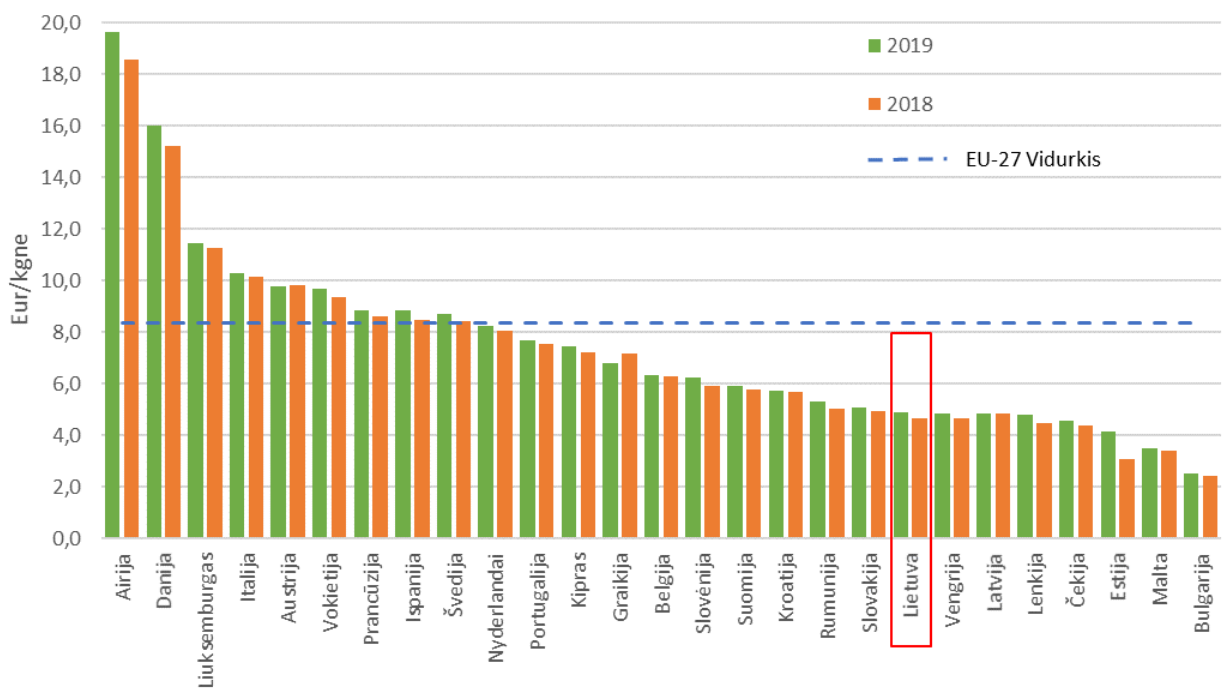
Indicator ( <i>measure</i> )	in 2018 <sup>3</sup>	in 2019	Difference	Evolution Pct.
Quantity of electricity generated in heat and cogeneration plants:	—	—	—	—
— electricity ( <i>MWh</i> )	1 089 213	1 210 488	121 275	11.13
— heat ( <i>MWh</i> )	3 726 853	3 328 550	-398 303	-10.69
Quantity of heat produced in industrial facilities using chemical process methods ( <i>MWh</i> )	3 131 166	3 064 993	-66 173	-2.11
Quantity of fuel used:	—	—	—	—
— in electric power stations to produce electricity and heat ( <i>ktoe</i> )	487.8	453.9	-33.9	-6.95
— heat generated in boiler houses ( <i>ktoe</i> )	591.8	554.4	-37.4	-6.32
Number of passenger kilometres (‘000 <i>pkm</i> )	5 129 709	4 859 173	-270 536	-5.27
Number of tonne kilometres (‘000 <i>tkm</i> )	54 904 704	69 629 280	14 724 576	26.82
No of combined transport kilometres ( <i>pkm</i> + <i>tkm</i> )	60 034 413	74 488 453	14 454 040	24.08
Annual average number of inhabitants ( <i>units</i> )	2 828 403	2 794 137	-34 266	-1.21

As laid down in the Description of the Procedure for monitoring energy resources and energy efficiency, approved by Government Resolution No 332 of 30 March 2016 approving the Description of the Procedure for monitoring energy resources and energy efficiency, explanations must be provided for sectors in which energy consumption is stable or rising, and for this reason an analysis for industry and transport is provided in the following Sections of this Report.

### 3. Primary and final energy consumption

Lithuania’s economic and energy indicators improved in 2019. This is reflected in the energy productivity indicator (total energy efficiency indicator), which in 2018 was the best among the Baltic countries, reaching €4.67/kgoe, (compared to €4.897/kgoe in 2019). The energy productivity indicator reflects the country’s energy efficiency and makes it possible to decouple energy consumption from the country’s economic growth. It shows how many goods and services were created in the country with a specific quantity of energy (ratio of euro to specific quantity of energy in kgoe) (Figure 3.1). The average energy productivity for all 27 EU Member States is €8.358/kgoe, i.e. €3.461/kgoe more than that of Lithuania.

(Figure 3.1) Energy productivity in EU Member States in 2018-2019



Source: EUROSTAT 19-3-2021

[Fig. 3.1 reads :

EU 27 average

X axis, left to right:

Ireland

Denmark

Luxembourg

Italy

Austria

Germany

France

Spain

Sweden

Netherlands

Portugal

Cyprus

Greece

Belgium

Slovenia

Finland

Croatia

Romania

Slovakia

Lithuania

Hungary

Latvia

Poland

Czech Republic

Estonia

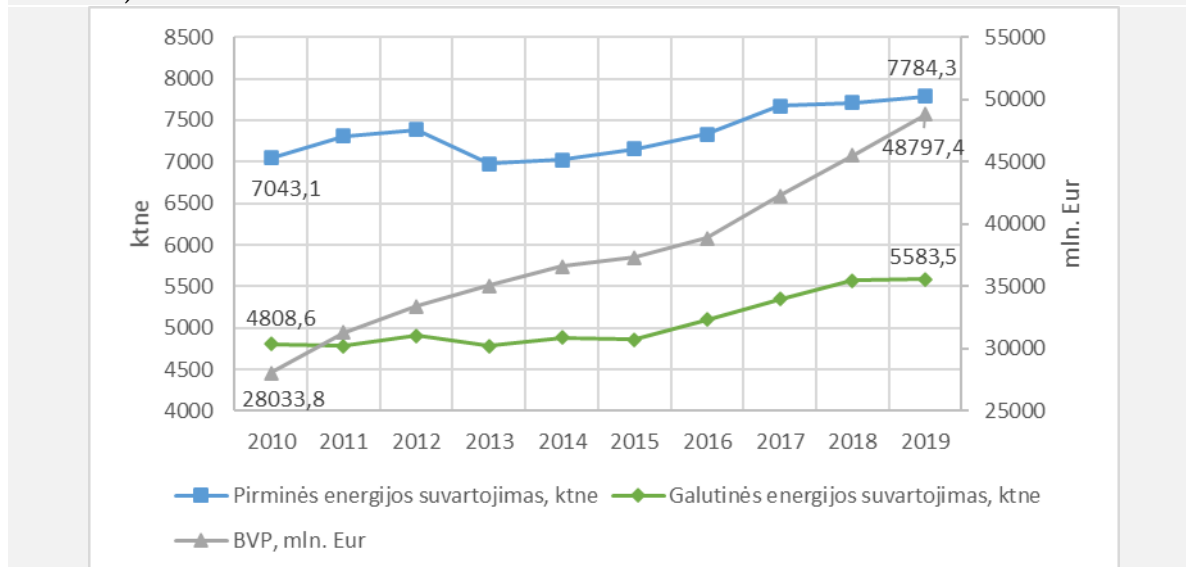
Malta

Bulgaria]

In the period 2010-2019, primary and final energy consumption changed little (primary energy use increased by 10.52% (from 7 043.1 ktoe to 7 784,3 ktoe) and final energy by 16.12% (from 4 808.6 ktoe to 5 583.5 ktoe)), whereas the country's GDP increased over this period by 74.07% (from €28 033.8<sup>5</sup> million to €48 797.4 million).

The country created more goods and services in 2019 compared to 2010 using only a slightly higher quantity of energy (Figure 3.2).

**(Figure 3.2) Primary and final energy consumption (ktoe) and domestic GDP (€ million)**



**Source: Statistics Lithuania**

[Key to fig 3.2 reads:

Blue: Primary energy consumption

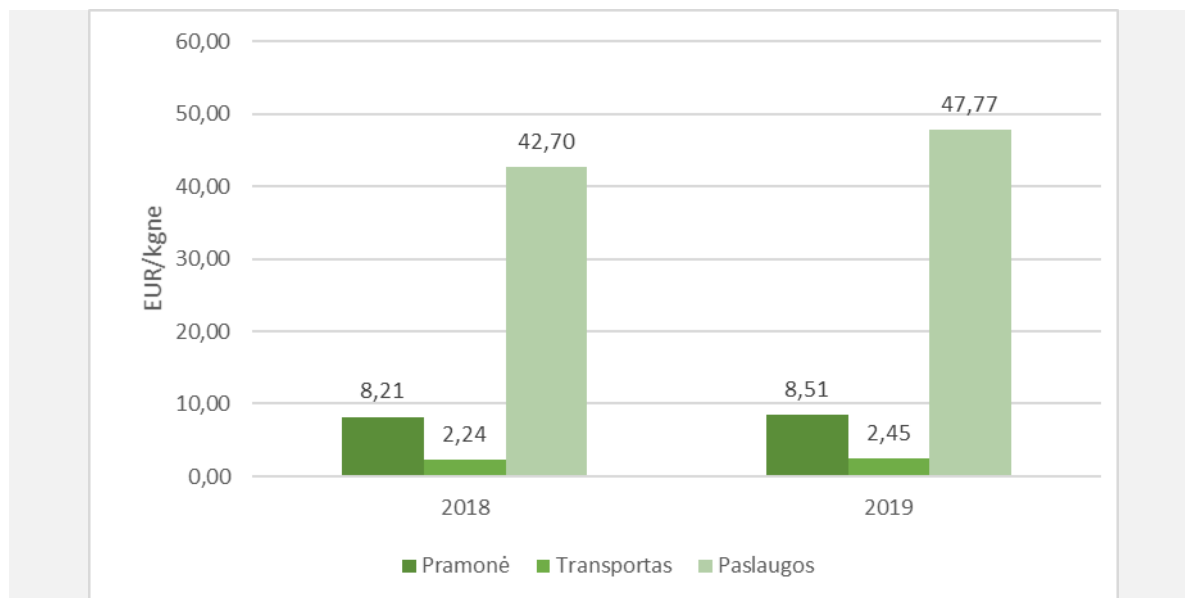
Green: Final energy consumption

Grey: GDP (EUR million)]

Figure 3.3 illustrates the productivity for different energy sectors and shows changes over the 2018-2019 period.

**(Figure 3.3) Energy productivity in Lithuania in the main sectors (2018-2019), €/kgoe**

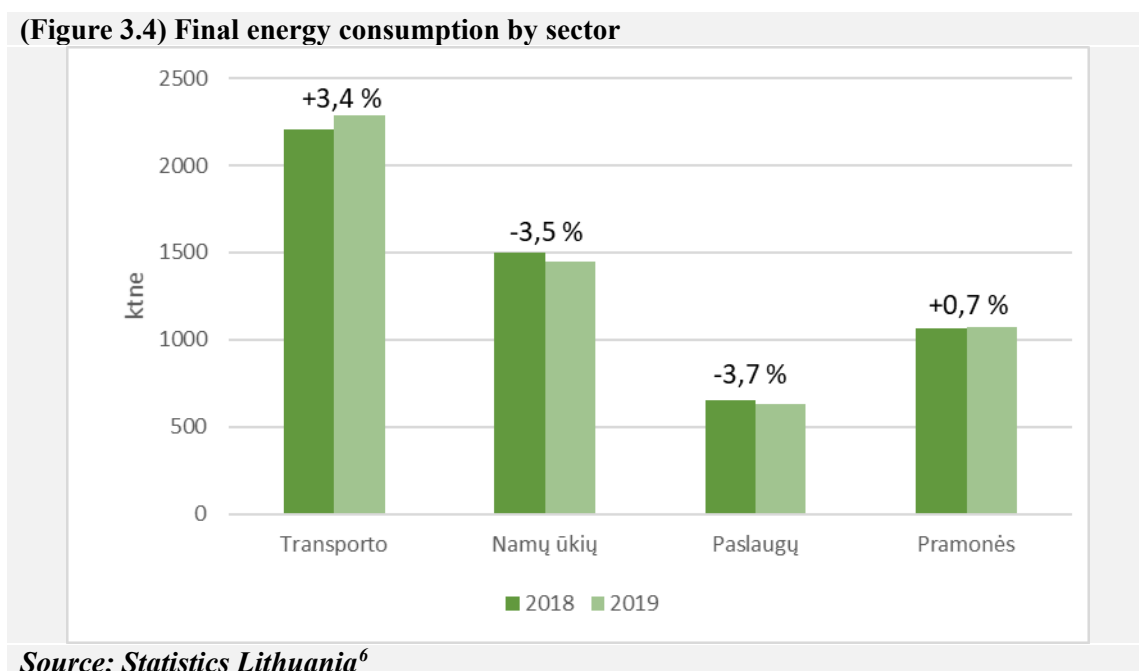
<sup>5</sup> Corrected using new Statistics Lithuania data of 18 March 2021. Each year, Statistics Lithuania reviews and revises the country's main statistical indicators for the previous year.



**Source: Data of Statistics Lithuania**

[Key to figure 3.3 reads  
 Industry  
 Transport  
 Services]

Figures for 2018-2019 final energy consumption by sector are shown in fig 3.4. The largest positive change (increase) in energy consumption during this period was recorded in the transport sector (+3.4%) and industry (+0.7%), while final energy consumption fell in the household and services sectors (-3.5% and -3.7% respectively).



**Source: Statistics Lithuania<sup>6</sup>**

<sup>6</sup> Data provided by Statistics Lithuania by letter ref. SD-116 of 28 February 2020.



[Key to 3.4 reads:  
Transport, Households, Services, Industry]

Energy consumption in the transport sector grew as a result of the steady increase in freight and passenger transport, the sector's improving value added and the continuing effective policy of State institutions in tackling the influx of contraband fuel (diesel) from third countries (Section 5 ('Transport') of the Report).

In the services and household sectors, energy consumption fell in 2019 compared to the previous year, and it is therefore not necessary under the Description of the Procedure for monitoring energy resources and energy efficiency to provide clarifications for sectors in which energy consumption falls.

The main energy growth trends in industry were linked to the increase in production volumes, the introduction of technologies and the increase in labour productivity. In the industrial sector, the volume of marketed production increased on both domestic and foreign markets (2018: €22.6 billion, 2019: €23.3 billion, Statistics Lithuania data), which in turn increased energy costs in this sector (Section 4 of this Report, 'Industry').

## 4. Industry

A comparison of the situation in Lithuania in the last year but one (year X<sup>[7]-2</sup>) and changes in industry shows that, in 2019, 7.5 ktoe (0.71% more) energy was consumed than in 2018. Further details on this can be found in Table 4.1 of the Report.

*Table 4.1 Consumption of energy and fuel in industry 2018-2019, ktoe*

Energy/energy resources	in 2018	in year 2019	Difference	Evolution Pct.
<b>Energy consumed</b>				
Electricity	303.5	313.5	10.0	3.30
Heat energy	230.4	220.0	-10.4	-4.51
<b>Final energy consumed</b>				
Total	1 062.1 <sup>8</sup>	1 069.6	7.5	0.71
<b>Fuel consumed</b>				
Hard coal	81.1	93.5	12.4	15.29
Firewood and wood waste intended for fuel	104.5	103.9	-0.6	-0.57
Natural gas	296.6	289.2	-7.4	-2.50
Other fuels	46.3 <sup>9</sup>	48.6	2.3	4.97

*Source: Statistics Lithuania, 16 March 2021*

The biggest change in energy and fuel consumption in the industrial sector took place between 2018 and 2019 as a result of coal consumption, which increased by 15.29%. AB Akmenė cementas accounts for at least 80% of total coal fuel consumption in the country's overall coal fuel balance. The output of AB Akmenė cementas increased by 6% in 2019, so the increase in coal consumption is linked to its production processes and increasing output volumes.

According to information published by Statistics Lithuania (Figure 4.1 of the Report), total industrial sales amounted to €23.3 billion at current prices in 2019<sup>10</sup>, which is 3.5% more than in

<sup>7</sup>Current year

<sup>8</sup> Data provided by Statistics Lithuania by letter ref. SD-116 of 28 February 2020.

<sup>9</sup> The figure supplied has changed because industrial waste has been included (non-renewable)

<sup>10</sup> <https://osp.stat.gov.lt/informaciniai-pranesimai?eventId=234595>

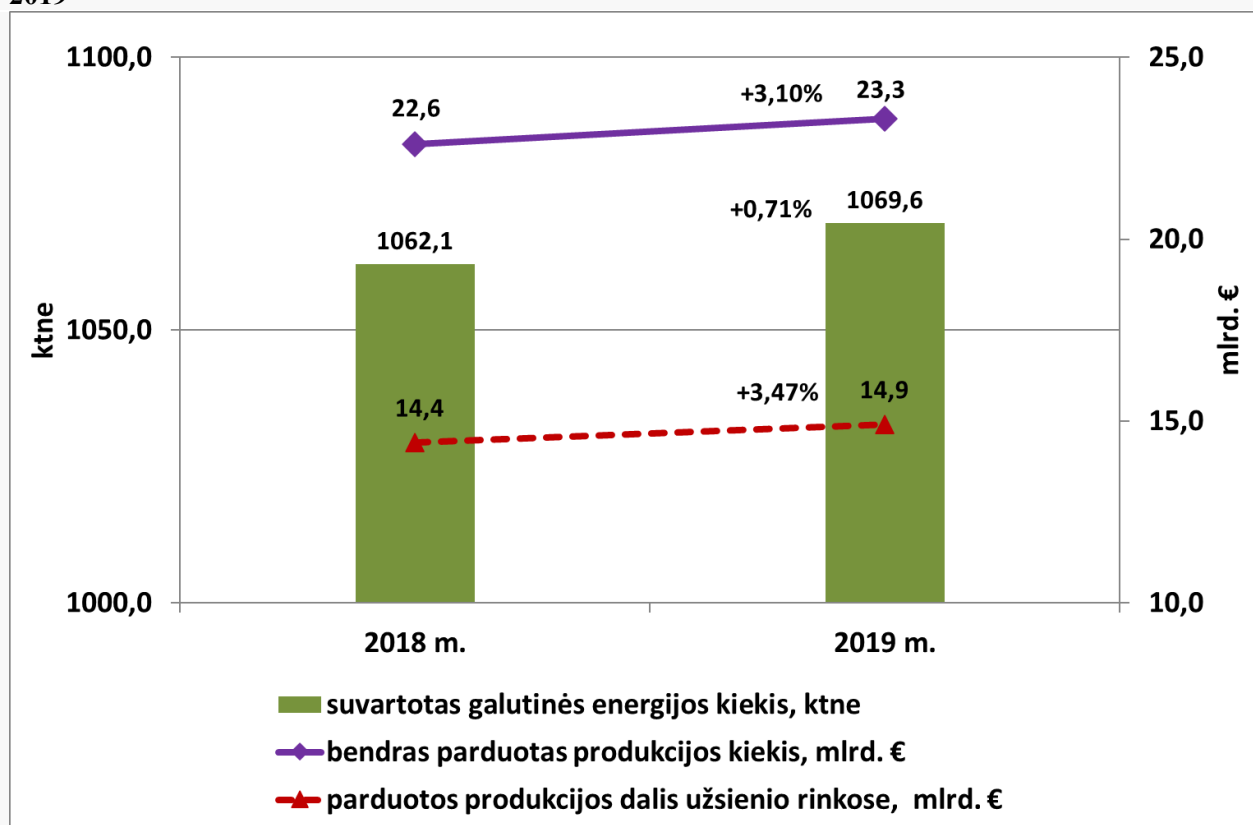
2018 at constant prices. In the same year, the share of manufacturers' sales on foreign markets (compared to the total amount) increased to €14.9 billion (63.8%).

It should be noted that total industrial sales in 2018<sup>11</sup> amounted to €22.6 billion at current prices, which is 5.1% more than in 2017 at constant prices. In the same year, the share of manufacturers' sales on foreign markets (compared to the total amount) increased to €14.4 billion (63.5%).

The fastest growth rate in 2019 was 40.1% for non-motorised vehicles and equipment, 33.4% for computer, electronic and optical products, 26.9% for machinery and equipment, 17.5% for metal products other than machinery and equipment, and 11.8% for textiles. Production of basic metals fell by 42.4% and of leather and leather articles by 16.9%.

One of the main factors for the growth of output was exports. According to 2019 data<sup>12</sup> from the Lithuanian Confederation of Industrialists, the main industrial sectors in Lithuania appeared to be relatively resilient to external shocks, such as Brexit, the US-China trade wars, the German automotive industry or the fall in the Swedish krona. The major trading partners remained the same. Germany (9.41%) and Poland (8.78%) accounted for the largest shares of total exports of Lithuanian origin. Compared to the first half of 2018, exports to Germany were up by 6.65%, while those to Poland contracted by 2.51%. Contrary to what might have been expected, exports to the United Kingdom also increased: over the year, we exported 2.37% more. Overall, exports of Lithuanian origin increased by 2.93% during the year. Moreover, exports to the rest of the world increased by 7.94% in the course of the year (a trend which has continued throughout the decade).

**(Figure 4.1) Comparison of final energy consumption and marketed production between 2018 and 2019**



Source: Statistics Lithuania

[Key to 4.1 reads:

Volume of final energy consumption, ktne

Volume of total marketed production, EUR billion

<sup>11</sup> <https://osp.stat.gov.lt/informaciniai-pranesimai?articleId=6104355#>

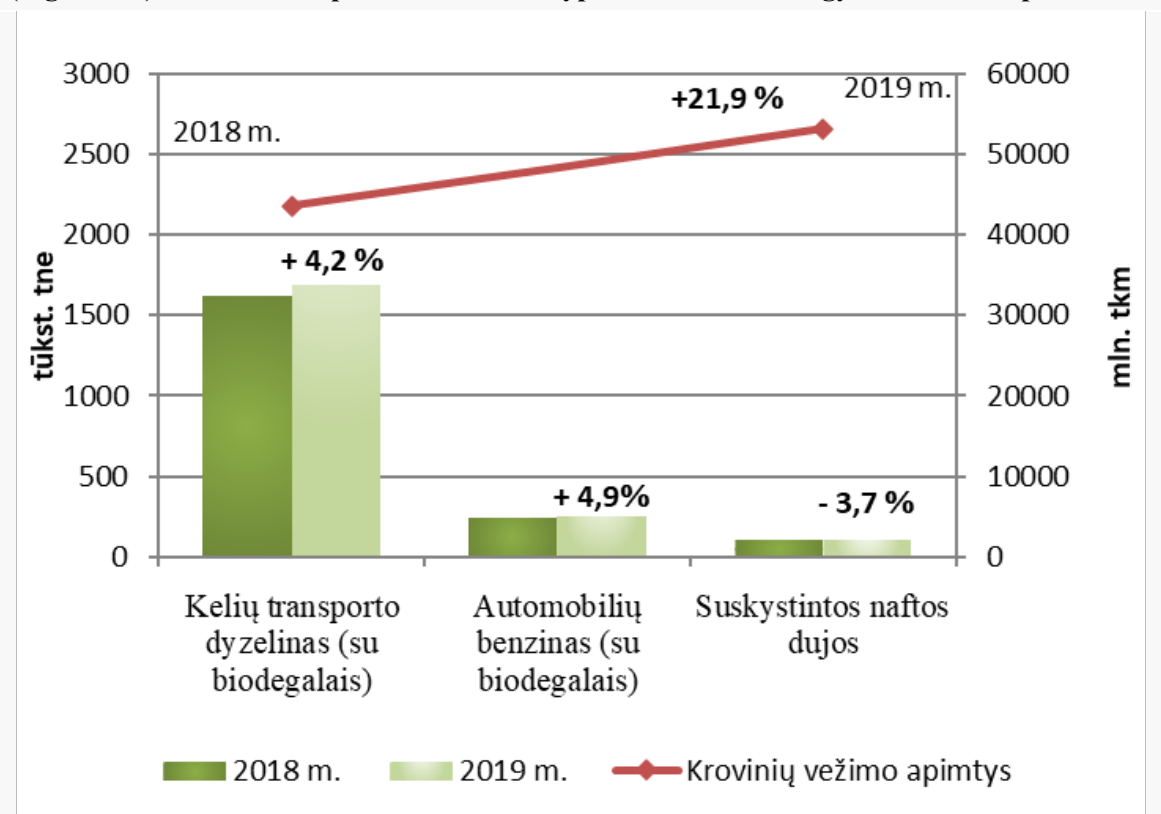
<sup>12</sup> [https://www.lpk.lt/wp-content/uploads/2020/08/LPK\\_metine\\_ataskaita\\_2019-m.-FINAL.pdf](https://www.lpk.lt/wp-content/uploads/2020/08/LPK_metine_ataskaita_2019-m.-FINAL.pdf)

## 5. Transport

This Section gives a detailed overview of the transport sector, in which energy consumption has risen over the past decade.

Final consumption of fuel and energy in the sector increased by 47.8% between 2010 and 2019. This increase was largely due to the increased use of diesel for road transport. Between 2018 and 2019 consumption of diesel in road transport grew by 4.2%, and of petrol by 4.9%, while consumption of liquefied petroleum gas fell by 3.7% (Fig. 5.1).

(Figure 5.1) Final consumption of the main types of fuel and energy in road transport



Source: Statistics Lithuania, 16 March 2021

[key to 5.1 reads:

Left to right:

Road transport diesel (including biofuels)

Road transport petrol (including biofuels)

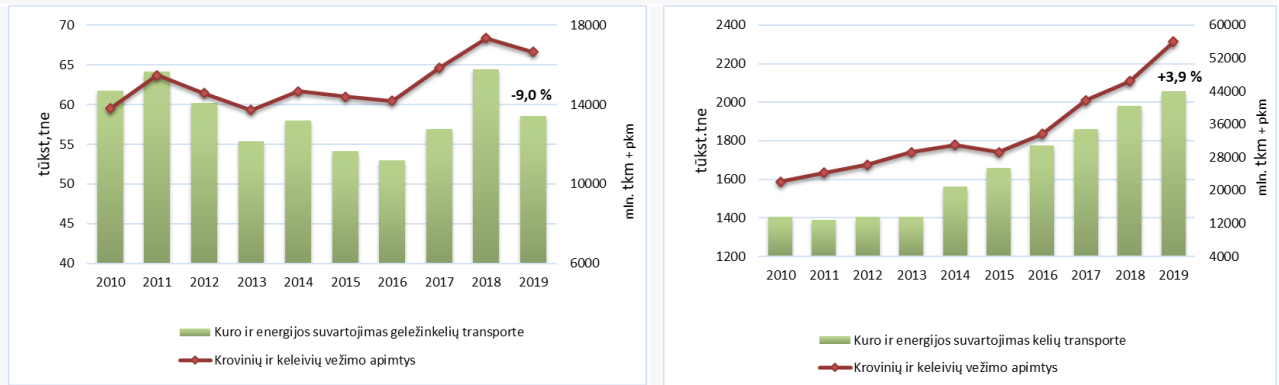
Liquefied petroleum gas

In red: volume of freight traffic]

The growing use of diesel and petrol in road transport was the result of growing volumes of freight transport in 2019, 21.9% up on the same period in 2018.

Fuel and energy consumption in rail transport fell between 2011 and 2016 but started to increase from 2016, by 13.2% in 2018, before falling again by 9.0% in 2019 compared to 2018. These annual changes are due to AB Lietuvos geležinkeliai's volume of freight and passenger transport. In the period 2014-2019, fuel and energy consumption in road transport increased by around 4-7% each year as a result of growth in freight and passenger transport. (Figure 5.2)

**Figure 5.2 Consumption of fuel and energy in rail and road transport**



*Consumption of fuel and energy in rail transport*

*Consumption of fuel and energy in road transport*

**Source: Statistics Lithuania, 16 March 2021**

[Key to 5.2 reads

Left-hand column:

In green: fuel and energy consumption in rail transport

In red: volume of freight and passenger transport

Right-hand column:

In green: fuel and energy consumption in road transport

In red: volume of freight and passenger transport]

## 6. Key legislative measures implemented in 2020

### 6.1. Lithuanian legislation:

In 2020, all the legislation and legislative amendments implementing Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 amending Directive 2012/27/EU on energy efficiency were adopted.

The objective of the Energy Efficiency Improvement Law is to ensure that Lithuania's primary energy consumption in 2030 does not exceed 5 462 ktoe, its final energy consumption does not exceed 4 526 ktoe and the cumulative energy savings achieved by energy efficiency improvement measures are not less than 27 280 GWh. The main focus is on improving energy efficiency via the adoption of decisions on the planning and financing of energy transmission or distribution networks or systems, priority being given to energy efficiency improvement measures that reduce energy demand, provided they are more cost-effective than the corresponding energy supply solutions.

In order to change the situation whereby households have to spend most of their income on energy, public authorities need to ensure that, when implementing existing or new energy efficiency policies, priority is given to households and social housing meeting the energy poverty indicators adopted by the government. (Law No. XIII-3015 of 4 June 2020)

In implementation of Articles 14 and 15 of Directive (EU) 2018/844 of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings, the inspection requirements have been laid down for heating systems in buildings and combined heating and ventilation systems with a rated output of more than 70 kW, gas-fired boilers in buildings, air-conditioning systems in buildings and combined air-conditioning and ventilation systems with a rated output of more than 70 kW are laid down in the Energy Law .

Two new definitions have been added to the Law: ‘Experimental energy innovation environment’, i.e. a set of measures enabling persons to temporarily introduce and test energy innovations that bring benefits to society in a real environment, limiting the scope of such activities of persons and applying other measures to protect the interests of consumers and society, and ‘Energy innovation’, i.e. new or substantially improved products, technologies, business solutions, services and the means of providing such products and services, and business models which, because of new or newly adapted technologies or for other reasons, may have a positive impact on energy performance and benefit society. (Law No. XIII-2867 of 28 April 2020)

## **6.2. Resolutions of the Government of Lithuania**

It is a requirement under the Programme for the renovation (modernisation) of multi-apartment buildings that, when the renovated/modernised multi-apartment building covers more than 1 500 m<sup>2</sup>, the project must provide for the installation of a photovoltaic unit serving the general needs of the building, except where it is not technically feasible to install one.

It is also laid down that if a multi-apartment building does not fall within a district heating area as provided for in the municipality's special plan for the district heating sector, the construction or replacement of biofuel boilers or boilers for the production of heat and/or hot water is deemed to be a State-supported measure for the renovation (modernisation) of the multi-apartment building. (Lithuanian Government Resolution No 96 of 5 February 2020)

In the rules for granting State support for the renovation (modernisation) of multi-apartment buildings and for monitoring the implementation of multi-apartment renovation/modernisation projects, the eligible areas of multi-apartment buildings have been amended with regard to the payment of or compensation for the costs of drawing up the renovation (modernisation) project or part thereof, the monitoring of the project's implementation and the expert assessment of the project. (Lithuanian Government Resolution No 40 of 22 January 2020)

For the renovation/modernisation of multi-apartment buildings with a useful floor area not exceeding 1 499.99 m<sup>2</sup>, construction works may be procured together with the service to draw up a project for the renovation/modernisation of a multi-apartment building (technical work project).

The cases and conditions applicable to the procurement of alternative services where such services and/or works cannot be procured through the electronic procurement systems operated by State Enterprise CPO LT or the procurer is able to procure them in a more efficient way, thereby using the funds allocated for this purpose more rationally, have been laid down. (Lithuanian Government Resolution No 353 of 8 April 2020)

Following the amendment of the correction factors for assessing thermal energy savings and thermal energy price changes, a recalculation has been made of the monthly payments for investments in a multi-apartment building renovation/modernisation project (excluding interest paid under a preferential credit agreement), following the implementation of such a project, per 1 m<sup>2</sup> of the useful area of an apartment or the overall area of other premises, less any State aid applicable for measures to increase energy efficiency contained in the multi-apartment building renovation (modernisation) plan. (Lithuanian Government Resolution No 1403 of 9 December 2020)

Additional provisions have been incorporated into the Description of the procedure for monitoring the use of energy sources and energy efficiency to the effect that any cost-benefit analysis for the assessment of cogeneration must take account of the value of production to the consumer (heat and electricity) and, as far as possible, any external benefits such as environmental, health and safety benefits, and of greenhouse gas emissions. Account must also be taken of impacts and costs relating to the labour market, energy security and competitiveness.

The coefficient used to calculate electricity savings expressed in kWh has also been modified. (Lithuanian Government Resolution No 916 of 19 August 2020)

A National Progress Plan for 2021-2030 has been adopted with a view to identifying the main changes the country is seeking to achieve in the next decade to ensure progress in the social, economic, environmental and security fields. (Lithuanian Government Resolution No 998 of 9 September 2020)

### 6.3. Orders of the Minister for Energy

The Description of the Procedure for calculating and monitoring energy savings from energy efficiency improvement measures has been amended. For the purposes of calculating energy savings from efficiency policy measures, final energy savings resulting from the implementation of efficiency policy measures may be counted only if they lead to new individual actions after 31 December 2020. The quantity of energy savings achieved after 31 December 2020 may not be counted towards the required energy savings for the period 1 January 2014 to 31 December 2020. Any energy savings that would have been achieved independently of the efficiency policy measure implemented may not be counted towards national energy efficiency targets. (Order No 1-260 of the Minister for Energy of the Republic of Lithuania of 24 August 2020)

The Description of the procedure for concluding agreements on educating energy consumers and providing them with consultancy services has been amended. The plan is to conclude agreements that will be valid up to 31 December 2030. The content of education and consultancy measures may not be duplicated or repeated in several instruments of the same agreement. The agreements are deemed to have been duly implemented where the calculated reduction in energy consumption is at least 1% of the quantity of energy supplied annually by the supplier to its final energy customers in the Republic of Lithuania in the previous calendar year following the implementation of the other educational and consultancy measures agreed or selected by the supplier. (Order No 1-276 of the Minister for Energy of the Republic of Lithuania of 4 September 2020)

The regulations and methods for verifying the energy efficiency of heating systems and combined heating and ventilation systems and buildings' air-conditioning and combined air-conditioning and ventilation systems installed in buildings have been amended. It has been laid down that buildings' compliance with the energy efficiency requirements is to be verified in respect of heating systems and combined heating and ventilation systems installed in buildings with an effective rated output of over 70 kW and buildings' air-conditioning and combined air-conditioning and ventilation systems with effective rated output of more than 70 kW. (Order No 1-314/4-818 of 28 September 2020 of the Minister for Energy and the Minister for the Economy and Innovation) and Order No 1-312 of 25 September 2020 of the Minister for Energy)

The list of State-owned heated and/or cooled buildings used by State institutions and bodies (State administrative entities) with a total area equal to or greater than 250 m<sup>2</sup> has been approved (Order No 1-417 of 10 December 2020 of the Minister for Energy).

With a view to ensuring that heating consumers receive a better and more reliable supply of thermal energy and to reducing energy losses, funding has been allocated to a project under Measure 04.3.2-LVPA-K-102 'Modernisation and development of heating supply networks' coming under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds (Order No 1-13 of the Minister for Energy of the Republic of Lithuania of 30 January 2020;

With a view to reducing the annual consumption of primary energy in public buildings and greenhouse gas emissions, Description of conditions for the funding of projects No 1 under Measure 04.3.1-VIPA-V-101 'Renovation of State-owned buildings' coming under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds has been amended. (Order No 1-134 of the Minister for Energy of the Republic of Lithuania of 22 May 2020)

With a view to upgrading State-owned heated and/or cooled public buildings so as to ensure that they meet at least the minimum energy performance requirements, funding has been allocated to projects falling under Measure 04.3.1-VIPA-T113 'Renovation of State-owned buildings (II)' coming under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds. (Order No 1-155 of the Minister for Energy of the Republic of Lithuania of 16 June 2020; Order No 1-199 of 14 July 2020; Order No 1-228 of 30 July 2020; Order No 1-242 of 10 August 2020; Order No 1-297 of 16 September 2020; Order No 1-309 of 24 September 2020; Order No 1-315 of 29

September 2020; Order No 1-336 of 9 October 2020; Order No 1-335 of 9 October 2020; Order No 1-343 of 15 October 2020; Order No 1-350 of 28 October 2020; Order No 1-365 of 6 November 2020; Order No 1-375 of 17 November 2020; Order No 1-393 of 1 December 2020; Order No 1-398 of 3 December 2020; Order No 1-415 of 10 December 2020). The above-mentioned Orders of the Minister for Energy provide funding of €74.58 million for 112 projects involving the renovation of approximately 300 000 m<sup>2</sup> of public buildings.

With a view to meeting the targets for the renovation of public buildings and increasing the attractiveness of funding for renovation projects, Description of conditions for the funding of projects No 1 under Measure 04.3.1-VIPA-T-113 'Renovation of State-owned buildings (II)' coming under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds has been amended. (Order No 1-58 of the Minister for Energy of the Republic of Lithuania of 20 March 2020; Order No 1-59 of 23 March 2020; Order No 1-332 of 7 October 2020)

With a view to reducing energy consumption by street lighting infrastructure, Description of conditions for the funding of projects No 1 under Measure 04.3.1-LVPA-T-116 'Modernisation of street lighting' coming under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from the European Union funds has been approved. (Order No 1-113 of the Minister for Energy of the Republic of Lithuania of 30 April 2020; Order No 1-189 of 2 July 2020; Order No 1-189 of 2 July 2020)

Funding has been allocated under measure 04.3.1-LVPA-T-116 'Modernisation of street lighting' under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds (Order No 1-196 of the Minister for Energy of the Republic of Lithuania of 10 July 2020; Order No 1-204 of 17 July 2020; Order No 1-244 of 11 August 2020; Order No 1-245 of 11 August 2020; Order No 1-263 of 25 August 2020; Order No 1-265 of 27 August 2020; Order No 1-273 of 03 September 2020; Order No 1-292 of 11 September 2020; Order No 1-305 of 22 September 2020; Order No 1-308 of 24 September 2020; Order No 1-326 of 1 October 2020; Order No 1-414 of 16 September 2020)

The list of reserve projects from Call No 1 relating to Measure 04.3.1-LVPA-T-116 'Modernisation of street lighting' coming under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds has been approved. (Order No 1-348 of the Minister for Energy of the Republic of Lithuania of 26 October 2020)

With a view to increasing energy efficiency in households not connected to a district heating system, Description of conditions for the funding of projects No 1 under measure 04.3.2-LVPA-V-111 'Boiler replacement in households' coming under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds has been amended.

(Order No 1-92 of the Minister for Energy of the Republic of Lithuania of 17 April 2020; Order No 1-261 of 24 August 2020; Order No 1-295 of 14 September 2020)

Funding has been allocated to projects involving the replacement of inefficient biomass-fired boilers in households falling under measure 04.3.2-LVPA-V111 'Boiler replacement in households' coming under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds. (Order No 1-124 of the Minister for Energy of the Republic of Lithuania of 18 May 2020; Order No 1-284 of 10 September 2020)

#### **6.4. Orders of the Minister for the Environment**

Funds have been earmarked in the 2020 estimate for the use of funds under the Climate Change Special Programme for increasing the effectiveness of energy consumption and production through the modernisation of residential and public buildings and other buildings giving rise to the most efficient reduction of greenhouse gas emissions in the areas of energy, industry, construction,

transport, agriculture, waste management, etc. (Order No D1-143 of the Minister for the Environment of 12 March 2020; Order No. D1-408 of 2 July 2020; Order No. D1-572 of 24 September 2020; Order No. D1-706 of 23 November 2020)

The detailed plan of the 2019 estimate for the use of funds under the Climate Change Special Programme includes measures to improve energy efficiency, such as State support to owners of apartments and other premises in multi-apartment buildings who implement projects for the renovation (modernisation) of a multi-apartment building; Renovation (modernisation) of one or two apartment dwellings by natural persons, achieving at least the energy performance class of a B category house and reducing the cost of calculated thermal energy consumption by at least 40% compared to the calculated thermal energy consumption prior to the renovation (modernisation) project; Renovation/modernisation of public buildings owned by municipalities, as part of the Programme to improve the energy efficiency of public buildings. Measures are also envisaged to promote the use of renewable energy sources and to deploy environmentally friendly technologies, including efficient cogeneration. (Order No D1-187 of the Minister for the Environment of 3 April 2020; Order No. D1-276 of 12 May 2020; Order No D1-320 of 28 May 2020; Order No. D1-403 of 30 June 2020; Order No. D1-438 of 22 July 2020; Order No. D1-466 of 29 July 2020; Order No. D1-492 of 13 August 2020) Order No. D1-575 of 25 September 2020; Order No. D1-632 of 14 October 2020; Order No. D1-637 of 16 October 2020; Order No. D1-705 of 23 November 2020; Order No. D1-769 of 10 December 2020)

Funding has been allocated to projects under the measure ‘Modernisation of existing installations for heat storage, installation of absorption heat pumps and/or use of renewable energy sources (solar cells) in the district heating sector to increase energy efficiency, the load of existing installations using renewables and the share of renewable energy sources’. (Order No D1-153 of the Minister for the Environment of 18 March 2020; Order No. D1-218 of 15 April 2020) Order No. D1-272 of 11 May 2020; Order No. D1-317 of 28 May 2020)

With a view to reducing greenhouse gas emissions in the transport sector and improve air quality, the Description of the procedure has been adopted for the measure ‘Promoting the procurement of electric vehicles for legal entities’ under the Climate Change Programme. (Order No D1-175 of the Minister for the Environment of 31 March 2020); The Description of the Procedure for promoting the procurement of electric vehicles for legal entities. (Order No D1-615 of the Minister for the Environment of 12 October 2020; Order No. D1-750 of 38 December 2020); The Description of the procedure concerning compensatory payments for the promotion of public transport and other alternative, less polluting means of transport for natural persons ‘(Order No D1-269 of the Minister for the Environment of 11 May 2020)

With a view to reducing greenhouse gas emissions, the Description of the procedure for the implementation of the energy efficiency of private legal entities on the basis of energy audit reports under the Climate Change Programme has been adopted. This lays down the procedure and conditions for the submission and assessment of applications, payment claims and reports by legal entities, and the monitoring of compliance with commitments. It also lays down the general requirements for eligible costs. (Order No D1-417 of the Minister for the Environment of 9 July 2020)

With a view to reducing greenhouse gas emissions in public-sector buildings and increasing the energy performance of such buildings, the Description of the procedure for the payment of compensatory payments under the Climate Change Programme for the renovation of municipal public buildings has been adopted (Order No D1-359 of the Minister for the Environment of 16 June 2020; Order No. D1-828 of 28 December 2020).

With a view to reducing greenhouse gas emissions and the cost of thermal energy consumption in individual dwellings, the Description of the procedure for granting compensatory payments to natural persons under the Climate Change Programme for the renovation/modernisation of one or two dwelling buildings has been adopted. This lays down the procedures and conditions for the submission and assessment of project registration forms, the granting and allocation of compensatory payments and the monitoring of compliance with commitments. It also lays down the general requirements for eligible costs. Compensatory payments are granted to natural persons for the renovation (modernisation) of one- or two-apartment dwellings achieving at least the energy



performance class of a B category house and reducing the cost of calculated thermal energy consumption by at least 40% compared to the calculated thermal energy consumption prior to the renovation/modernisation; (Order No D1-201 of the Minister for the Environment of 7 April 2020)

With a view to reducing greenhouse gas emissions in the multi-apartment building sector and increasing energy efficiency, the Description of the procedure for granting and paying compensatory payments under the Climate Change Programme for solar technologies, heat pumps and heat storage for heat generation, hot water production and/or electricity production in renovated (modernised) multi-apartment buildings not connected to a district heating system with a view to achieving net-zero greenhouse gas emissions has been adopted. (Order No D1-303 of the Minister for the Environment of 26 May 2020; Order No. D1-805 of 21 December 2020)

The following State aid schemes for measures under the Climate Change Programme have been adopted:

- 'Renewal of the urban and suburban public transport fleet by promoting the use of electric vehicles and vehicles running on biomethane, compressed natural gas and liquefied natural gas'. (Order No D1-302 of the Minister for the Environment of 26 May 2020; Order No. D1-423 of 15 July 2020);
- 'Promoting the substitution of less polluting technologies for companies participating in the European Union Emissions Trading System'. (Order No D1-309 of the Minister for the Environment of 26 May 2020);
- 'Acquisition of electric vehicles and vehicles running on compressed natural gas, liquefied natural gas, biomethane and hydrogen and the creation and/or development of the necessary infrastructure for the benefit of the basic user of the infrastructure built'. (Order No D1-397 of the Minister for the Environment of 30 June 2020; Order No. D1-481 of 10 August 2020)

Amendments have been made to the Description of the procedure for the use of funds under the Climate Change Special Programme. The provisions governing the administration of projects under the Climate Change Programme have been updated so that penalties will be applied by the Environmental Project Management Agency for non-performance of project funding contracts. An annex on the main types of irregularities and financial correction rates has been added to the draft. The annex entitled 'Methodology for assessing greenhouse gas emission savings' has been amended. The GHG methodology is used to assess the effectiveness of projects funded under the Climate Change Programme. (Order No D1-315 of the Minister for the Environment of 28 May 2020)

The Description of the procedure for compensatory payments under the Climate Change Programme for the modernisation of internal heating and hot water systems in multi-apartment buildings lays down that a project to modernise heating and hot water systems in multi-apartment buildings must achieve energy efficiency savings of at least 2%, in accordance with the energy efficiency indicators specified in Annex 2 to the Description of the procedure. (Order No D1-454 of the Minister for the Environment of 27 July 2020)

The Retraining Programme for experts in the certification of the energy performance of buildings has been amended. The method of training laid down is a 39-hour refresher course. (Order No D1-462 of the Minister for the Environment of 28 July 2020)

The procedure for monitoring the implementation of the multi-apartment building renovation (modernisation) Programme has been amended. The economic indicators for the implementation of the Programme have been set; instead of recording inaccurate data on actual energy consumption in renovated/modernised multi-apartment buildings, it is laid down that countable energy saving indicators must be recorded in renovated (modernised) multi-apartment buildings; with a view to effectively addressing the problems encountered with regard to the quality of projects, it is laid down that a selective energy audit of renovated (modernised) multi-apartment buildings and/or an expert assessment of buildings (projects) must take place, as necessary, after renovation (modernisation) projects have been carried out. (Order No D1-451 of the Minister for the Environment of 24 July 2020)

With a view to improving the conditions for drawing up a multi-apartment house renovation (modernization) project (or part thereof), the performance of an expert assessment of the project (or part thereof) and the procurement of construction maintenance services and construction works, the Description of the procedure for drawing up a multi-apartment house renovation (modernization)

project (or part thereof), the performance of an expert assessment of a project (or part thereof), and the procurement of construction maintenance services and construction works has been amended. Provision has been made for the procurement of construction works together with services for the drawing-up of a technical work project. (Order No D1-608 of the Minister for the Environment of 12 October 2020)

## **6.5. Orders of the Minister for Transport and Communications**

The Guidelines for the development of a public recharging infrastructure for electric vehicles have been amended. They require all public recharging infrastructure for electric vehicles to be accessible to all sections of society who drive an electric vehicle. (Order No 3-319 of the Minister for Transport and Communications of 14 May 2020)

Funding has been allocated under Specific objective 4.5.1 'Promotion of sustainable mobility and environmentally friendly transport to reduce carbon emissions' of Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds for:

- the creation of a network of recharging points for electric vehicles in Marijampolė. (Order No 3-1 of the Minister for Transport and Communications of 2 January 2020)

- for the installation of recharging points for electric vehicles in Birštonas (Order No 3-593 of the Minister for Transport and Communications of 5 October 2020)

- for the purchase of clean public transport vehicles in Jonava (Order No 3-409 of the Minister for Transport and Communications of 13 July 2020)

- for the purchase of new environmentally friendly public transport vehicles (trolleybuses) in Kaunas (Order No 3-652 of the Minister for Transport and Communications of 29 October 2020)

Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds has been amended in respect of:

- the Description of the Conditions for funding projects under measure 04.5.1-TID-R-518 'Renewal of the local public transport fleet'. (Order No 3-132 of the Minister for Transport and Communications of 12 March 2020; Order No 3-388 of 25 June 2020).

- the Description of the Conditions for funding projects under measure 04.5.1-TID-V-517 'Renewal of the urban public transport fleet'. (Order No 3-138 of the Minister for Transport and Communications of 16 March 2020; Order No 3-612 of 12 October 2020).

- the Description of the Conditions for funding projects under measure 04.5.1-TID-V-515 'Creation of a network of recharging points for electric vehicles'. (Order No 3-537 of the Minister for Transport and Communications of 16 September 2020);

- the Description of the Conditions for funding projects under measure 04.5.1-TID-R-516 'Reconstruction and expansion of pedestrian and cycle paths'. (Order No 3-556 of the Minister for Transport and Communications of 17 September 2020; Order No 3-690 of 12 November 2020).

- the Description of the Conditions for funding projects under measure 04.5.1-TID-R-514 'Implementation of sustainable mobility measures'. (Order No A1-151 of the Minister for Transport and Communications of 19 March 2020; Order No 3-557 of 17 September 2020; Order No 3-589 of 02 October 2020)

## **6.6. Orders of the Minister of the Economy and Innovation**

Description of conditions for the funding of projects No 1 under joint measure J03-IVG-T 'Partial reimbursement of interest' coming under Priority 3 'Promoting the competitiveness of small and medium-sized enterprises' and Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds was amended. (Order No 4-91 of the Minister for Economic Affairs and Innovation of the Republic of Lithuania of 12 February 2020; Order No 4-201 of 03 April 2020; Order No 4-220 of 10 April 2020)

## 7. Compliance of government buildings with energy performance requirements

In order to comply with the requirements of Article 5 of Energy Efficiency Directive 2012/27/EU (hereinafter 'the Directive'), Lithuania has drawn up a list of central government public buildings, which was approved by Order No 1-7 of the Minister for Energy of the Republic of Lithuania of 23 January 2014 approving the list of heated and/or cooled buildings owned by the State for use by public authorities and bodies (hereinafter 'List No 1-7'). The floor area of central government buildings contained in the said List falling with energy performance classes A, B and C, D, E, F and G and without an energy performance class is 942 526 m<sup>2</sup>, 1 068 759 m<sup>2</sup> and 1 154 686 m<sup>2</sup> respectively.

These figures also include buildings officially protected as part of a designated environment or because of their special architectural or historical merit (204 614 m<sup>2</sup>), which are exempted under Article 5(2) of Directive 2012/27/EU, and unheated buildings (139 575 m<sup>2</sup>). The total floor area of officially protected and unheated buildings and buildings transferred to municipalities (or buildings formerly owned by municipalities) is 344 189 m<sup>2</sup>. This area should have been excluded from the calculation of the mandatory renovation rate. Consequently, the **calculated total annual mandatory renovation rate for 2014 is 56 378**  $(1\,068\,759 + 1\,154\,686 - 344\,189) \times 0.03$  m<sup>2</sup>.

It should be noted that, in accordance with Article 5(4) of Directive 2012/27/EU, central government authorities submitted data during 2014 to the effect that they no longer used and had vacated buildings covering an area of 33 447 m<sup>2</sup> (cf. the 2016 Report of the Ministry of Energy of the Republic of Lithuania on the progress achieved towards meeting national energy efficiency targets); moreover, according to data submitted by central government authorities and data from the register of energy performance certificates for buildings, buildings contained in List No 1-7 covering an area of 34 725 m<sup>2</sup> had been renovated. In total, buildings with an area covering 68 195 m<sup>2</sup> were renovated or vacated in 2014.

In view of the fact that a building area of 68 ,195 m<sup>2</sup> was renovated or no longer used in 2014, the calculated **total annual mandatory renovation rate for 2015 is 54 332**  $(1\,068\,759 + 1\,154\,686 - 344\,189 - 68\,195) \times 0.03$  m<sup>2</sup>. In accordance with Article 5(4) of the Directive, and on the basis of data supplied by central government institutions and taken from the register of energy performance certificates, central government institutions no longer used and vacated and renovated 62 612 m<sup>2</sup> of building area in 2015 (of which 2 143 m<sup>2</sup> was no longer used and vacated, and 60 469 m<sup>2</sup> was renovated).

In accordance with Article 5(5) of the Directive, the list of buildings was amended, increasing it by an area of 500 m<sup>2</sup>, by Order No 1-63 of the Minister for Energy of the Republic of Lithuania of 26 February 2016 amending the list of heated and/or cooled buildings owned by the State for use by public authorities and bodies. According to this list of buildings, the area of central government buildings falling within energy class G, F, E or D and without an energy class is 1 600 676 m<sup>2</sup> and 993 953 m<sup>2</sup> respectively. Similarly, the area of buildings falling within energy class G, F, E or D and without an energy class included in the list of buildings of 250 m<sup>2</sup> to 500 m<sup>2</sup> approved by Order No 1-291 of 16 December 2015 of the Minister for Energy approving the list of heated and/or cooled buildings of 250 m<sup>2</sup> to 500 m<sup>2</sup> of State institutions and establishments owned by the Government and of buildings used by public administration authorities is 7 488 m<sup>2</sup> and 174 925 m<sup>2</sup> respectively. The total floor area of officially protected and unheated buildings also included in these areas is 344 189 m<sup>2</sup>. This area should have been excluded from the calculation of the mandatory renovation rate. After deduction of this area and the area renovated and vacated in 2015, **the calculated total annual mandatory renovation rate for 2016 is 71 107**  $((1\,600\,676 + 7\,488 + 993\,953 + 174\,925 - 344\,189 - 62\,612) \times 0.03)$  m<sup>2</sup>. In accordance with Article 5(4) of the Directive, and on the basis of data supplied by central government institutions and taken from the register of energy performance

certificates, central government institutions no longer used and vacated 41 217 m<sup>2</sup> and renovated 49 017 m<sup>2</sup> of building area in 2016, giving a total of 91 017 m<sup>2</sup>.

In view of the fact that a building area of 91 017 m<sup>2</sup> was renovated or no longer used in 2016, **the calculated total annual mandatory renovation rate for 2017 is 68 377** ((2 370 241 - 91 017) x 0.03) m<sup>2</sup>. In accordance with Article 5(4) of the Directive, and on the basis of data supplied by central government institutions and taken from the register of energy performance certificates, central government institutions renovated 82 658 m<sup>2</sup> of building area in 2017.

A building area of 82 658 m<sup>2</sup> was renovated in 2017, and **the calculated total annual mandatory renovation rate for 2018 is 65 897** ((2 279 224 - 82 658) x 0.03) m<sup>2</sup>. In accordance with Article 5(4) of the Directive, and on the basis of data supplied by central government institutions and taken from the register of energy performance certificates, central government institutions no longer used and vacated 31 216 m<sup>2</sup> and had renovated 11 217 m<sup>2</sup> of building area in 2018, giving a total of 42 433 m<sup>2</sup>.

A building area of 42 433 m<sup>2</sup> was renovated in 2018, and the calculated total annual **mandatory renovation rate for 2019 is 64 624** ((2 196 566 - 42 433) x 0.03) m<sup>2</sup>. In accordance with Article 5(4) of the Directive, and on the basis of data supplied by central government institutions and taken from the register of energy performance certificates, central government institutions no longer used and vacated 24 831 m<sup>2</sup> and renovated 44 614 m<sup>2</sup> of building area in 2019, giving a total of 69 445 m<sup>2</sup> [sic].

A building area of 69 445 m<sup>2</sup> was renovated in 2019, and the calculated total **annual mandatory renovation rate for 2020 is 62 541** ((2 154 133 - 59 445) x 0.03) m<sup>2</sup>. In accordance with Article 5(4) of the Directive, and on the basis of data supplied by central government institutions and taken from the register of energy performance certificates, central government institutions no longer used and vacated 63 169 m<sup>2</sup> and had renovated 24 720 m<sup>2</sup> of building area in 2020, giving a total of 87 899 m<sup>2</sup>.

Under the Energy Efficiency Action Plan and the Energy Efficiency Improvement Programme for Public Buildings, it was planned to upgrade around 470 m<sup>2</sup> of central government public buildings over the period 2014-2020 in order to meet the obligations of Article 5 of the Directive. During this period, the Lithuanian central government authorities have renovated, no longer use or have abandoned a total building area of 504 249 m<sup>2</sup>, or 34 249 m<sup>2</sup> more than planned.

Data concerning public buildings not meeting the minimum energy performance requirements requiring, in the period 2014-2020, to be renovated or transferred to the manager of centrally managed public assets in order to be sold, demolished or renovated, and the areas actually renovated or vacated are shown in Table 7.1.

**Table 7.1 Public buildings not meeting the minimum energy performance requirements requiring to be renovated or transferred to the manager of centrally managed public assets in order to be sold, demolished or renovated, and the proportion of areas actually renovated or vacated**

Indicators	Floor area of public buildings, m <sup>2</sup>							
	2014	2015	2016	2017	2018	2019	2020	Total
Total floor area of buildings exceeding an area of 500 m <sup>2</sup> of classes F, E and D to be renovated	1 879 256	1 811 061						
Total floor area of buildings exceeding an area of 500m <sup>2</sup> and from 250 to 500 m <sup>2</sup> of classes G, F, E and D and without an energy class			2 370 241	2 279 224	2 196 566	2 154 133	2 084 688	1 977 257
Calculated total rate requiring renovation (3%)	56 378	54 332	71 107	68 377	65 897	64 624	62 541	443 256*
Total renovated or vacated:	68 195	62 612	91 017	82 658	42 433	69 445	87 889	50 4249
renovated	34 725	60 469	49 800	82 658	11 217	44 614	24 720	

vacated in accordance with Article 5(4) of the Directive	33 470	2 143	41 217	0	31 216	24 831**	63 169	
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\* In the Energy Efficiency Action Plan, the plan was to renovate, vacate or abandon a total building area of 470 000 m<sup>2</sup> by the end of 2020.\*\* The areas of buildings vacated were adjusted in drawing up the 2019 Report of the Republic of Lithuania on the progress achieved towards national energy efficiency targets taking into account the information received from the State Enterprise Turto bankas.

## 8. Energy savings achieved through alternative measures

### 8.1. Renovation of multi-apartment buildings

With a view to implementing the requirements of Article 7 of Directive 2012/27/EU by 2020, the multi-apartment building renovation (modernisation) Programme was amended by Government Resolution No 213 of 25 February 2015.

Implementation of the objectives of the said Programme between 2014 and 2019, lifetimes of measures and overall energy saving up to 2020:

1. Secure the funding and implementation of projects for the renovation (modernisation) of multi-apartment buildings meeting the Programme requirements, grant preferential loans and other statutory State aid to owners of flats and other buildings, and encourage owners of flats and other buildings to implement energy-saving measures.

According to implementation monitoring data for the multi-apartment building renovation (modernisation) Programme supplied by the Ministry of the Environment and the Housing Energy Savings Agency, 285 multi-apartment buildings were renovated in 2019. Based on the data provided, the quantity of energy saved **in 2019 was 103.53 GWh**.

The duration of building renovation measures is 20 years.

The total savings effect of this measure **from 2014 to 2019 (2020) was 2971.08 GWh**.

2. Ensure that the public is better informed, better educated and more aware of issues relating to building energy performance, renovation (modernisation) and energy savings.

The duration of the measure 'Ensuring that the public is better informed, better educated and more aware of issues relating to building energy performance, renovation (modernisation) and energy savings' is one year.

The total savings effect of this measure from **2014 to 2019 reached 69.27 GWh**.

Order No 1-205/1K-282 of 3 September 2015 of the Lithuanian Minister for Energy and Minister Finance approving the rules for the implementation in Lithuania of the Ignalina Programme for 2014-2010 approved the rules for the implementation in Lithuania of the Ignalina Programme for 2014-2020. These rules govern the funding of a Programme to deploy EU financial support measures to implement the decommissioning of blocks 1 and 2 of the Ignalina nuclear power plant in Lithuania (hereinafter 'Ignalina Programme'). One of the areas eligible for funding under the Ignalina Programme includes projects to renovate multi-apartment buildings in municipalities in the region of the Ignalina power plant.

According to information on renovated multi-apartment buildings supplied by the Ignalina, Visaginas and Zarasai regional authorities, 2.00 GWh of energy were saved in 2014, 1.62 GWh in 2015, 1.63 GWh in 2016 and 1.14 GWh in 2017.

The duration of building renovation measures is 20 years.

The total savings effect of the Ignalina Programme from **2014 to 2017 (2020) was 36.43 GWh**.

The total energy saved under the renovation (modernisation) of multi-apartment buildings and Ignalina Programmes is shown in Table 8.1. This and the other tables provide details of the results of energy performance enhancement measures. Figures in bold show the result for industry - i.e. the quantity of energy saved - for specific years. Depending on the lifetime of the measure, the benefit is

felt either just for one year (information and consultancy measures to change energy consumers' habits or impact of excise and taxes on the decreased use of fuel), or over a number of years to come (financial measures for energy at final energy consumers' facilities). If a measure has a lifetime of more than one year, the energy saving is multiplied by the number of years until 2020.

In the data submitted in 2020, a correction was made to the previously reported data after overlapping savings had been identified between the Ignalina Programme and the multi-apartment building renovation (modernisation) Programme. This correction does not include previous years' energy savings under the Ignalina Programme as they are covered by savings under objective 1 of the multi-apartment building renovation (modernisation) Programme.

The more detailed data supplied in Table 8.1 is used in calculations

**Table 8.1 Total quantity of energy saved, GWh**

Measure	Energy savings, GWh							
	2014	2015	2016	2017	2018	2019	2020	Total
Multi-apartment building renovation (modernisation) Programme, objective 1	25.3	25.3	25.3	25.3	25.3	25.3	25.3	177.10
		138.00	138	138	138	138	138	828.00
			208.07	208.07	208.07	208.07	208.07	1 040.35
				119.97	119.97	119.97	119.97	479.88
					56.473	56.473	56.473	169.42
						103.53	103.53	207.06
Multi-apartment building renovation (modernisation) Programme, objective 2	41.12	6.45	7.28	7.54	6.88	-	-	69.27
Ignalina Programme*	2	2	2	2	2	2	2	14
		1.62	1.62	1.62	1.62	1.62	1.62	9.72
			1.63	1.63	1.63	1.63	1.63	8.15
				1.14	1.14	1.14	1.14	4.56
								<b>Total:</b>
								<b>2 971.08</b>

\* The energy savings under the Ignalina Programme are covered by Objective 1 of the multi-apartment building renovation (modernisation) Programme, meaning that they are not included in the total quantity of energy saved

## 8.2. Tax and excise on fuel

According to 2019 data provided by Statistics Lithuania, Lithuania used around 1 667 700 tonnes of diesel, 246 100 tonnes of petrol and 96 200 tonnes of liquefied natural gas.

Lithuania applied a VAT rate of 21% to fuel, 6% higher than the minimum rate of 15% set by the European Union. The 21% excise duty on petrol (+0.08 euro/l) was higher than the minimum excise duty for petrol set by the European Union, whilst the excise duty on liquefied natural gas is 243% (+0.18 euro/l), which is higher than the minimum excise duty set for LPG by the EU. As regards the cumulative impact of higher taxes and excise rates, the price of petrol was 13.9% higher, diesel 5.2% higher and LPG 64.7% higher than the average tax and excise rates elsewhere in the European Union.

We are providing information concerning the Lithuanian methodology, according to which the practical calculation of energy savings from taxation of energy is based on the general equilibrium model.

The first stage estimates the difference (change) in the price of the unit of energy resulting from different amounts of taxes:

$$\frac{E_{TaxP} - E_{EUminTaxP}}{E_{EUminTaxP}} = \Delta p$$

Where:

$E_{TaxP}$  – price of a unit of energy (transport fuels) with corresponding taxes in Lithuania;

$E_{EUminTaxP}$  – calculated average price of a unit of energy (transport fuels) with minimum threshold corresponding tax values in the European Union;

$\Delta p$  – difference in taxes (tax effect) per price of a unit of energy (transport fuels).

In the second stage, the projected energy consumption (transport fuel) is calculated if the appropriate tax estimates have not been applied. The elasticity estimate forms part of this second stage:

$$E_{ActualCons} \times \frac{1}{1 + \Delta p \times el_{accepted}} = E_{Cons\ w/o\ tax}$$

Where:

$E_{ActualCons}$  – actual energy (transport fuel) consumption;

$el_{accepted}$  – an estimate of the elasticity of the fuel type in a given year, taking into account the results of the study 'Assessment of the impact of taxes on energy and energy consumption in Lithuania'. The recalculated savings are provided in Table 3.

$E_{Cons\ w/o\ tax}$  – estimated consumption of energy (transport fuels) in the absence of the respective taxes.

The third stage calculates energy savings from taxes:

$$E_{Cons\ w/o\ tax} - E_{ActualCons} = E_{savings}$$

Where:

$E_{savings}$  – energy savings from tax measures.

In order to determine fuel price elasticities, the Ministry of Energy commissioned a study entitled 'Evaluation of the effect of taxes applied in Lithuania on consumption of energy and energy resources', which identified the short-term price elasticities (STPEs) and long-term price elasticities (LTPEs) of fuel and energy prices relevant to Lithuania. Fuel and energy price elasticities established in the study are provided in Table 2.

Table 2

Year	Gasoline		Diesel fuel		Liquefied petroleum gas	
	SRPE	LRPE	SRPE	LRPE	SRPE	LRPE
2014	-0.67	-1.49	-0.28	-0.17	-0.40	-3.16
2015	-0.46	-1.01	-0.41	-0.26	-0.05	-0.31
2016	-0.48	-1.14	-0.40	-0.26	-0.04	-0.24
2017	-0.48	-1.13	-0.39	-0.25	-0.04	-0.25
2018	-0.43	-1.02	-0.38	-0.25	-0.03	-0.21
2019	-0.42	-1.03	-0.37	-0.24	-0.05	-0.27
2020	-0.29	-0.71	-0.31	-0.20	-0.06	-0.34

In light of the study results, each year we provide energy savings which are recalculated for each type of fuel from 2014 to 2019 where only LRPE is applied.

Table 3

Type of fuel	Energy savings, GWh							
	2014	2015	2016	2017	2018	2019	2020	Total
Gasoline	480.76	388.59	458.26	434.01	404.58	432.34	*	
Diesel fuel	129.11	207.92	226.13	237.29	249.23	253.86	*	
Liquefied petroleum gas	348.30	118.38	92.61	54.48	51.343	58.82	*	
Total:	958.17	714.89	776.99	725.79	705.15	745.03	*	4

									<b>626.04</b>
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\* Savings for the year 2020 will be calculated once the data on fuel consumption in 2020 are in.

### 8.3. Renovation of public buildings

This Section provides information on public building renovation programmes and measures aimed at reducing energy consumption. Data have been supplied by the authority responsible for implementing the programmes and measures in question.

The total energy savings from the renovation of public buildings is shown in Table 8.3.

**Table 8.3 Total energy savings from the renovation of public buildings, GWh**

No	Programme/Measure	Energy savings, GWh							
		2014	2015	2016	2017	2018	2019	2020	Total
8.3.1	Public Buildings Programme						2.54	2.54	5.08
8.3.1.1	04.3.1-VIPA-V-101 'Renovation of buildings owned by the State'						-	-	
8.3.1.2	04.3.1-VIPA-T113 'Renovation of buildings owned by the State (II)'						-	-	
8.3.1.3	04.3.1-FM-F-105 'Improving energy efficiency in public infrastructure'						1.76	1.76	3.53
8.3.1.4	04.3.1-FM-F-002 'Renovation of municipal public buildings'						0.78	0.78	1.56
8.3.2	Renovation of public buildings at national level		10.8	10.8	10.8	10.8	10.8	10.8	64.80
				7.09	7.09	7.09	7.09	7.09	35.45
					0.61	0.61	0.61	0.61	2.44
8.3.3	Renovation of public buildings at regional level		7.7	7.7	7.7	7.7	7.7	7.7	46.20
				4.32	4.32	4.32	4.32	4.32	21.60
8.3.4	Programme for the renovation (modernisation) of halls of residence of higher education and vocational training institutions		0.81	0.81	0.81	0.81	0.81	0.81	4.86
				5.80	5.80	5.80	5.80	5.80	28.98
					0.56	0.56	0.56	0.56	2.23



8.3.5	Programme for the renovation (modernisation) of buildings of educational institutions so as to reduce energy consumption costs.		<b>6.63</b>	6.63	6.63	6.63	6.63	6.63	<b>39.78</b>
				<b>9.33</b>	9.33	9.33	9.33	9.33	<b>46.65</b>
					-	-	-	-	-
						-	-	-	-
							-	-	-
8.3.6	State investments, climate change and other programmes		<b>0.919</b>	0.919	0.919	0.919	0.919	0.919	<b>4.59</b>
					<b>8.710*</b>	8.710	8.710	8.710	<b>34.84</b>
						<b>1.987*</b>	1.987	1.987	<b>5.96</b>
							<b>4.428</b>	4.428	<b>8.86</b>
8.3.7	Ignalina region public buildings Programme		<b>9</b>	9	9	9	9	9	<b>54.00</b>
				<b>15.52</b>	15.52	15.52	15.52	15.52	<b>77.60</b>
					<b>21.2</b>	21.2	21.2	21.2	<b>84.80</b>
						-	-	-	-
							0.22	0.22	<b>0.44</b>
8.3.8	Municipal public buildings projects involving the implementation of measures to increase energy efficiency				<b>0.274</b>	0.274	0.274	0.274	<b>1.10</b>
						<b>0.965</b>	0.965	0.965	<b>2.89</b>
							<b>0.272</b>	0.272	<b>0.54</b>
<b>Total:</b>									<b>573.70</b>

\* The savings have been adjusted to take account of the data in the reports and energy certificates of municipal buildings renovated under the Climate Change Programme.

### 8.3.1. Programme to improve the energy efficiency of public buildings

Programme to improve the energy efficiency of public buildings approved by Government Resolution No 1328 of 26 November 2014 approving the Programme to enhance the energy efficiency of public buildings (hereinafter 'Public Buildings Programme'). With a view to renovating at least 3% of the total floor area of heated and/or cooled public buildings owned and occupied by the State each year, the Lithuanian Government set the following targets when approving the Public Buildings Programme:

- to renovate an area of 700 000 m<sup>2</sup> of public buildings by 2020, including an area of 470 000 m<sup>2</sup> of public buildings owned by the State (responsibility for which lies with the Lithuanian Ministry of Energy); and an area of 230 000 m<sup>2</sup> of public buildings owned by the municipalities (responsibility for which lies with the Ministry of the Environment);
- to save 60 GWh of annual primary energy in renovated public buildings by 2020.

The Public Buildings Programme has set a basic requirement for building renovation, i.e. the energy performance class of the building after renovation must be no lower than C. The Public Buildings Programme is financed from the Lithuanian national budget, municipal budgets, the European structural and investment funds, international organisations, private investors and other sources.

The Public Buildings Programme is being implemented in line with the following measures approved by the Ministry of Energy, the Ministry of Finance and the Ministry of the Environment: Description of conditions for the funding of projects under Measure 04.3.1-VIPA-V-101 'Renovation of State-owned buildings' coming under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds; Description of conditions for the funding of projects under Measure 04.3.1-VIPA-T-113 'Renovation of State-owned buildings' coming under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds; Measure No 04.3.1-FM-F-002 'Renovation of municipal public buildings' coming under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds, and measure No 04.3.1-FM-F-105 'Increasing energy efficiency in the public infrastructure' coming under Priority 4 'Promoting energy efficiency and the production and use of renewable energy resources' of the 2014-2020 Operational Programme for investments from European Union funds.

Projects under measures 04.3.1-VIPA-V-101 'Renovation of State-owned buildings' and 04.3.1-VIPA-T-113 'Renovation of State-owned buildings (II)' from the responsible/implementing body UAB 'Viešųjų investicijų ir plėtros agentūra' [the Public Investment Development Agency, 'VIPA'] were being implemented in 2019, and no energy savings have yet been achieved. Measure 04.3.1-FM-F-002 'Renovation of municipal public buildings' saved 0.78 GWh in 2019 according to data of UAB 'Viešųjų investicijų ir plėtros agentūra'. Total energy savings **up to 2020 from measures deployed in 2019** amount to **1.56 GWh**. Energy savings in 2019 are shown in Table 8.3.

Measure 04.3.1-FM-F-105 'Improving energy efficiency in public infrastructure' saved 1.76 GWh in 2019 according to data of UAB 'Viešųjų investicijų ir plėtros agentūra'. Total energy savings **up to 2020 from measures deployed in 2019** amount to **3.53 GWh**. Energy savings in 2019 are shown in Table 8.3.

### 8.3.2. Renovation of public buildings at national level

According to data supplied by the Lithuanian Business Support Agency, Measure VP3-3.4-ŪM-03-V 'Renovation of public buildings at national level' coming under Priority VPS-3-3 of the Operational Programme for the promotion of cohesion, 'Environment and sustainable development' (hereinafter the 'Renovation of buildings at national level' measure) resulted in a saving of 0.61 GWh in 2017. Total energy savings **up to 2020 from measures deployed in the period 2015-2017** amounted to **102.69 GWh**. Energy savings in the period 2015-2017 are shown in Table 8.3.

During the 2007-2013 programming period, the implementation of projects financed from EU funds was completed on 31 December 2015, and Lithuania successfully reported about their implementation to the European Commission on 28 March 2017. As a result, there are no new savings for the period 2018-2020.

### 8.3.3. Renovation of public buildings at regional level

According to data supplied by the Lithuanian Business Support Agency, Measure VP3-3.4-ŪM-03-V 'Renovation of public buildings at national level' coming under Priority VPS-3-3 of the Operational Programme for the promotion of cohesion, 'Environment and sustainable development' (hereinafter the 'Renovation of buildings at national level' measure) resulted in no renovated

buildings or new savings in 2017. Total energy savings **up to 2020 from measures deployed in the period 2015-2017** amounted to **67.80 GWh**. Energy savings in the period 2015-2017 are shown in Table 8.3.

During the 2007-2013 programming period, the implementation of projects financed from EU funds was completed on 31 December 2015, and Lithuania successfully reported on their implementation to the European Commission on 28 March 2017. As a result, no new savings are arising in the period 2018-2020.

#### **8.3.4. Programme for the renovation of halls of residence of higher education and vocational training institutions**

According to data provided by VIPA, implementation of the Programme for the renovation (modernisation) of the halls of residence of higher education and vocational training institutions resulted in a saving of 0.56 GWh in 2017. Total energy savings **up to 2020 from measures deployed in the period 2015-2017** amount to **36.07 GWh**. Energy savings in the period 2015-2017 are shown in Table 8.3.

#### **8.3.5. Programme for the renovation of buildings of educational establishments**

No data were received concerning the results of the implementation of the Programme for the renovation (modernisation) of buildings of educational establishments giving rise to a reduction of energy consumption costs in the period 2018-2019. Total energy savings **up to 2020 from measures deployed in the period 2015-2017** amount to **86.43 GWh**. Energy savings in the period 2015-2017 are shown in Table 8.3.

#### **8.3.6. Public buildings for the State Investment, Climate Change and other programmes**

For the purposes of implementing the State Investment Programme and using other State budget funds, the data provided by the Lithuanian ministries and their subordinate bodies on the public buildings which they manage and which have been renovated show that in 2019 the energy saving was 4.428 GWh. It should be noted that energy savings from projects funded from the Climate Change Programme have been added to the energy savings achieved in 2017 and 2018. Total energy savings **up to 2020 from measures deployed in the period 2016-2019** amount to **54.25 GWh**. Energy savings in the period 2016-2019 are shown in Table 8.3.

#### **8.3.7. Energy efficiency improvement projects for municipal public buildings in the region of the Ignalina nuclear power plant**

Another of the areas eligible for funding under the Ignalina regional public buildings Programme relates to projects to increase the energy efficiency of public buildings in the municipal region of the Ignalina power plant. According to information provided by the Central Project Management Agency on renovated public buildings in the municipality of Visaginas, savings amounted to 0.2205 GWh in 2019.

It should be noted that, owing to a technical error, the 2016 Report on the progress achieved towards national energy efficiency targets included 7.55 GWh in 2015 and 14.26 GWh in 2016 in energy savings from buildings renovated under the State Investment Programme. Correcting this error

produces a total energy saving for the Ignalina Programme **up to 2020 for buildings renovated in the period 2015-2019 of 216.84 GWh. There were no energy savings under the Ignalina Programme in 2018.**

Energy savings in the period 2015-2019 are shown in Table 8.3.

The building renovation measures have a lifetime of 25 years.

### **8.3.8. Municipal public buildings projects involving the implementation of measures to increase energy efficiency**

For the purposes of implementing the measure of improving energy efficiency in municipal public buildings, data supplied by the Central Project Management Agency show that **0.272 GWh** was saved in **2019**. Total energy savings **up to 2020 from measures deployed in the period 2017-2019** amounted to **4.54 GWh**. Energy savings in the period 2017-2019 are shown in Table 8.3.

## **8.4. Energy audits of industrial enterprises**

The Lithuanian Energy Agency, as the designated authority, supervises the performance of energy audits in the Republic of Lithuania. The designated body carries out compliance checks and quality control in respect of energy audit reports.

The obligation on the part of enterprises other than small and medium-sized enterprises (hereinafter 'large enterprises') to perform energy audits stems from the implementation of the energy efficiency provisions of Directive 2012/27/EU . Article 8 of Directive 2012/27/EU provides that Member States shall ensure that enterprises other than small and medium-sized enterprises are required to carry out an energy audit at least every four years.

The Minister for Energy has approved the Description of the Procedure for monitoring the energy audits and reporting of large undertakings. The procedure for performing an energy audit and for drawing up an audit report and submitting it to the Lithuanian Energy Agency is set out in this description. Large undertakings were required to submit an audit report to the Lithuanian Energy Agency for the first time by 1 July 2017.

The Lithuanian Energy Agency, acting on the basis of the Description of the procedure for monitoring the energy audits and reporting of large undertakings and the lists received from the Inter-ministerial Tax Data Repository, each year informs large undertakings by 31 December of their obligation to submit an audit report to it by 5 December of the following year. 37 companies were informed about the obligation to submit an energy audit report in 2019. Audit reports were submitted by 17 companies. 3 companies provided information about the audit carried out. 16 companies reported that they did not have an audit obligation (i.e. they do not own any managed buildings or means of transport, or their annual energy consumption in assets owned is less than 20%). One undertaking (which had gone bankrupt) did not provide any information .

### **8.4.1. Economic and Innovation Facility 'Audit for Industry LT' of the Republic of Lithuania**

In Lithuania, industrial enterprises seeking to perform energy audits and implement the energy efficiency improvement measures recommended in the audit report receive support from the European Union structural funds and budgetary funds. Measure No 04.2.1-LVPA-K-804 'Audit for industry LT', which implements Priority 4 'Promoting energy efficiency and production and use of renewable energy resources' of the Operational Programme, was approved as part of the Plan for implementing priority implementing measures under the 2014-2020 Operational Programme for investments from European Union funds, as approved by Order No 4-933 of the Minister for the Economy of 19 December 2014 approving the Plan for implementing priority implementing

measures under the 2014-2020 Operational Programme for investments from European Union funds and the schedule of instructions for calculating national monitoring indicators.

Measure No 04.2.1-LVPA-K-804 'Audit for industry LT' provides funding for performing energy audits at industrial enterprises, and the funding takes the form of a non-repayable subsidy. The following applicants may apply for EU support under this measure:

- micro, small and medium-sized industrial enterprises;
- large industrial enterprises, provided that an energy audit is performed in addition to the mandatory energy audit required under Directive 2012/27/EU.

**Under Measure 04.2.1-LVPA-K-804 'Audit for industry LT', 11 energy audits were carried out at industrial enterprises in 2018, while no data have been provided for 2019.** Data on energy savings are not available. In the audits completed, the proposed energy performance enhancement measures must be deployed within three years of completion of the audit. According to the data from the competent authority, the Ministry of the Economy and Innovation, information on energy consumption and consumption trends is not gathered or assessed as an indicator for monitoring the implementation of the measure. For this reason, the competent authority is unable to provide figures for energy savings.

#### **8.4.2. Relief for industry in the form of the recovery of part of the cost of providing services of public interest**

Lithuanian Government Resolution No 182 of 20 February 2019, which amended the Description of the Procedure for the administration of funds for public interest services in the electricity sector, lays down the procedure for recovering part of the cost of providing services of public interest. Under that procedure, electricity-intensive undertakings may benefit from relief in respect of services of public interest in the electricity sector with regard to electricity generation using renewable energy sources (hereinafter 'RES PIS'). For the period 1 January 2019 to 31 December 2028, undertakings with no overdue PIS funds and which consume more than 1 GWh of electricity annually may recover 85% of the portion of the RES PIS price paid for electricity consumed in excess of 1 GWh in the previous calendar year. Once recovered, RES PIS funds are to be allocated by undertakings to the implementation of the best energy efficiency improvement measures recommended in the energy audit carried out in accordance with the procedure laid down in the Lithuanian Law on the improvement of energy efficiency. Undertakings applying to recover PIS funds have considerable potential to implement the best energy efficiency measures and to achieve a greater reduction in energy consumption. Undertakings have already started to introduce measures, but no reduction in energy consumption has yet been achieved.

#### **8.5. Implementation of energy awareness and consultancy agreements**

The energy awareness and consultancy agreements are implemented pursuant to the provisions of the Lithuanian Law on improving energy efficiency and of the Description of the procedure for the conclusion of energy awareness and consultancy agreements approved by Order 1-221 of 25 August 2017 of the Lithuanian Minister for Energy approving the Description of the procedure for the conclusion of energy awareness and consultancy agreements. The purpose of these agreements is to educate and advise consumers on energy-saving measures and decisions that change consumer behaviour and habits and increase energy efficiency.

By the end of 2019, 69 final energy awareness and consultancy agreements had been concluded between the Ministry of Energy and energy supply companies on issues relating to the improvement of energy efficiency.

The Lithuanian Energy Agency, as the authority empowered to monitor and supervise the implementation of education and consultancy agreements, checked the implementation documents for the educational and consultancy measures of suppliers in the second quarter of 2020.

In most cases, suppliers achieved energy savings by implementing the measure ‘Publication of information on websites’ and ‘Publication of information in the press or printed matter’. For the purposes of implementing this type of measure, consumer education and consultancy agreements signed by suppliers create the conditions for consumers to access relevant available information. In 2019, implementation of these measures basically allowed final consumers to be provided with general information and household energy savings advice in a readily understandable form. Greater potential for saving energy comes from implementing the measure ‘Consultancy provided at the consumer’s premises’, during which a visit is paid to the consumer’s household, deficiencies are identified and recommendations are given on matters relating to the improvement of energy efficiency. This measure was planned in many supplier agreements, but when it came to implementation, funding and human resources were limited, meaning that suppliers’ employees could only pay direct visits to some final consumers.

The Lithuanian Energy Agency, as the authority empowered to monitor and supervise the implementation of energy consumer education and consultancy agreements, has checked a representative sample of data and the methods used to calculate the energy savings from energy saving measures declared by energy suppliers over the period 2017 to 2019. The total quantity of energy savings achieved by energy suppliers who have concluded education and consultancy agreements with the Ministry of Energy is shown in Table 8.5.

The savings effect of this measure **in 2019** reached **149.86 GWh**.

**Table 8.5 Total quantity of energy saved, GWh**

Measure	Energy savings, GWh				
	2017	2018	2019	2020	Total
Energy education and consultancy agreements	41.86	201.05	149.86	-	392.77
<b>Total:</b>					<b>392.77</b>

## 8.6. Implementation of energy saving agreements

Agreements with energy companies on energy savings are one of the energy-saving measures mentioned in the Law on improving energy efficiency.

These agreements involve large companies in the electricity and gas sector (transmission system and distribution system operators) which undertake directly to initiate and participate in the implementation of energy efficiency improvement measures with final customers and to achieve individually determined final energy savings.

These agreements were concluded in 2017, and the companies in question committed to achieving the following final energy savings by 31 December 2020: The electricity distribution company LITGRID AB has undertaken to achieve savings of **146.60 GWh** and the gas distribution operator AB Amber Grid savings of **122.54 GWh**, while AB Energises skirstymo operatorius and the Ministry of Energy have agreed to revise the operator’s commitment with regard to energy savings among final consumers down to **1 536.00 GWh**. Additionally, in 2019 a bilateral energy saving agreement was concluded between the Ministry of Energy and AB Vilniaus šilumos tinklai [Vilnius heat networks] under which the heat supplier undertook to save **0.0426 GWh** at the level of final consumers by 31 December 2020.

The Lithuanian Energy Agency, as the authority empowered to monitor and supervise the implementation of energy saving agreements, has checked a representative sample of data and the methods used to calculate the energy savings measures declared by energy companies over the period 2017 to 2019. The total quantity of energy savings achieved by energy companies who have concluded energy saving agreements with the Ministry of Energy is shown in Table 8.6.

**Table 8.6 Total quantity of energy saved, GWh**

Measure	Energy savings, GWh				
	2017	2018	2019	2020	Amount

Energy saving agreements with energy undertakings	439.07	339.74	339.74	339.74	<b>1 458.29</b>
		54.40	54.40	54.40	<b>163.21</b>
			16.05	16.05	<b>32.11</b>
				0.00	<b>0.00</b>
<b>Total:</b>					<b>1 653.61</b>

\*Figures corrected further to verification of the data gathered by the Lithuanian Energy Agency.

## 8.7 Renewal of the public transport fleet

Energy efficiency objectives in the transport sector focus on developing sustainable urban mobility, improving road safety, deploying smart transport systems and more efficient vehicles, and developing green transport. The renewal of public transport vehicle fleets by municipal authorities through the replacement of vehicles with new, more efficient ones was funded by measures 04.5.1-TID-V-517 ‘Renewal of the urban public transport vehicle fleet’ and 04.5.1-TID-R-518 ‘Renewal of the local public transport vehicle fleet’ coming under Priority 4 ‘Promoting energy efficiency and the production and use of renewable energy resources’ of the 2014-2020 Operational Programme for investments from European Union funds. The measures are being funded by means of a non-repayable grant.

Between 2018 and 2019, public transport vehicles were renewed in the municipalities of Radviliškis, Šiauliai, Klaipėda, Vilnius, Panevėžys and Kaunas.

Energy savings from the renewal of the public transport fleet are shown in Table 8.7.

**Table 8.7 Quantity of energy saved by transport vehicles, GWh**

Measure	Energy savings*, GWh			
	2018	2019	2020	Amount
Renewal of the public transport fleet	1.07	1.07	1.07	<b>3.20</b>
		1.66	1.66	<b>3.31</b>
			0.00	<b>6.51</b>

\*Figures corrected further to verification of the data gathered by the Lithuanian Energy Agency.

The principle for calculating energy savings (methodology) is based on an assessment of the following technical parameters of vehicles for each project: annual mileage (km) and fuel or energy consumption over a distance of 100 km.

## 8.8 The Climate Change and Lithuanian Environmental Protection Investment Fund programmes

The Lithuanian **Climate Change Programme**, approved in 2010 by the Law on financial instruments for climate change management, is intended to provide support for measures to improve energy consumption and production efficiency in relation to the modernisation of residential and public buildings, and for the implementation of other projects giving rise to the most efficient reduction of greenhouse gas emissions in the fields of energy, industry, construction, transport, agriculture, waste management, etc. Programme funds are to be used in accordance with the annual estimates for the use of the funds and the detailed plans set out therein. The Description of the Procedure for the use of Climate Change Special Programme funds, approved by the Lithuanian Minister for the Environment by Order No D1-275 of 6 April 2010, stipulates that not less than 40% of the Programme funds must be allocated to projects aimed at increasing energy consumption and production efficiency. The annual estimates for the use of the funds and the detailed plans set out

therein (which also determine the funding intensity when awarding grants), which calculate the energy savings for projects implemented, are approved by orders of the Lithuanian Minister for the Environment, as follows:

Order of the Minister for the Environment No D1-129 of 7 March 2019 approving the estimates for the use of Climate Change Programme funds in 2019;

Order of the Minister for the Environment No D1-328 of 25 April 2018 approving the estimate for the use of Climate Change Special Programme funds in 2018;

Order of the Minister for the Environment No D1-67 of 6 June 2018 approving the plan detailing the estimate for the use of Climate Change Special Programme funds in 2018;

Order of the Minister for the Environment No D1-279 of 4 April 2017 approving the estimate for the use of Climate Change Special Programme funds in 2017;

Order of the Minister for the Environment No D1-450 of 26 May 2017 approving the plan detailing the estimate for the use of Climate Change Special Programme funds in 2017;

Order of the Minister for the Environment No D1-130 of 22 February 2016 approving the estimates for the use of Climate Change Special Programme funds in 2016;

Order of the Minister for the Environment No D1-165 of 7 March 2016 approving the plan detailing the estimate for the use of Climate Change Special Programme funds in 2016;

Order of the Minister for the Environment No D1-127 of 17 February 2015 approving the estimate for the use of Climate Change Special Programme funds in 2015;

Order of the Minister for the Environment No D1-278 of 7 April 2015 approving the plan detailing the estimate for the use of Climate Change Special Programme funds in 2015;

Order of the Minister for the Environment No D1-118 of 7 February 2014 approving the estimates for the use of Climate Change Special Programme funds in 2014;

Order of the Minister for the Environment No D1-286 of 17 March 2014 approving the plan detailing the estimate for the use of Climate Change Special Programme funds in 2014;

Order of the Minister for the Environment No D1-280 of 24 April 2013 approving the estimate for the use of Climate Change Special Programme funds in 2013;

Order of the Minister for the Environment No D1-310 of 2 May 2013 approving the plan detailing the estimate for the use of Climate Change Special Programme funds in 2013;

Order of the Minister for the Environment No D1-248 of 21 March 2012 approving the estimates for the use of Climate Change Special Programme funds in 2012;

Order of the Minister for the Environment No D1-300 of 6 April 2012 approving the plan detailing the estimate for the use of Climate Change Special Programme funds in 2012.

Energy saving measures are also implemented in Lithuania by means of financial support in the form of subsidies to industrial and other business enterprises under the **Lithuanian Environmental Investment Fund Programme** established by the Lithuanian Pollution Tax Law. The use of funds under this Programme, the selection of investment projects, the funding conditions and the monitoring of implementation are regulated by the Description of the procedure for the implementation and supervision of investment projects funded by the Lithuanian Environmental Investment Fund Programme, approved by Order No 437 of the Minister for the Environment of the Republic of Lithuania of 29 August 2003 (hereinafter 'the Description of the procedure'). The Description of the procedure stipulates that financial support in the form of subsidies is to be granted to legal persons operating in the Republic of Lithuania which implement environmental protection investment projects reducing the negative impact of economic activities on the environment and ensuring a sustained environmental-protection effect. It also stipulates that financial support (subsidies) should be granted in accordance with the funding axis approved each year by order of the Lithuanian Minister for the Environment. Under the said funding axis, one type of preventive project eligible for support is that of projects relating to the introduction of production technologies to reduce emissions into ambient air, which, in addition to reducing emissions into the environment, also give rise to an energy effect, e.g. the recovery of up to 20% of the energy from smoke or cooling installations through the implementation of technological measures by producers of heat and other products (e.g. economisers and heat pumps). The funding axes for the use of funds under the Lithuanian Environmental



Investment Fund Programme according to which the energy savings for implemented projects are calculated were approved by:

Order of the Minister for the Environment No D1-446 of 1 June 2018 approving the estimate for the use of Lithuanian Environmental Investment Fund Programme funds in **2018**;

Order of the Minister for the Environment No D1-361 of 4 May 2017 approving the funding axes for the use of Lithuanian Environmental Investment Fund Programme funds in **2017**;

Order of the Minister for the Environment No D1-153 of 1 March 2016 approving the funding axes for the use of Lithuanian Environmental Investment Fund Programme funds in **2016**;

Order of the Minister for the Environment No D1-92 of 3 February 2015 approving the estimate for the use of Lithuanian Environmental Investment Fund Programme funds in **2015**;

Order of the Minister for the Environment No D1-452 of 3 May 2014 approving the funding axes for the use of Lithuanian Environmental Investment Fund Programme funds in **2014**;

Energy savings under the Climate Change and Lithuanian Environmental Protection Investment Fund Programmes are shown in Tables 8.8.1 and 8.8.2.

**Table 8.8.1. Total energy savings under the Lithuanian Environmental Protection Investment Fund Programme, GWh**

Measure	Energy savings, GWh							
	2014	2015	2016	2017	2018	2019	2020	Amount
Lithuanian Environmental Protection Investment Fund Programme	11.93	11.93	11.93	11.93	11.93	11.93	11.93	<b>83.54</b>
		4.52	4.52	4.52	4.52	4.52	4.52	<b>27.10</b>
			6.23	6.23	6.23	6.23	6.23	<b>31.13</b>
				0.00	0.00	0.00	0.00	<b>0.00</b>
					0.00	0.00	0.00	<b>0.00</b>
						0.00	0.00	<b>0.00</b>
							0.00	<b>0.00</b>
<b>Total:</b>								<b>141.77</b>

Under the various strands of the Programme, economisers were installed for more efficient heat production in industrial and business premises. In the period 2014-2018, economisers with a combined power of 2.812 MW were installed for efficient heat recovery from boiler exhaust fumes. The principle/methodology applied to calculate energy savings is based on the additional heat recovery principle, where the main indicators used in the calculations are: the power of installations, the year of their installation, and the equivalent number of operating hours.

**Table 8.8.2. Total energy savings under the Lithuanian Climate Change Programme, GWh**

Measure	Quantity of energy savings*, GWh							
	2014	2015	2016	2017	2018	2019	2020	Amount
The Lithuanian Climate Change Programme	20.69	20.69	20.69	20.69	20.69	20.69	20.69	<b>144.86</b>
		36.02	36.02	36.02	36.02	36.02	36.02	<b>216.14</b>
			96.26	96.26	96.26	96.26	96.26	<b>481.30</b>
				15.78	15.78	15.78	15.78	<b>63.11</b>
					25.75	25.75	25.75	<b>77.24</b>
						20.60	20.60	<b>41.20</b>
							0.00	<b>0.00</b>
<b>Total:</b>								<b>1 023.84</b>

\*The figures have been revised on the basis of data for Lithuania's long-term renovation strategy for 2021 from an official representative source.

The modernisation of heat production facilities and buildings was carried out under the different strands of the Programme. Replacing heating equipment is aimed at achieving more efficient

heat production in public and residential buildings by replacing inefficient heating installations with more efficient ones using renewable energy sources. During 2019 biofuel boilers with a combined power of 1.47 MW and heat pumps with a combined heat capacity of 4.5 MW were installed in order to replace old inefficient boilers. The principle/methodology applied to calculate energy savings is based on the reduction of the quantity of primary fuel (in the heating installation) required to produce the annual quantity of heat energy (Chapter 8.9).

Renovating (modernising) buildings is aimed at improving the energy characteristics of residential buildings. In 2019 a total of 19 687 m<sup>2</sup> of buildings with the lowest or no energy class were upgraded to B class buildings. The principle (methodology) applied to calculate energy savings is based on comparing energy costs per 1 m<sup>2</sup> before and after modernisation (according to data taken from buildings' energy performance certificates).

## 8.9 Additional energy efficiency measures taken by Lithuania to reach the 2020 targets

In order to adequately meet its energy efficiency targets for 2020, Lithuania has put in place additional energy efficiency measures. A new policy measure to improve energy efficiency in the household sector (the replacement of heat generation installations) was introduced in 2019. Its aim is to encourage households to switch from inefficient heat generation systems feeding heat to a water-based heating system to more efficient installations using renewable energy sources in order to achieve and maintain the required indoor temperature levels in one or more enclosed spaces. This takes the form of compensatory payments. Only environmentally friendly and the most efficient new technologies are promoted, i.e. new biofuel boilers compliant with the requirements for class 5 efficiency and emissions according to Lithuanian Standard LST EN 303-5:2012 'Heating boilers. Part 5. Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW. Terminology, requirements, testing and marking'; heat pumps with geothermal energy being a source of energy, water being an energy source distribution medium (ground-water) and with a coefficient of performance as specified in the technical documentation of the installation according to European Commission Regulation No 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters (COP) at standard operating conditions (or at outdoor temperature of +7 °C) being at least 3.5; heat pumps with hydrothermal energy being a source of energy, water being an energy source distribution medium (water-water) and with a coefficient of performance as specified in the technical documentation of the installation according to European Commission Regulation No 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters (COP) at standard operating conditions (or at outdoor temperature of +7 °C) being at least 3.5; heat pumps with aerothermal energy being a source of energy, water being an energy source distribution medium (air-water) and with coefficient of performance being specified in the technical documentation of the installation according to European Commission Regulation No 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters (COP) at outdoor temperature of +7 °C being at least 3.0.

The energy savings achieved under this measure are shown in Table 8.9.

Table 8.9 Total energy savings due to the replacement of heat generation installations, GWh

Measure	Quantity of energy savings, GWh				
	2017	2018	2019	2020	Amount
Replacement of heat generation installations (1 120 units; 12.7 MW)	-	-	55.8	55.8	111.6

Total:	111.6
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The calculation methodology for energy savings based on this measure is approved by Order No 1-12 of the Minister of Energy of 17 January 2019 on the approval of project funding description No 1 for measure 04.3.2-LVPA-V-111 'Boiler replacement in households' of priority 4 'Promoting the production and distribution of energy derived from renewable sources' of the Operational Programme for EU Structural Funds Investments for 2014-2020. A comparison is made between the primary fuel or energy requirement of each new and replaced old heat generator needed to produce the annual quantity of heat in the household.

The demand for primary fuel or energy of every heat generation installation, outdated and new ones individually, expressed in energy equivalent (kgne) is calculated according to the formula:

$$PK_p = \frac{RK_K}{\check{S} \times N_K} \times PKK$$

where:

$PK_p$  – demand for primary fuel or energy (kgne);

$RK_K$  – heat to be produced per household per year (kWh). This is calculated according to the formula  $RK_K = G_{kW} \times H_{VAL}$ , where:

$G_{kW}$  – installation power (kW) or power of an outdated installation per household area given that the installation of capacity of 1 kW is necessary to produce heat for the total area of 10 m<sup>2</sup>;

$H_{VAL}$  – equivalent installation hours per year as regulated by European Commission Guidelines 2013/114/EU of 1 March 2013. In view of the climate conditions in Lithuania, they are as follows:

Installation	Equivalent installation hours per year, hr
Heat pump air-water and biofuel-powered boiler	Tel No. (1) 710;
Heat pump ground-water and water-water	2 470

$\check{S}$  Net calorific value of fuels with equivalent value as regulated by Annex IV 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:

Primary fuel or energy type	C, kWh
Wood (standard 25% humidity), kg	3.833
Pellets (standard 10% humidity), kg	4.667

Electricity, kWh	1
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$N_K$  – coefficient of performance of a heat generation installation. The coefficient of performance of a new and old heat generation installation is specified in the technical passport of the installation.

$PKK$  – coefficient of primary fuel or energy conversion into an equivalent unit of energy:

Primary fuel or energy type	$PKK$ , kgoe
Wood (standard 25% humidity), kg	0.33
Pellets (standard 10% humidity), kg	0.401
Electricity, kWh	0.086