

## **ANNEX 4**

### **LONG-TERM PLAN FOR THE RENOVATION OF THE NATIONAL BUILDING STOCK**

#### **CHAPTER I INTRODUCTION**

1. The purpose of the Long-term Plan for the renovation of the national building stock ('the Plan') is to establish the State's main policies for mobilising investment in the renovation of the national building stock, taking account of the requirements of Article 4 of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (OJ L 315, 2012, p. 1) ('Directive 2012/27/EU'). The Law of the Republic of Lithuania on Energy Efficiency is the main legal act of the Republic of Lithuania which will be adopted soon and will transpose into national law the provisions of Directive 2012/27/EU.

2. The Plan was drawn up also in accordance with:

2.1. Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (OJ L153, 2010, p. 13) ('Directive 2010/31/EU') requiring more concrete actions to be laid down with a view to achieving the great unrealised potential for energy savings in buildings and reducing the large differences between Member States' results in this sector as buildings have an impact on long-term energy consumption. Given the long renovation cycle for existing buildings, new and existing buildings that are subject to major renovation should therefore meet minimum energy performance requirements adapted to the local climate. Member States shall ensure that, by 31 December 2020, all new buildings are nearly zero-energy buildings; and after 31 December 2018, new buildings occupied and owned by public authorities are nearly zero-energy buildings. The Law of the Republic of Lithuania on Construction and the Law of the Republic of Lithuania on Energy are the main legal acts of the Republic of Lithuania which transpose the provisions of Directive 2010/31/EU into national law;

2.2. The National Energy Independence Strategy, as approved by Resolution No XI-2133 of the Seimas of the Republic of Lithuania of 26 June 2012 approving the National Energy Independence Strategy, which indicates that one of the major problems in the energy sector is inefficient use of thermal energy. In Lithuania the share of household heating costs is much larger than in other Member States of the European Union ('the EU'). In Lithuania, the share of household costs for heating 50 m<sup>2</sup> accounts for 13.3 %, whereas, for example, in Estonia it represents 8.0 % and in the Scandinavian countries 1.5 %. To deal with the problem, it is proposed to improve energy efficiency, which can be achieved through building renovation;

2.3. The Lithuanian Housing Strategy, as approved by Resolution No 60 of the Government of the Republic of Lithuania of 21 January 2004 approving the Lithuanian Housing Strategy, is aimed at establishing long-term housing policy goals and priorities with a view to improving legal acts regulating the housing sector and the management and public information system and drawing up and implementing programmes and measures for the development, renovation and modernisation of housing and for financial and social support to the population. The period of implementation of the provisions of this strategy is until 2020;

2.4. The Programme for the renovation (modernisation) of multi-apartment buildings, as approved by Resolution No 1213 of the Government of the Republic of Lithuania of 23 September 2004 regarding the Programme for the renovation (modernisation) of multi-apartment buildings ('the Programme for multi-apartment buildings'), which is aimed at encouraging owners of the multi-apartment buildings constructed in accordance with the technical construction regulations in force until 1993 to renovate (modernise) multi-apartment buildings to upgrade their energy performance and create conditions for doing so;

2.5. The Programme to improve energy efficiency of public buildings, as approved by Resolution No 1328 of the Government of the Republic of Lithuania of 26 November 2014, approving the Programme to improve energy efficiency of public buildings ('the Programme for public buildings'), which is aimed at transposing the provisions of Article 5 of Directive 2012/27/EU to improve energy efficiency of public buildings.

2.6. Data from the research study 'Establishment of a long-term strategy for mobilising investment in the renovation of the national stock of residential and commercial buildings, both public and private' carried out in 2013.

3. Definitions for the purposes of the Plan shall be used within the meaning of the Law of the Republic of Lithuania on Energy, the Law of the Republic of Lithuania on Spatial Planning, the Law of the Republic of Lithuania on Construction, Technical Construction Regulation STR 1.01.09:2003 'Classification of structures by purpose', as approved by Order No 289 of the Minister for the Environment of the Republic of Lithuania of 11 June 2003 approving Technical Construction Regulation STR 1.01.09:2003 'Classification of structures by purpose', and Technical Construction Regulation STR 2.01.09:2005 'Energy performance of buildings. Energy efficiency certification', as approved by Order No D1-624 of the Minister for the Environment of the Republic of Lithuania of 20 December 2005 approving Technical Construction Regulation STR 2.01.09:2005 'Energy performance of buildings. Energy efficiency certification'.

4. The Plan sets out a long-term approach to building renovation to guide investment decisions by legal and natural persons and financial institutions on building renovation; an overview of the national building stock; effective approaches to building renovation and priority groups of buildings relevant to the climatic zone; the means of financing of the Plan; long-term benefits of building renovation for various sectors; arrangements for implementation of and reporting on the Plan.

## **CHAPTER II GOALS AND OBJECTIVES OF THE PLAN**

5. Lithuania's short-term goal of national building stock renovation by 2020 is to renovate energy-inefficient residential and non-residential buildings by improving their energy efficiency.

6. Objectives in pursuing the short-term goal of the Plan:

6.1. To renovate 3 500 to 4 000 residential multi-apartment buildings, representing 9 to 11 % of the total number of residential multi-apartment buildings and reduce carbon dioxide emissions by from 182 000 to 208 000 tonnes;

6.2. To renovate 700 000 m<sup>2</sup> of public sector buildings, accounting for 5-6 % of the total area of public sector buildings and to reduce carbon dioxide emissions by at least 17 000 tonnes;

6.3. By renovating the buildings referred to in subparagraphs 6.1-6.2, to save 785-885 GWh of thermal energy, compared to 2013. Energy savings are estimated on the basis of the financing planned and the evaluation of buildings renovated between 2007 and 2013.

7. Lithuania's long-term goal of national building stock renovation by 2030 is to continue and further develop the building renovation policy launched in 2015-2020.

8. Objectives in pursuing the long-term goal of the Plan:

8.1. To renovate more than 4 000 residential multi-apartment buildings, representing 10-11 % of the total number of residential multi-apartment buildings, and reduce carbon dioxide emissions by 208 000 tonnes;

8.2. To renovate at least 800 000 m<sup>2</sup> of public sector buildings, accounting for 6 to 7 % of the total area of public sector buildings as the construction sector will have been adapted for the large-scale renovation of buildings. This is aimed at reducing carbon dioxide emissions by 20 000 tonnes.

### **CHAPTER III OVERVIEW OF THE NATIONAL BUILDING STOCK**

9. Lithuania has a total of 558 000 buildings, with a total area of 162 million m<sup>2</sup>. Residential buildings represent the biggest share in the building stock<sup>1</sup>, i.e. 87 % of the number of buildings and 67 % of the total area of the national building stock. Non-residential buildings account for 13 % of the number of buildings and 33 % of the total area of the national building stock.

10. The breakdown of residential and non-residential building area by purpose is as follows:

10.1. By building purpose, the biggest share of residential buildings by the total area of residential buildings belongs to houses with one or two apartment (49 %) and buildings with three or more apartments (multi-apartment buildings) (47 %);

10.2. By building purpose, the biggest share of non-residential buildings by the total area of the non-residential building is taken by production and industrial buildings (35 %), administrative buildings (17 %) and research buildings (15 %).

11. The stock of buildings by year of construction and by purpose is shown in Figure 1 of this annex. In Lithuania the majority of residential buildings are old (constructed before 1992). The largest share (65 %) of Lithuania's building stock by year of construction is made up of buildings constructed between 1961 and 1992 (65 %).

12. Groups of the building stock by location:

12.1. 61 % (372 000) of the buildings are in rural areas and 39 % (238 000) in urban areas;

12.2. 67 % (125 million m<sup>2</sup>) of the total area of buildings are in urban areas and 33 % (62 million m<sup>2</sup>) in rural areas.

13. Groups of the building stock by ownership and property management right:

13.1. 75 % of all buildings (according to the number of buildings) are owned by natural persons, 10 % by legal persons, 2 % by municipalities, 2 % by the State and 11 % by other persons;

13.2. 33 % of all buildings (according to the area of buildings) are owned by natural persons, 20 % by legal persons, 5 % by the State and municipalities each and 38 % belong to other persons;

13.3. 53 % of non-residential buildings (according to the number of buildings) are owned by natural persons, 30 % by legal persons, 5 % each by the State and municipalities, and 7 % belong to other persons;

13.4. 88 % of residential buildings (by number) are owned by natural persons, 1 % by legal persons, less than 1 % each by the State and municipalities, and 10 % belong to other persons.

#### **Energy performance profile of buildings**

14. The energy performance class of buildings and the annual heat demand are evaluated on the basis of information from the State Enterprise *Statybos produkcijos sertifikavimo centras* (Construction Products Certification Centre) and standard indicators set out in technical construction regulations. The energy performance class of a specific building shall be evaluated by experts certified for the certification of energy performance of buildings.

15. The annual heat demand shall be broken down as follows by energy performance class:

15.1. annual heat demand < 40 kWh/m<sup>2</sup> for energy performance class A;

15.2. annual heat demand 40-100 kWh/m<sup>2</sup> for energy performance class B;

15.3. annual heat demand 100-200 kWh/m<sup>2</sup> for energy performance class C;

15.4. annual heat demand 150-350 kWh/m<sup>2</sup> for energy performance class D;

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<sup>1</sup> The building stock does not include transport, garage, warehouse, ancillary farm and other (livestock farm, farm, greenhouse and gardening) buildings.

15.5. annual heat demand > 300 kWh/m<sup>2</sup> for energy performance class E, F, G<sup>2</sup>.

16. Data on average energy performance in individual groups of buildings are presented in Table 1 of this annex. 45 000 buildings (8 %) out of the total of 558 000 buildings were evaluated. An evaluation of the energy performance profile of residential buildings for each group of buildings by year of construction covered > 10 % of all buildings within each group. An evaluation of the profile of all other buildings covered > 20 % of all buildings by group and year of construction. According to the evaluation, buildings constructed before 1940 and until 1992 mainly have energy performance classes E, F or G. Most buildings constructed between 1993 and 2005 have energy performance class C, and those constructed from 2006 have energy performance class B.

## **CHAPTER IV APPROACHES TO BUILDING RENOVATION**

### **Building renovation measures**

17. The energy efficiency improvement measures implemented and being implemented in the sectors of households, services, industry, transport and energy are set out in the Energy Efficiency Action Plan, as approved by Order No 1-149 of the Minister for Energy of the Republic of Lithuania of 30 May 2014 approving the Energy Efficiency Action Plan.

18. Buildings should be renovated using sets of measures, gradually expanding the range of commonly used measures and implementing better current and new measures improving energy efficiency of buildings.

19. As the whole territory of Lithuania is in the cool temperate climate zone, the impact of climatic zone on the energy performance of buildings should be deemed uniform throughout the country. Although the annual precipitation rate, wind speed and average annual air temperature in the western part of the country are higher than in the rest of the country, the difference in energy consumption represents only up to 2 %. The total share of buildings (without ancillary buildings) located in Western Lithuania accounts for 7.2 % of the total national building stock.

20. Most building renovation measures ('measures') can be applied to all groups of buildings. The measures are not applied in certain cases upon evaluating the following criteria:

20.1. Application of the measures is impossible for technical reasons (e.g. basement ceiling is not insulated if there is no basement in the building; balconies are not glazed if there are none, etc.);

20.2. No measures are applicable in unheated buildings;

20.3. Due to special architectural or other requirements relating to renovation (in the case of major renovation of buildings).

Data on the applicability of measures in buildings of different purpose are presented in Table 2 of this annex.

21. A set of measures was formed by selecting from Table 2 of the annex the optimum measures suitable for major renovation of buildings, including the following measures: lighting upgrading, insulation of facade walls and the plinth wall, the roof or attic, basement ceiling and floor, replacement of entrance doors and windows, glazing of balconies and loggias, refitting of the heating system and modernisation of the ventilation system. The set of measures was formed assuming that the building has not been subject to any renovation measures or that minimum renovation measures have been implemented. Based on the outcomes of the buildings renovated between 2007 and 2013, the application of the measures within this set of measures usually achieves energy performance class C.

22. The average price of saving 1 kWh of heat energy using the set of measures is about EUR 1.2-1.7. The total requirement of investment in the application of this set of measures is EUR 87-145/m<sup>2</sup>. The average payback period of the set of measures is 13-20 years; in the meantime the

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<sup>2</sup> Classes E, F and G are combined as the condition of all buildings falling within these classes is unsatisfactory and their annual heat demand is > 300 kWh/m<sup>2</sup>.

acceptable payback time is 25-30 years. Hence, the measures within the set are suitable for use for further 10 to 12 years after the payback time as the set pays back faster than building renovation measures wear out and thus energy savings are achieved. This set of measures is the optimal investment set of saving measures as its implementation requires a minimum amount of investments, which makes it possible to renovate a larger number of buildings.

23. Given that an investment project, or an investment plan in the case of multi-apartment buildings, is drawn up for each building before its renovation evaluating accurately the condition of the building, its energy efficiency and the need for renovation measures, the set of measures may be used implementing all of the measures or using them selectively on a case-by-case basis (e.g. where only old windows are replaced as some of the windows have already been replaced in the building).

### **Renovation of priority groups of buildings**

24. Priority groups in the building stock are groups of buildings the renovation of which would significantly contribute to heat energy savings and be important to the majority of the public, i.e. buildings that can be renovated using measures for the major renovation of buildings seeking the greatest heat energy savings with minimum investments.

25. The purposefulness of renovating buildings which are subject to special building renovation conditions (cultural heritage buildings and those in protective areas are subject to separate rules on construction project preparation and implementation; religious buildings are not subject to the requirements of the technical construction regulation relating to energy performance) shall be evaluated on a case-by-case basis. Such buildings account for 10 % of the building stock's area. Large-scale building renovation measures shall be applied to the remaining part (90 %) of the building stock.

26. The purpose of the major renovation of buildings is to maximise heat energy savings and it is, therefore, appropriate to include in priority groups buildings of the lowest energy performance attributable to Classes E, F and G. The number of buildings of such classes is the largest in Lithuania, i.e. they account for about 85 % of the total area of the building stock. According to Table 2, all buildings attributable to Classes E, F and G are constructed before 1993. However, buildings constructed before 1940 are not attributed to the priority group of buildings as their renovation is often not cost-effective because of a very poor condition of the building.

27. According to the 2012 data, in Lithuania multi-apartment residential buildings consume the largest amount of heat energy, i.e. 54 % of the final heat energy consumption. Furthermore, since by area they account for 60 % of the building stock, their renovation would contribute significantly to the reduction of energy consumption and improvement of social environment. A technical condition of public sector buildings owned by municipalities and the State has a great influence on human health as these buildings (healthcare and educational institutions, etc.) are public and hygiene norms have to be ensured therein. The renovation of residential and public sector buildings should be one of the key areas for building renovation as these buildings account for 75 % of the building stock by area.

28. Given the life cycle of a building and the period of full depreciation of renovation measures, priority groups of buildings are valid for a period until 2020. The priority group of buildings (for the renovation of the building stock until 2020) includes buildings of three or more apartments (multi-apartment buildings), residential buildings for various social groups and the administrative, cultural, research, sports, healthcare and special-purpose buildings of the public sector built between 1941 and 1992. Most of such buildings are buildings of Class E, F and G of energy efficiency to which large-scale building renovation measures can be applied. Other buildings are not included in the group of priority buildings until 2020 as they are attributed to energy efficiency classes A, B, C and D, subject to special renovation conditions, consuming a small share of fossil fuels for heat energy or are industrial or service sector buildings which should be renovated not through the measures of major building renovation.

29. Buildings which satisfy all the criteria set out (energy performance, year of construction, purpose and ownership) take an area of 40 000 m<sup>2</sup> or account for 33 % of the total building stock. The number and area of buildings within the priority group by year of construction are given in Table 3 of

the annex. As this table shows the total number and area of residential and non-residential buildings without separating buildings by ownership, it indicates buildings belonging to both the public sector and natural and other persons.

## **CHAPTER V FINANCING FACILITIES**

30. Between 2015 and 2020, it is planned to renovate a total of 3 500-4 000 residential buildings under the Programme for multi-apartment buildings and about 700 000 m<sup>2</sup> of public sector buildings under the Programme for public buildings. Between 2021 and 2030, it is planned to continue building renovation. The requirement of investments until 2020 was evaluated on the basis of the results of buildings renovated between 2007 and 2013. Investments required until 2020 for multi-apartment buildings amount to EUR 290-348 million, and for public sector buildings EUR 94-101 million. The requirement of investments is presented as an interval of values as each individual case requires a different number of facilities and different materials, and the prices of renovation work therefore differ.

31. In the 2007-2013 period, the largest financing source for multi-apartment buildings was financing through the facility 'JESSICA Holding Fund' ('JESSICA facility') of the Operational Programme for Promoting Cohesion administrated by the Ministry of the Environment. Currently, the key financing sources for ongoing multi-apartment building renovation operations for citizens are citizen funds, preferential loan funds and State subsidies. Most public sector buildings and social housing in multi-apartment buildings are renovated using EU support. In the future, the importance of various investment funds is expected to grow, which will enable both the population and State public bodies to perform renovation work gradually repaying loans.

32. In the 2007-2013 EU structural support programming period financing for the renovation of residential buildings was allocated through the JESSICA facility which received LTL 783 786 million in European Regional Development Fund and national resources for its implementation. The amount of EU and co-financing funds allocated between 2007 and 2013 to finance the measures aimed at improving energy efficiency of public sector buildings administrated by the Ministry of the Economy of the Republic of Lithuania reaches LTL 1 037.461 million. In the 2007-2013 programming period, the reduction of disparities in living environment and quality between Lithuania's major cities and other towns by bettering housing conditions and thus improving energy efficiency of buildings was financed in problem areas with the resources of EU funds under the regional measures of the Ministry of the Interior of the Republic of Lithuania the financing of which received LTL 201.172 million in EU and co-financing funds.

33. The 2014-2020 EU structural support period starting in 2014 will continue to favour the implementation of renovation projects in public buildings. The EU structural support funds envisaged under the thematic objective 'Promoting energy efficiency and the production and use of renewable energy sources' for the specific objectives of the Operational Programme are distributed as follows: EUR 320 million for the objective 'To increase the use of renewable energy sources'; and EUR 449 million for the objective 'To reduce energy consumption in public infrastructure and multi-apartment buildings'. The activities of this objective include multi-apartment and public sector building renovation and street lighting.

34. Private funds will be raised with the help of financial instruments. The model of energy service companies ('ESCO') should become an important model for the renovation of buildings. The ESCO model is a model where ESCO invests in energy efficiency of a building by signing a service agreement with the building owner taking on the risk of the efficiency of investment which depends on future heating bills and ESCO's energy saving obligations laid down in the agreement. The expected value of the ESCO model in Lithuania between 2015 and 2020 as a source of financing will be established taking account of good practices in European states. The renovation of public sector buildings (particularly those owned by State institutions) under the ESCO model would ensure additional financial opportunities to achieve energy saving targets.

35. The renovation measures for non-priority groups of buildings are divided into two areas: renovation of buildings in line with the heritage protection requirements and privately owned buildings the renovation of which is encouraged through information measures and funds from special programmes. Most of the buildings renovated in line with the heritage protection requirements were built before 1940 and are usually located in old towns. Religious buildings are also being renovated. Under the priority 'Public education, science and culture' of the 2014-2020 Lithuanian National Progress Programme it is planned to research and preserve/restore cultural heritage in a complex manner. To promote privately owned building renovation and energy savings, it is recommended to apply indirect building renovation measures, i.e. the implementation of projects giving publicity to building renovation opportunities and renovation benefits. In addition, the promotion of building rejuvenation under the Special Climate Change Programme is applied to residential buildings of one or two apartments by achieving Class C of energy performance of the building and reducing energy consumption costs by at least 20 %.

36. According to preliminary estimates, in pursuing the long-term objective of the 2020-2030 Plan, the requirement of investments for priority groups is about from EUR 434 million to EUR 579 million.

## **CAPTER VI BUILDING RENOVATION BENEFITS**

37. Benefits of building renovation may be direct and indirect. In most cases investors evaluate prospective direct benefits resulting from the renovation of buildings, whereas indirect benefits are more visible in the long run.

### **Direct benefits of building renovation**

38. In the 2007-2013 financial period, the actual energy savings from the renovated multi-apartment buildings and public buildings accounted for from 30 to 40 %. Based on these data, energy savings by 2020 from the renovation of the number of buildings planned under the Programme for multi-apartment buildings should reach 700-800 GWh, and under the Programme for public buildings should amount to around 85 GWh. Energy savings are presented as an interval of values as the condition of buildings before renovation, the number of measures applied during renovation and their properties and technological adaptation differ. The decreased energy consumption in buildings reduces energy costs for the population accordingly. According to the 2014 data, average monthly heating costs for a 50 m<sup>2</sup> apartment in Lithuania account for 13.3 % or LTL 107 per household member, while the renovation of residential properties using the set of measures can save up to 55 % of these costs; consequently, the share of expenditure on housing heating decreases from 13.3 % to 7.3 %.

39. The value of one apartment (of an average area of 66.6 m<sup>2</sup>) increases by about 10 % due to renovation of buildings using the set of measures where the building is in a large city and by about 30 % where the building is a smaller town or region.

40. The renovation of buildings ensures the appropriate indoor air temperature, the limit values of relative air humidity and air velocity, eliminates drafts and ensures the required indoor air humidity and ventilation, which reduces morbidity rates for such diseases as asthma, bronchitis, allergies, diseases of the upper respiratory tract, etc. The requirements set out in the Lithuanian hygiene norms are implemented, which improves living and working conditions.

### **Indirect benefits of building renovation**

41. The renovation of buildings contributes to economic growth in the following ways:

41.1. As the major renovation of buildings would include the introduction of energy saving measures and various technological operations, 21 % of the total expenditure would go to the value

added tax. Additional taxes collected to the national budget would be an important source of income for the State;

41.2. The major renovation of buildings would ensure long-term employment for the construction sector;

41.3. As the large-scale renovation of buildings would also improve the economic situation of the State, benefits would be felt by the public too. It would be easier for the State to implement new major investment projects;

41.4. Facade, window and door renovation will provide an aesthetic added value in the locality, so this will contribute to a greater aesthetic satisfaction of the public and implementation of objectives in tourism.

42. Greater energy security. The major renovation of the building stock would reduce significantly the total heat energy consumption in the country. It is important to take into account the fact that the decreased heat energy requirement changes the amount of energy generation and trends of installation use. Therefore, the importance of local power plants running on renewable energy sources (RES) would increase and the import of fossil fuels would drop. The State's energy dependence on energy import from third countries would decrease, which would lead to a more stable overall economy of the country. Business would benefit from a growing demand for RES energy.

43. Better environmental condition. Lower pollutant emissions are one of the outcomes of the completed process of building renovation as decreased energy consumption leads to decreased energy generation and relating pollutant emissions. The reduction of various pollutant emissions contributes to environmental objectives. According to calculations, the energy savings of 785-885 GWh from the renovation of residential and public buildings by 2020 would reduce carbon dioxide emissions by from 199 000 to 225 000 tonnes.

44. Improved health of the population. The improved environmental quality provides benefits to the public as human health improves. The improvement of human health is seen as an indirect benefit of the large-scale renovation of buildings which is important to both the public and the State and businesses due to lower morbidity rates and greater labour productivity.

45. Growth of research and development and related industry competitiveness and export opportunities. Ongoing building renovation and modernisation operations would make it possible to practically apply energy-saving technologies created by local scientists and encourage the development of new technologies. The large-scale renovation of buildings would encourage more specialists to get involved in technological improvements and the technologies developed could be exported abroad. Hence, there are obvious benefits for the public (new areas of research and new jobs), the State (possible export growth) and businesses (an increasing number of workers qualified in technologies).

## **CHAPTER VII**

### **ARRANGEMENTS FOR IMPLEMENTATION OF AND REPORTING ON THE PLAN**

46. This Plan shall be implemented by ministries, municipal institutions and other institutions within their remit. Institutions shall take account of this Plan and form the management of their building renovation accordingly.

47. The implementation of the Plan shall be coordinated by the Ministry of Energy and the Ministry of the Environment.

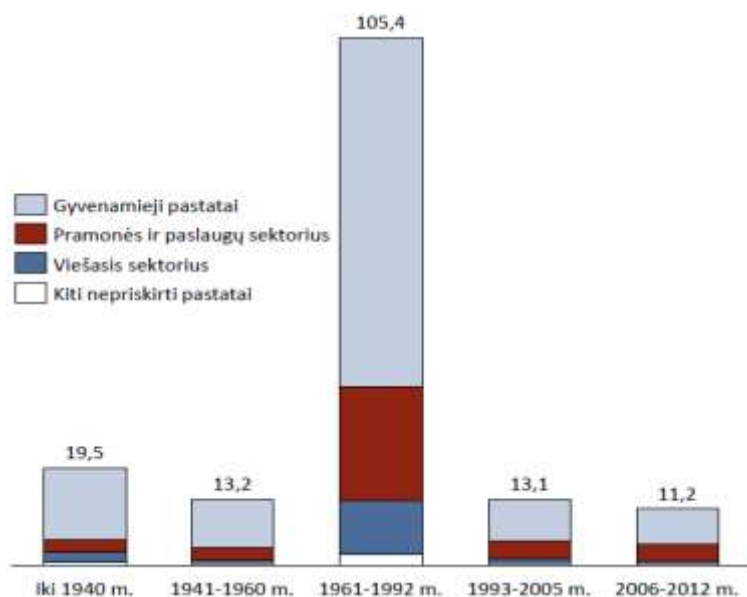
48. The implementation of the Plan's objectives shall be financed with the resources of the Lithuanian national budget, municipal budgets, EU funds, international organisations and other sources.

49. The Plan shall be updated every three years and submitted to the European Commission as part of National Energy Efficiency Action Plans.

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## LONG-TERM PLAN FOR THE RENOVATION OF THE NATIONAL BUILDING STOCK FIGURES AND TABLES



Key:

Residential buildings

Industry and service sector

Public sector

Other buildings not classified

Before 1940

Fig. 1 Area of the building stock by year of construction and purpose of buildings (million m<sup>2</sup>)

Table 1. Average energy performance in individual groups of buildings

Purpose of buildings	Average energy performance, by year of construction				
	before 1940	1941-1960	1961-1992	1993-2005	2006-2012
<b>1. Residential buildings</b>					
1.1. One or two apartments	E, F, G	E, F, G	E, F, G	C	B
1.2. Three or more apartments (multi-apartment buildings)	E, F, G	E, F, G	E, F, G	D	B
1.3. For various social groups	E, F, G	E, F, G	E, F, G	D	C
<b>2. Non-residential buildings</b>					
2.1. Administrative buildings	E, F, G	E, F, G	E, F, G	C	B
2.2. Industrial and production buildings	E, F, G	E, F, G	E, F, G	C	B
2.3. Hotels	E, F, G	E, F, G	E, F, G	C	B
2.4. Commercial buildings	E, F, G	E, F, G	E, F, G	C	B
2.5. Services buildings	E, F, G	E, F, G	E, F, G	C	B
2.6. Catering buildings	E, F, G	E, F, G	E, F, G	C	B
2.7. Recreational buildings	E, F, G	E, F, G	E, F, G	C	B
2.8. Cultural buildings	E, F, G	E, F, G	E, F, G	C	B
2.9. Research buildings	E, F, G	E, F, G	E, F, G	C	B
2.10. Sports buildings	E, F, G	E, F, G	E, F, G	C	B

2.11. Healthcare buildings	E, F, G	E, F, G	E, F, G	C	B
2.12. Special-purpose buildings	E, F, G	E, F, G	E, F, G	C	B
2.13. Religious buildings					
2.14. Other buildings	E, F, G	E, F, G	E, F, G	D	C

Table 2. Applicability of building renovation measures in buildings of different purpose (green: measures applied; grey: not applied)

Purpose of buildings	Energy efficiency improvement measures										RES measures	
	Lighting upgrading	Modernisation of the heating system	Installation of individual heat meters	Insulation of the roof or attic ceiling	Insulation of facade walls and the plinth wall	Glazing of balconies and loggias	Replacement of the entrance door	Replacement of windows	Modernisation of the ventilation system	Insulation of the basement ceiling	Installation of a geothermal power plant	Installation of solar energy collectors
<b>1. Residential buildings</b>												
1.1. One or two apartments												
1.2. Three or more apartments (multi-apartment buildings)												
1.3. For various social groups												
<b>2. Non-residential buildings</b>												
2.1. Administrative buildings												
2.2. Industrial and production buildings												
2.3. Hotels												
2.4. Commercial buildings												
2.5. Services buildings												
2.6. Catering buildings												
2.7. Recreational buildings												
2.8. Cultural buildings												
2.9. Research buildings												
2.10. Sports buildings												
2.11. Healthcare buildings												
2.12. Special-purpose buildings												
2.13. Religious buildings												
2.14. Other buildings												

Table 3. Number of priority buildings and the total area of buildings

Number of priority buildings by year of construction			
	1941-1960	1961-1992	Total
<b>Residential buildings</b>			
Three and two apartment buildings (multi-apartment buildings)	3 743	21 094	24 837
Residential buildings for various social groups	130.	1 303	1 433
<b>Non-residential buildings</b>			
Administrative buildings	848.	6 370	7 218
Cultural buildings	217.	915.	1 132
Research buildings	321.	3 152	3 473
Sports buildings	49.	310.	359.

Healthcare buildings	198.	1 058	1 256
Special-purpose buildings	79.	452.	531.
<b>Total</b>	<b>5 585</b>	<b>34 654</b>	<b>40 239</b>
<b>Area of priority group buildings by year of construction, thousand m<sup>2</sup></b>			
	<b>1941-1960</b>	<b>1961-1992</b>	<b>Total</b>
<b>Residential buildings</b>			
Three and two apartment buildings (multi-apartment buildings)	2 274	39 276	41 550
Residential buildings for various social groups	150.	3 233	3 383
<b>Non-residential buildings</b>			
Administrative buildings	519.	5 684	6 203
Cultural buildings	119	1 181	1 301
Research buildings	421	5 890	6 311
Sports buildings	20	376	396
Healthcare buildings	120	2 027	2 147
Special-purpose buildings	38	248	286
<b>Total</b>	<b>3 662</b>	<b>57 915</b>	<b>61 577</b>



**MINISTER FOR ENERGY OF THE REPUBLIC OF LITHUANIA**

**ORDER  
AMENDING ORDER NO 1-149 OF THE MINISTER FOR ENERGY OF THE REPUBLIC OF  
LITHUANIA  
OF 30 MAY 2014 APPROVING THE ENERGY EFFICIENCY ACTION PLAN**

7 July 2017, No 1-182  
Vilnius

I hereby amend Order No 1-149 of the Minister for Energy of the Republic of Lithuania of 30 May 2014 approving the Energy Efficiency Action Plan.

1. I hereby amend Order No 1-149 of the Minister for Energy of the Republic of Lithuania of 30 May 2014 approving the Energy Efficiency Action Plan and recast it as follows:

**'MINISTER FOR ENERGY OF THE REPUBLIC OF LITHUANIA**

**ORDER  
APPROVING THE 2014-2016 ENERGY EFFICIENCY IMPROVEMENT  
ACTION PLAN**

In implementation of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (OJ L 315, 2012, p. 1),

I hereby approve the 2014-2016 Energy Efficiency Improvement Action Plan (annexed).'

2. I hereby amend the 2014-2016 Energy Efficiency Improvement Action Plan approved by Order No 1-149 of the Minister for Energy of the Republic of Lithuania of 30 May 2014 approving the Energy Efficiency Action Plan ('the Plan'):

2.1. The title of the Plan is amended to read as follows:

**'THE 2014-2016 ENERGY EFFICIENCY IMPROVEMENT  
ACTION PLAN'**

2.2. Annex 4 to the Plan is amended:

2.2.1. A new paragraph 35 is added to read as follows:

'35. As from 2017 to 2020, it is planned to renovate each year 3 % of the total floor area of heated and/or cooled buildings owned and occupied by central government. An Energy Efficiency Fund (*Energijos efektyvumo fondas*) was set up for that purpose which comprises EUR 79.65 million and plans to additionally raise private investments. The Energy Efficiency Fund shall be administrated by the private limited liability company *Viešųjų investicijų plėtros agentūra* (Public Investment Development Agency) established by the Resolution of the Government of the Republic of Lithuania and managed by the Ministry of Finance of the Republic of Lithuania.'

2.2.2. A new paragraph 36 is added to read as follows:

'36. In the 2017-2020 period of financing public buildings two financing models are planned to be applied: the energy service company model (ESCO) or the repayable subsidy, being still a new financing form in Lithuania. The ESCO under the Energy Efficiency Fund is oriented to the improvement of energy profile of public buildings and the upgrading of street lighting. The model is based on the principle that benefits derived from building renovation are shared by the building's owner and the ESCO. A total of EUR 30 million are allocated to the repayable subsidy from European Union structural support. The repayable subsidy is one of support forms along with financial instruments. National legislation defines the repayable subsidy as a form of project financing where financing funds allocated to the project must be repaid by the project promoter, either in full or in part, under the conditions stipulated in the project contract. According to preliminary estimations, up to 250 000 sq. metres of the floor area of public buildings could be renovated by 2020, and the savings achieved by these buildings by means of financial engineering could ensure the long-term renovation of public buildings.';

2.2.3. Former paragraphs 35-49 are deemed to be paragraphs 37-51 respectively.

Minister for Energy

Žygimantas Vaičiūnas