

Information report
Long-term strategy for the renovation of buildings

Riga, 2020

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Abbreviations

AER	Renewable energy sources
ALTUM	AS Atīstības finanšu institūcija Altum
UN	United Nations Organisation
CFCA	Central Finance and Contracting Agency
EEA	European Economic Area
EIAH	European Investment Advisory Hub
EC	European Commission
EAAT	Emission Allowances Auction Instrument
MoE	Ministry of the Economy
ESC	Energy service contract
EBRD	European Bank for Reconstruction and Development
ERDF	European Regional Development Fund (ERDF)
EU	European Union
ESCO	Energy service company
EUEA	European Union Emissions Allowances
EUAEA	European Union Aviation Emissions Allowances
CEP2020	Conclusions of the Presidency of the European Council of 2 May 2007
CEPF2030	Conclusions of the European Council of 24 October 2014 on a 2030 climate and energy policy framework
CF	Cohesion Fund
LIDA	Latvian Investment and Development Agency
CoM	Cabinet of Ministers
NDP2027	Latvian National Development Plan 2021-2027
SLSRECIS	State Land Service Real Estate Cadastre Information System
VAT	Value Added Tax
GHG	Greenhouse gases

MoEPRD	Ministry of Environmental Protection and Regional Development
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Introduction

The housing stock in Latvia is rapidly ageing. In the period since Latvia regained independence, ~10% of all residential buildings have been built since 2003, whereas only 3% of the total share of apartment buildings have been built since 2003 (4% since 1993¹), when new requirements for construction standards for building envelopes came into force – Construction standard 002-001 'Thermal engineering for building envelopes', which set significantly higher heat engineering requirements for building envelopes.

The state, local governments and residents are all facing challenges relating to the timely and optimal maintenance of buildings. Also, along with the ageing of the building stock and its relatively poor technical condition, the existing housing stock is becoming less energy efficient.. According to estimates by the Ministry of the Economy, more than 23 000 buildings (in the apartment buildings sector) currently need to be renovated, although it is forecast that with the funding available during the current programming period for EU funds, around 1 700 residential apartment buildings can be renovated.

Latvia mainly uses EU and State budget funds for the renovation of buildings. In view of the need to achieve the energy efficiency and climate targets set, it is necessary to promote the involvement of the private sector (more active involvement by investors and commercial banks, ensure the availability of attractive loans, development of appropriate financial instruments, development of ESCO services).

Furthermore, according to *Eurostat* data, in 2018 only 7.5% of the population in Latvia rented a dwelling at market rates, whereas the majority of the population (69.3%) owned their dwelling outright without a mortgage, largely due to the extensive privatisation process after independence was regained. According to the European Commission's 2019 report on Latvia, access to decent housing, especially for low-income groups, is limited. 15.2% of the population suffer from very poor living conditions, significantly above the EU average of 4.5%.²

Consequently, the objectives to be set for Latvia are:

- renovation of the existing housing stock;
- construction of new housing stock, attracting private investment;
- access to adequate housing for every citizen;
- promoting energy efficiency while moving towards climate neutrality in the building sector.

At the same time, it should be noted that, in accordance with Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings, as amended by Directive 2018/844 of 30 May 2018 and Regulation 2018/1999 of 11 December 2018, Latvia, as an EU Member State, is required to develop a long-term buildings' strategy promoting the renovation of the national stock of residential and non-residential buildings (both public and private) so

¹ Information provided by the SLS

²European Commission 2019 Report on Latvia

that it becomes highly energy efficient and decarbonised by 2050, promoting cost-effective conversion of existing buildings into near zero energy buildings.

Article 2a of Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings requires that the strategy must include:

(a) an overview of the national building stock, based, as appropriate, on statistical sampling and expected share of renovated buildings in 2020;

(b) the identification of cost-effective approaches to renovation relevant to the building type and climatic zone, considering potential relevant trigger points, where applicable, in the life-cycle of the building;

(c) policies and actions to stimulate cost-effective deep renovation of buildings, including staged deep renovation, and to support targeted cost-effective measures and renovation for example by introducing an optional scheme for building renovation passports;

(d) an overview of policies and actions to target the worst performing segments of the national building stock, split-incentive dilemmas and market failures, and an outline of relevant national actions that contribute to the alleviation of energy poverty;

(e) policies and actions to target all public buildings;

(f) an overview of national initiatives to promote smart technologies and well-connected buildings and communities, as well as skills and education in the construction and energy efficiency sectors; and

(g) an evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality.

2. In its long-term renovation strategy, each Member State shall set out a roadmap with measures and domestically established measurable progress indicators, with a view to the long-term 2050 goal of reducing greenhouse gas emissions in the Union by 80-95% compared to 1990, in order to ensure a highly energy efficient and decarbonised national building stock and in order to facilitate the cost-effective transformation of existing buildings into nearly zero-energy buildings. The roadmap shall include indicative milestones for 2030, 2040 and 2050, and specify how they contribute to achieving the Union's energy efficiency targets in accordance with Directive 2012/27/EU.³ The roadmap includes indicative milestones for 2030, 2040 and 2050, and specifies how they contribute to achieving the Union's energy efficiency objectives in accordance with Directive 2012/27/EU.

3. To support the mobilisation of investments into the renovation needed to achieve the goals referred to in paragraph 1, Member States shall facilitate access to appropriate mechanisms for:

(a) the aggregation of projects, including by investment platforms or groups, and by consortia of small and medium-sized enterprises, to enable investor access as well as packaged solutions for potential clients;

(b) the reduction of the perceived risk of energy efficiency operations for investors and the private sector;

(c) the use of public funding to mobilise additional private-sector investment or address specific market failures;

d) guiding investments into an energy efficient public building stock, in line with *Eurostat* guidance; and

³ Available at: <https://data.consilium.europa.eu/doc/document/ST-29-2019-INIT/lv/pdf>.

(e) accessible and transparent advisory tools, such as one-stop-shops for consumers and energy advisory services, on relevant energy efficiency renovations and financing instruments.

4. The Commission shall collect and disseminate, at least to public authorities, best practices on successful public and private financing schemes for energy efficiency renovation as well as information on schemes for the aggregation of small-scale energy efficiency renovation projects. The Commission shall identify and disseminate best practices on financial incentives to renovate from a consumer perspective taking into account cost-efficiency differences between Member States.

5. To support the development of its long-term renovation strategy, each Member State shall carry out a public consultation on its long-term renovation strategy prior to submitting it to the Commission. Each Member State shall annex a summary of the results of its public consultation to its long-term renovation strategy.

Each Member State shall establish the modalities for consultation in an inclusive way during the implementation of its long-term renovation strategy.

6. Each Member State shall annex the details of the implementation of its most recent long-term renovation strategy to its long-term renovation strategy, including on the planned policies and actions.

7. Each Member State may use its long-term renovation strategy to address fire safety and risks related to intense seismic activity affecting energy efficiency renovations and the lifetime of buildings.

Pursuant to point 2.3.1 of the Commission Recommendation (EU) 2019/786 of 8 May 2019 on building renovation Member States should include existing elements and new elements (see Article 2a of the EPBD) in their long-term renovation strategy.

1. Overview of the national building stock

The age of residential and non-residential buildings can be divided into periods according to their thermal characteristics. The characteristics of different building construction periods are summarised in Table 1.

Table 1. Period of construction and thermal characteristics of buildings

Period of construction of buildings	Thermal characteristics of buildings
Up until 1940	Pre-war construction, mainly wooden in rural areas and brick masonry in urban areas. Most buildings are of up to two storeys.
1941 - 1960	Post-war construction, characterised by good quality, mainly brick buildings, residential sector characterised by brick buildings built according to Stalin-era standardised projects.
1961 -1979	Widespread construction of standardised buildings, construction of residential buildings of the 316th and 318th series (so-called ' <i>Khrushchyovkas</i> ') and the 464th series is begun, construction of buildings of the 467th, 103rd and 104th series is also launched and, toward the end of the period, construction of the 602nd series. Clay bricks, aerated concrete, claydite concrete are materials widely used in external walls.
1980 -1991	New design requirements are established in the USSR building code 'Thermal engineering of building envelopes' ⁴ . Construction of the 119th series of buildings starts, a series of special projects are carried out, and construction of reinforced concrete and claydite concrete large-panel buildings predominate.
1992 -2002	The construction of standardised buildings is practically discontinued. Pursuant to Order No 68 of 12 September 1991 of the Ministry of Architecture and Construction of the Republic of Latvia, the requirements for building envelopes are significantly increased.
2003 -2014	Latvian Construction Standard LBN 002-01 'Thermal engineering for building envelopes' comes into force, which sets out the thermotechnical requirements for building envelopes. During this period, buildings with large glazed surfaces appear, with the result that the LBN requirements for the relevant buildings are generally not met; however, the use of predominantly glazed surfaces is not a typical characteristic in residential buildings sector architecture.
from 2015 onwards	Latvian Construction Standard LBN 002-15 (amendments to LBN 002-01) comes into force. The amendments set stricter thermal requirements for building envelopes. On 11 November 2015, amendments were made to Cabinet Regulation No 383 of 9 July 2013 on Energy Certification of Buildings, which establish minimum permitted levels of heating for both renovated/reconstructed buildings and new buildings, as well as requirements for the gradual transition to near zero energy buildings for new construction.
from 2019 onwards	From 2019 onwards, all new state and local government buildings and from 2021 all new buildings must be near zero-energy buildings.

⁴ "СНиП II-3-79 Строительная теплотехника" (construction thermal engineering), СНиП II-3-79 2. Теплостойчивость ограждающих конструкций (Part 2 – Thermal engineering of building envelopes).

The energy consumed in the buildings sector (households) accounts for up to 30% of the energy sector, which is why the buildings sector represents significant potential for achieving the overall energy efficiency targets. The vast majority of existing buildings have a high energy consumption and significantly lower thermal characteristics than can be provided by currently available technologies. Most of these buildings will remain in use for a considerable period of time, so the gradual renovation of these buildings, improving their energy efficiency, is essential. However, the depreciation of existing residential and non-residential buildings should also be highlighted. According to data provided by the State Land Service, the aggregate depreciation of residential buildings in percentage terms is 38.9%, while the depreciation of non-residential buildings is 41%.

Table 2. Number and area of residential and non-residential buildings and engineering structures⁵

No No	Code	Main use	Number of buildings (constructions)	Surface area, million m ²	% of total number of buildings	% of total surface area	Building does not in fact exist
1	1 110	Single dwelling houses	309 929	36.50	22.091%	17.666%	655
2	1 121	Two dwelling houses	13 938	2.20	0.993%	1.066%	13
3	1 122	Three and more dwelling houses	39 477	51.55	2.814%	24.953%	30
4	1 130	Community accommodation for various social groups	647	0.83	0.046%	0.404%	1
Total dwellings			363 991	91.08	25.945%	44.089%	699
5	1211	Hotel buildings	2 928	2.35	0.209%	1.139%	8
6	1 212	Other short-term accommodation buildings	2 804	0.42	0.200%	0.201%	37
7	1 220	Office buildings	7 124	6.53	0.508%	3.162%	17
8	1 230	Wholesale and retail buildings	8 089	5.08	0.577%	2.461%	48
9	1 241	Communications buildings, stations, terminals and related buildings	2 670	0.88	0.190%	0.425%	24
10	1 242	Garage buildings	11 793	4.07	0.841%	1.970%	32
11	1 251	Industrial buildings	32 976	18.21	2.350%	8.813%	211
12	1 252	Reservoirs, bunkers, silos and warehouses	17 384	9.07	1.239%	4.393%	234
13	1 261	Buildings for large-scale events	1 223	1.19	0.087%	0.577%	0
14	1262	Museums and libraries	587	0.49	0.042%	0.238%	1
15	1263	Schools, universities and buildings for scientific research	3 791	6.93	0.270%	3.354%	7
16	1 264	Buildings for medical or health care facilities	1 340	2.02	0.096%	0.980%	3
17	1 265	Buildings for sporting activities	1 048	1.24	0.075%	0.602%	4

⁵Data of the State Real Estate Cadastral Information System provided by the State Land Service on 1 January 2019.

18	1 271	Non-residential farm buildings	85 003	23.17	6.059%	11.217%	455
19	1 272	Worship buildings	1 355	0.44	0.097%	0.211%	0
20	1 273	Cultural and historical objects	61	0.06	0.004%	0.028%	0
21	1 274	Other not previously classified buildings	826 671	33.34	58.924%	16.139%	7 748
Total non-residential buildings			1 006 847	115.50	71.766%	55.911%	8 829
22		Aggregate of engineering structures	32 116		2.289%		240
Total			1 402 954	206.58	100.000%	100.000%	9 768

Table 3. Breakdown by ownership of buildings

Owner	Natural person	Legal person	Local government	State	Mixed ownership	Total
Type of dwelling						
Single dwelling houses	287 608	8 082	1 304	100	826	309 582
Two dwelling houses	9 915	609	961	11	229	11 846
Three and more dwelling houses	9 738	4 112	15 573	79	994	30 849
Community accommodation for various social groups	77	148	311	79	21	646

According to Table 2, 1.4 million buildings with a total area of 206.58 million m² registered with the IGC IS, including various types of auxiliary buildings with an average area of less than 40 m². Of all buildings, 363.9 thousand, with a total area of 91.08 million m², are residential buildings. Numerically the largest, 22% are single dwelling buildings (309.9 thousand), although by surface area the share of single dwelling buildings is only 17.6% whereas the largest share – 24.9% is made up of apartment buildings (three and more dwellings) (51.55 million m²), even though their number represents only 2.81% (39.4 thousand) of the aggregate number of residential and non-residential buildings.

Looking at Table 4, Riga and its surrounding regions account for 44% of the total number of apartment buildings in Latvia. At the same time, it should be noted that the number of single dwelling houses in Latgale is even slightly higher than in the regions surrounding Riga and more than 2.5 times the number of single dwellings buildings in Zemgale.

Table 4. Territorial breakdown of the number of residential buildings (Latvia, regions, cities*)

Location	Total number of residential buildings	1 dwelling houses	2 dwelling houses	3 and more dwelling houses	Community accommodation for various social groups
Latvia					
	363 991	309 929	13 938	39 477	647
Regions					
Riga	28 768	14 786	2 204	11 710	68
Surrounding regions of Riga	89 629	81 114	2 886	5 513	116
Vidzeme	70 707	62 748	1 930	5 860	169
Kurzeme	50 607	40 989	2 445	7 075	98
Zemgale	33 212	29 047	693	3 388	84
Latgale	91 068	81 245	3 780	5 931	112
Cities					
Riga	28 768	14 786	2 204	11 710	68
Daugavpils	9 836	7 072	1 233	1 525	6
Jelgava	8 115	7 331	69	695	20
Jēkabpils	3 044	2 491	168	377	8

Jūrmala	9 859	8 069	714	1 047	29
Liepāja	5 268	2 788	399	2 070	11
Rēzekne	3 050	2 119	432	491	8
Valmiera	2 683	2 120	114	431	18
Ventspils	4 822	3 358	631	830	3

Latvia								
1 006 847								
Rīga	Daugavpils	Jelgava	Jēkabpils	Jūrmala	Liepāja	Rēzekne	Valmiera	Ventspils
74 985	36 726	11 099	8 583	15 534	12 021	9 768	4 748	13 279

* Ogre is missing in the table of cities, given that the statistics were collected prior to implementation of the administrative territorial reforms.

Table 5. Number of non-residential buildings in the cities of the country as a whole

Type code	Type description	Before 1941	1941-1960	1961-1979	1980-1992	1993-2002	2003-2014	2015-2019	Total
11220101	Apartment houses with wooden outer walls	8 622	1 472	472	77	20	34	7	10 704
11220102	One-two storied apartment houses	5 257	2 833	3 057	638	91	226	26	12 128
11220103	Three-five storied apartment houses	2 644	918	5 350	3 385	243	597	63	13 200
11220104	Six-nine storied apartment houses	674	32	361	657	52	195	36	2007
11220105	Ten and more storied apartment houses	0	0	172	264	23	72	9	540

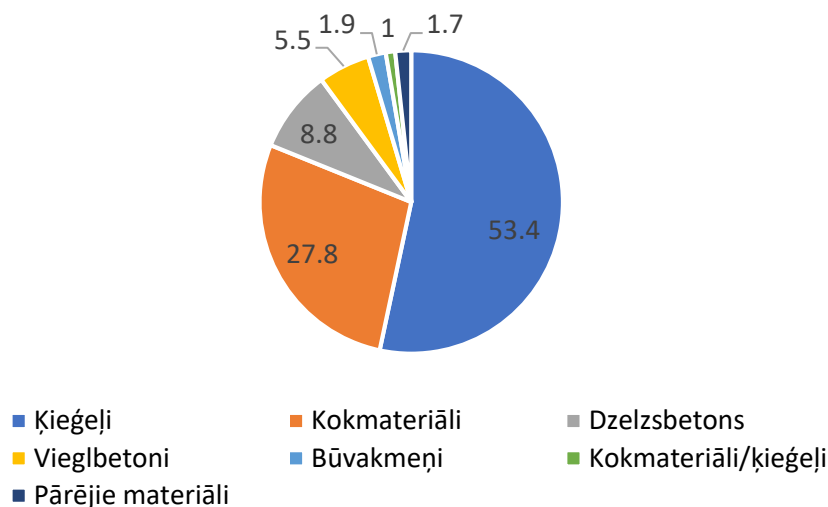
The proportion of non-residential buildings shown in Table 5 indicates that only 18.5% of all non-residential buildings are concentrated within Latvia's large cities.

Table 6. Type of apartment buildings and the year they were commissioned

Table 6 illustrates that, in terms of volume, there was a significant period for construction of apartment buildings up to 1941, when 44.5% of the total number were built, but an even higher share are represented by buildings built in the Soviet era (until 1992) representing 51%. As can be seen, only 4.4% have been built since the Latvian state restored its independence, which represents a significant drop.

Analysing residential buildings according to the type of materials of their exterior walls, brick buildings are the most common (53.4%). 27.8% are residential buildings where wood has been used for the exterior walls.

Figure 1.



Key

<i>Bricks</i>	<i>Timber</i>	<i>Reinforced concrete</i>
<i>Light-weight aggregates</i>	<i>Building stone</i>	<i>Timber/brick</i>
<i>Other materials</i>		

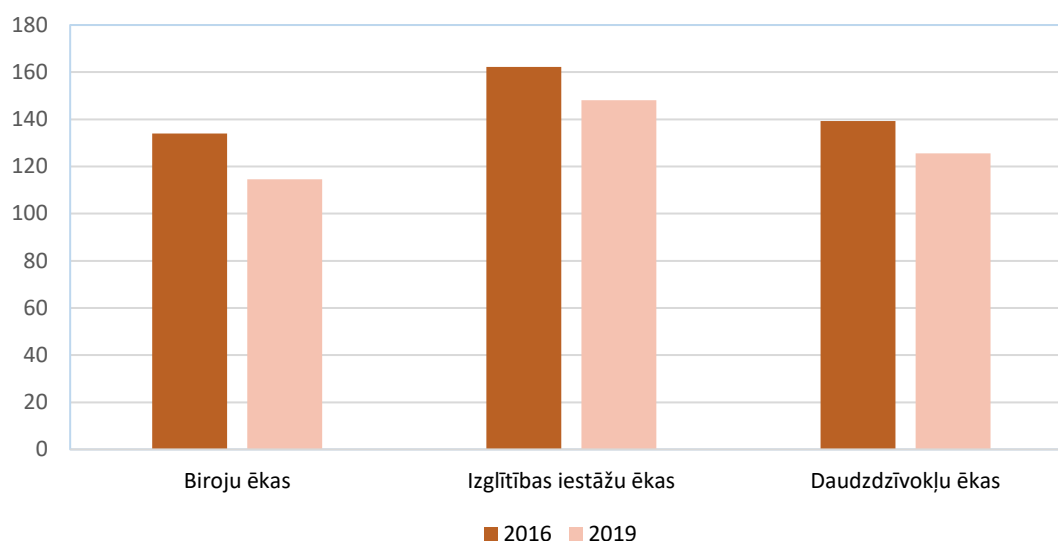
Heating consumption in buildings

Since 2014, pursuant to the requirements of paragraph 16 of Cabinet Regulation No 383 of 9 July 2013 Regulations Regarding Energy Certification of Buildings, the Ministry of the Economy (from 2017 – the State Construction Control Bureau) ensures the determination each year by 1 March of the statistically determined average consumption of heating according to energy efficiency indicators (see Figure 1) and publication on its website for at least the following types of buildings:

- apartment buildings;
- office buildings;
- educational buildings.

Figure 2.

Average specific heating consumption (kwh/m²)



KEY: office buildings – educational buildings – apartment buildings

Figure 2 shows a decrease in average specific heating consumption compared to 2016. For example, in apartment buildings, there has been a decrease of 13.8 kWh/m² since 2016. The average energy consumption for heating⁶ for all types of buildings is 138-139 kWh/m² per annum: for different types of single dwelling buildings – 139 kWh/m² per annum; for apartment buildings – 137 kWh/m² per annum; for office buildings – 145 kWh/m² per annum; for educational buildings – 147 kWh/m² per annum; for health institution buildings – 154 kWh/m² per annum; for hotel and restaurant buildings – 116 kWh/m² per annum; for sports facilities – 132 kWh/m² per annum; for wholesale and retail buildings – 102 kWh/m² per annum, for other types of buildings – 185 kWh/m² per annum;

These aggregated data are used as benchmarks in the energy efficiency certificates for buildings, as a result of which it is possible for building owners, the holders of energy certificates, to assess not only the rating of a building, but also the differences between the specific building and the average national consumption by buildings.

Since 2016, Latvia has implemented the Construction Information System⁷ with two new registers: a register of energy performance certificates for buildings and a register of independent experts, in which statistical data on the assessment of the energy performance of buildings can be compiled. The results are summarised in Table 7, comparing the figures for 2016 with the latest information for 2019.

Table 7. Number of energy performance certificates registered in the Construction Information System

Year	2016	2016	2019	2019
Type of buildings	Number of energy performance certificates	Average estimate of consumption	Number of energy performance certificates	Average estimate of consumption

⁶A Compendium of the Register of Energy Certificates of Buildings of the Construction Information System as at 5 September 2019.

⁷ Available at: <https://bvkb.gov.lv/lv/content/videjais-energoefektivitates-raditajs>.

		for heating (kWh/m ² /year)		for heating (kWh/m ² /year)
all building types	676	157	835	140
different types of single dwelling buildings or two dwelling buildings	3	172	13	118
apartment house	259	137	536	137
office building	100	172	65	141
educational building	128	160	76	146
outpatient or inpatient medical treatment building	42	163	31	144
hotel and restaurant building	30	114	20	124
sports facility building	6	161	12	123
wholesale or retail services building	4	172	12	82
other type of building in which energy is consumed	104	198	70	174

2 Existing policies and activities promoting energy efficiency

2.1 A cost-effective approach to building renovation

Cost-optimal level of minimum energy performance requirements

The requirement to calculate cost-optimal levels of minimum energy performance requirements and to report to the EC is laid down in Article 5 of Directive 2010/31/EU on the energy performance of buildings, which requires Member States to calculate the cost-optimal level of minimum energy performance requirements for new and existing buildings and to compare the results of the calculations with existing minimum energy performance requirements.

In 2018, a report was produced on the calculation of cost-optimal levels of minimum energy performance requirements in accordance with Article 5 of Directive 2010/31/EU on the energy performance of buildings.⁸

This report:

- reflects how the types of buildings which were the subject of the review were chosen – by defining reference buildings for both existing buildings (two per building category) and new ones;
- describes the possible energy performance measures and associated choices of materials, construction solutions and building systems, including renewable energy-based measures (which is a mandatory prerequisite for near zero-energy buildings), and provides results of calculations of final and primary energy demand;

⁸Report on the calculation of cost-optimal levels of minimum energy performance requirements in accordance with Article 5 of Directive 2010/31/EU on the energy performance of buildings.

Available

at: https://em.gov.lv/lv/nozares_politika/majokli/informacija_un_skaidrojumi/gandrizz_nulles_energijas_ekas/.

- sets out and substantiates the necessary additional assumptions for carrying out cost-effective and macroeconomic calculations of energy efficiency improvements;
- analyses the sensitivity of the calculation results to the basic parameters included in the economic calculations;
- certain cost-optimal thermal permeability values for various built structures, depending on the materials used, are attached as an electronic Annex to this report;
- the summary describes the work carried out in the study and provides recommendations for supplementing and clarifying Latvian legislation.

As discussed below in the Strategy, on 1 January 2020 Latvian construction standard LBN 002-19 'Thermal engineering for building envelopes' entered into force, as approved by Cabinet Regulation No 280 of 25 June 2019, which also takes into account the recommendations made in the aforementioned report.

Minimum energy performance requirements at present: type of construction of the main building elements and U value

When describing and analysing the combinations of different building parameters during construction, it is important to take into account the requirements of thermal engineering regulations for buildings and the amendments thereto. Amendments made to the requirements of thermal engineering regulations for building envelopes since 1980 are indicated in Table 8, while Table 9 shows the new thermal engineering requirements for building envelopes which entered into force on 1 January 2020⁹ and replace Latvian Construction Standard LBN 002-15 'Thermal engineering for building envelopes'.

Table 8.

Building elements/years		1980	1992	2003	2015
Roofs and coverings in contact external elements	W/ (m ² ·K)	0.90	0.25 – 0.40	0.2 k*	0.15 k
Ground based floors		-	0.5	0.25 k	0.15 k
Exterior walls with a mass of less than 100 kg/m ²		1.1	0.33 – 0.50	0.25 k	0.18 k
Exterior walls with a mass of 100 kg/m ² and more				0.3 k	
Windows		2.4	1.9 – 2.4	1.8 k	1.30 k
Doors		2.4	1.9 – 2.4	1.8 k	1.80 k
Thermal bridges		-	-	0.2 k	0.10 k
*Temperature factor k = 19/(Tintern. – Text.), depending on the climate zone, k for residential houses range from 0.95 (Liepāja) to 1.09 (Alūksne)					
Energy consumption for heating	kWh/m ² per annum	150 – 200	100 – 130	70 – 90	60 – 85

The construction standard lays down procedures for the design of the energy performance of building elements of external building envelopes and their interconnections in respect of buildings under construction, reconstructible and renewable heated buildings, as well as for newly heated areas in existing buildings where temperatures are maintained at 8° C and higher during the heating season.

In order not to limit the various design solutions and architectural forms or expectations of the initiators of construction projects, the regulatory thermal permeability values have been removed from the previous construction standard. It is important to reach kWh/m² heating consumption and maximum permissible U-values. Maximum U-values are indicated in the standard with the aim of restricting the construction of thermal-technically very poor and unsafe structures, which may lead to various types of problems during operation.

Table 9.

Structure	Residential buildings, care homes, hospitals and kindergartens	Non-residential buildings	Industrial buildings
	URM value, W/(m ² K)	URM value, W/(m ² K)	URM value, W/(m ² K)

⁹Regulation on Latvian Construction standard LBN 002-19 "Thermal engineering for building envelopes" Available at: <https://likumi.lv/ta/id/307966>.

Floor1:			
floors and walls in contact with the ground	0.2	0.25	0.35
floor on non-heated basement or floor with ventilated space under the floor	0.3	0.35	0.40
Exterior walls:			
exterior walls	0.23	0.25	0.30
walls in traditional log buildings without thermal insulation in the wall	0.65	0.65	0.65
Roofs and coverings in contact external elements	0.20	0.23	0.25
Exterior doors and gates	1.80	2.00	2.20
Windows and balcony doors ²	1.10	1.10	1.30
Thermal bridges, ψ_{RM}	0.20	0.20	0.35

Maximum permissible values for heat permeability factors of building elements and linear thermal bridges.

In summary, the permissible U-value for windows and balcony doors has been reduced, but the requirements for the minimum level of energy efficiency of buildings, and assessment of the energy efficiency of heating for renovation and reconstructions from 2021 onwards have been strengthened, because:

- 1) Directive 2010/31/EU states that the State should provide incentives for buildings that are refurbished be transformed into near zero-energy buildings;
- 2) Decarbonisation targets for buildings must be achieved by 2050.

In the case of properly built buildings, the U-value of their heat permeability coefficient should not normally be lower than 1.3 [W/(m² K)]. Studies show that the thermal performance of the building envelopes of standard type buildings built in the Union of Soviet Socialist Republics (USSR) is usually in the range between 0.8 to 1.2, but there are cases where the actual U-values for external walls are up to 2.0 [W/(m² K)].¹⁰ Only buildings built after 2015 can be considered as complying with the current thermal requirements. Buildings built between 2003 and 2015 have only slightly lower thermal characteristics.

Table 10. Minimum permissible levels of energy efficiency of buildings for new constructions, renovation and conversion of buildings.

Period of acceptance of building design documentation	for residential buildings		for non-residential buildings ¹¹	
	apartment buildings	one or two dwelling houses	buildings which are owned by the state or local government or in the possession of institutions and in which state or local government	other non-residential buildings

¹⁰ A. Jakovičs, S. Gendelis, H. Truemann. Analysis of heat losses from Typical buildings in Riga. International scientific Colloquium 'Modelling for saving resources' – Riga, 2001, pp 190-197.

¹¹ Types of buildings referred to in Paragraphs 6.1.3, 6.1.4, 6.1.5, 6.1.6, 6.1.7, 6.1.8 and 6.1.9 of Cabinet Regulation No 383 of 9 July 2013 on energy certification of buildings)

			institutions are located	
Minimum permissible levels of energy efficiency for newly constructed buildings¹²				
Until 31 December 2016	≤ 70 kWh/m ² per annum	≤ 80 kWh/m ² per annum	≤ 100 kWh/m ² per annum	≤ 100 kWh/m ² per annum
From 1 January 2017 to 31 December 2017	≤ 60 kWh/m ² per annum	≤ 70 kWh/m ² per annum	≤ 90 kWh/m ² per annum	≤ 90 kWh/m ² per annum
From 1 January 2018 to 31 December 2018	≤ 60 kWh/m ² per annum	≤ 70 kWh/m ² per annum	≤ 65 kWh/m ² per annum	≤ 90 kWh/m ² per annum
From 1 January 2019 to 31 December 2020	≤ 50 kWh/m ² per annum	≤ 60 kWh/m ² per annum	near zero energy building	≤ 65 kWh/m ² per annum
From 1 January 2021	near zero energy building	near zero energy building	near zero energy building	near zero energy building
Minimum permissible levels of energy efficiency of buildings to be renovated or reconstructed¹³				
From 21 November 2015 to 31 December 2020	≤ 90 kWh/m ² per annum	≤ 100 kWh/m ² per annum	≤ 110 kWh/m ² per annum	≤ 110 kWh/m ² per annum
From 1 January 2021	≤ 80 kWh/m ² per annum	≤ 90 kWh/m ² per annum	≤ 90 kWh/m ² per annum	≤ 100 kWh/m ² per annum

External environment temperatures are assessed according to LBN 003-19 "Construction Climatology" which entered into force on 21 September 2019. Latvian Construction Standard LBN 003-19 "Construction Climatology" sets out the climatic indicators applicable in construction, including the climatic indicators applicable in engineering research, construction planning, construction work, building repair, renovation and reconstruction of buildings.

In light of observed and predicted climatic changes, the data set out in this construction standard should be periodically reviewed and updated. Significant effects of climate change that must be taken into account in construction and infrastructure¹⁴:

- increases in the annual average air temperature, increases in the frequency and duration of heat waves, extensions to the meteorological summer, increases in the maximum value of the daily maximum temperature;
- reductions in the number of days with frost and days without thaw; increases in amounts of precipitation and increases in the maximum daily amount of precipitation, increases in the number of days with very strong precipitation,

¹² Minimum permissible level of energy efficiency for buildings, heating energy efficiency assessment for new buildings. The minimum permissible level of energy efficiency for buildings (by class) in respect of new buildings shall not apply where the application of the relevant requirements is not technically or functionally feasible or where a cost-benefit analysis of the lifetime of the building indicates a loss

¹³ Minimum permissible levels of energy efficiency of buildings, assessment of energy efficiency for heating of buildings to be renovated and reconstructed

¹⁴ Latvia's plan for adapting to climate change for the period up to 2030 is available online at: <http://tap.mk.gov.lv/mk/tap/?pid=40467308>.

increases in the maximum amount of five-day precipitation, and increases in intense snowfall above the norm;

- long-term rises in average sea water levels and development of coastal erosion, as well as fluctuations in groundwater levels affected by changes in precipitation and sea water levels and changes in river run-off patterns

Climatological indicators in respect of any geographical point for construction purposes in the territory of Latvia is determined according to the climactic indicators of the closest geographical point in the tables in the Annex to this construction standard.

The aforementioned construction standard¹⁵ contains updated data on:

- average air temperature (°C);
- absolute minimum air temperature and its probability (°C);
- absolute peak and probability of air temperature (°C);
- average maximum temperature of the hottest month (°C) and its probability;
- average minimum air temperature (°C) of the coldest month and its probability;
- average air temperature of the coldest five day period (°C);
- duration of heating period and average air temperature (°C);
- daily average water vapour partial pressure in the air (hPa);
- average daily relative air humidity (%);
- amplitude of relative air humidity (%);
- the amount of monthly and annual precipitation (mm);
- solar radiation on different targeted surfaces (kWh/m²).

Regulatory framework for near zero-energy buildings in Latvia

Near zero-energy buildings in Latvia are defined in Article 1(6) of the Law on the Energy Efficiency of Buildings: 6) a near zero-energy building – a high-efficiency class of building which uses high-efficiency energy supply systems.

Pursuant to Article 10 of the Law (Enhanced energy efficiency class buildings), establishing detailed requirements for near zero-energy buildings has been delegated to the Cabinet of Ministers. Cabinet Regulation No 383 of 9 July 2013 on Energy Certification of Buildings lays down the following requirements:

"17. A building is to be classified as a near zero-energy building if it meets all of the following requirements:

17.1 the energy efficiency indicator of the building for heating corresponds to Class A, while ensuring compliance of the indoor climate with the requirements of legislation in the fields of construction, hygiene and occupational safety;

17.2 the total primary energy consumption for heating, hot water, mechanical ventilation, cooling, lighting shall not exceed 95 kWh per square metre per annum;

17.3 high-efficiency systems are used in the building that:

17.3.1 ensures the recovery of at least 75% of ventilation heat losses during the heating period;

17.3.2 at least partly ensures the use of renewable energy;

17.4 no low-efficiency fossil fuel heating installations have been installed in the building."

¹⁵Available at:<https://likumi.lv/ta/id/309453-noteikumi-par-latvijas-buvnormativu-lbn-003-19-buvklimatologija>.

The requirements of Paragraph 17.1 of the Regulation stipulate that for a near zero-energy building, the heating energy efficiency of the building is class A, which sets different target levels in respect of heating for residential and for non-residential buildings. Paragraph 14 of the Regulation lays down the values of the reference classes, from which it follows that, in order to be classified as a near zero-energy building, a residential building must achieve an energy efficiency indicator for heating not exceeding 40 kWh/m² per annum, and for a non-residential building - not exceeding 45 kWh/m² per annum.

As shown in Table 10, since 2019 all public buildings (new buildings) must be near zero-energy buildings, while residential buildings must be near zero-energy buildings from 1 January 2021.

Practical experience with near zero-energy buildings in Latvia

Currently Latvia has little practical experience with near zero-energy buildings, mostly in the form of pilot projects, although more and more projects are approaching this level. To date, Latvia has implemented a number of support programmes supporting the following pilot projects:

- An open tender, "Low Energy Buildings", for projects under the Climate Change Financial Instrument;
- An open tender for projects funded by the emission allowances auction financial instrument, entitled "Reducing greenhouse gas emissions – low energy buildings";
- An open tender for projects funded by the emission allowances auction financial instrument, entitled "Reducing greenhouse gas emissions by developing the construction of energy self-sufficient buildings".

Every year "The most energy efficient building in Latvia" competition is organised, which comprises the most positive examples both in the context of building renovation and reconstruction, as well as new buildings. This competition is described in sub-chapter 2.2 of the strategy – Policies and activities for the cost-effective and staged renovation of buildings.¹⁶

At the same time, certain factors relating to the construction of near zero-energy buildings should be taken into account.

A near zero-energy building may still be a class A building according to its energy efficiency class, even if a part of the energy consumed is not secured from renewable energy sources. With regard to near zero-energy buildings, 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 and Directive 2012/27/EU on energy efficiency states that the energy required by near zero energy buildings should be sourced to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby.

The currently valid Cabinet Regulation No 383 of 9 July 2013 "Regulations on Energy Certification of Buildings" stipulates that the use of renewable energy must be ensured at least partially in near-zero energy buildings, however, no more detailed requirements in respect of the share of renewable energy resources have been specified. In view of the above, with respect to zero-energy buildings, it is necessary to define the share of energy that is to be covered by renewable energy sources, at the same time keeping in mind the share of energy resources allocated to the centralised production

¹⁶Available at:https://em.gov.lv/lv/nozares_politika/majokli/informacija_un_skaidrojumi/gandriz_nulles_energijas_ekas/.

of energy in Latvia. Active work is currently underway to define the necessary share of renewable energy so that a building qualifies as a near zero-energy building.

It should also be taken into account that the minimum permissible level of energy efficiency of buildings (by class) is not applicable to new buildings where the application of the relevant requirements would not be technically or functionally feasible or where a cost-benefit analysis across the lifetime of the building would indicate a loss.

2.2 Policies and activities for the cost-effective and progressive complete renovation of buildings

Information on support instruments for the renovation of buildings

During the 2014-2020 programming period for EU funds, the following support programmes were introduced in the field of improvement of the energy efficiency of buildings in Latvia:

- the specific support objective 4.1.1 'Promotion of the efficient use of energy resources, reduction of energy consumption and transition to RES in the manufacturing sector';
 - Measure 4.2.1.1 'Promotion of energy efficiency in residential buildings';
 - Measure 4.2.1.2 'Promotion of energy efficiency in public buildings';
- the specific support objective 4.2.2 'Promotion of an increase in energy efficiency in local authority buildings and the use of RES therein, pursuant to the integrated development programmes of local authorities'.

The specific support objective 4.1.1 of the Cohesion Fund 'Promotion of the efficient use of energy resources, reduction of energy consumption and transition to RES in the manufacturing sector' (hereinafter referred to as 'SSO 4.1.1').

The aim of SSO 4.1.1 is to promote energy efficiency and the use of renewable energy in buildings used for manufacturing.

An analysis of the indicators to be achieved within the first and second project application selection rounds of SSO 4.1.1 in ongoing and completed projects (data regarding ongoing and completed projects recorded as at 9 October 2019) shows that the execution of the planned indicators within the first and second rounds is as follows:

- number of businesses that have received support – 40;
- energy savings of businesses that have received support is 107 219 MWh/year;
- additional capacity to be produced from renewable energy sources is planned to be 9.5 MW;
- estimated annual reduction in greenhouse gases per annum – equivalent to 12 327 tonnes of CO₂.

Taking into account the above and the high interest from businesses in a repeat of a similar selection round, the Ministry of the Economy has drawn up a draft Cabinet Regulation laying down for the implementation of the third round of project applications to achieve the specific support objective 'Promotion of efficient use of energy resources, reduction of energy consumption and transition to RES in the manufacturing sector' under the Operational Programme 'Growth and Employment'¹⁷ to implement the third round of SSO 4.1.1.

¹⁷Available at:<https://likumi.lv/ta/id/310544-darbibas-programmas-izaugsmes-un-nodarbinatiba-4-1-1-specifiska-atbalsta-merka-veicinat-efektivu-energoresursu-izmantosanu>.

At present, CF funding of EUR 11 679 793 is available for the implementation of the third round of SSO 4.1.1. Beneficiaries of the funding are micro, small, medium and large enterprises registered in the Republic of Latvia, in respect of which one area of activity is manufacturing. The estimated annual greenhouse gas saving is equivalent to 3051 tonnes of CO₂.

European Regional Development Fund Measure 4.2.1.1 "Promotion of energy efficiency in residential buildings" (hereinafter – Measure 4.2.1.1).

Measure 4.2.1.1 is administered by ALTUM. The submission of projects started in September 2016 and their implementation will be completed by 31 December 2022. Across Latvia, since the beginning of the programme in the spring of 2016, 821 project applications have been submitted for a preliminary amount of EUR 375 000 000.

Within the framework of Measure 4.2.1.1, construction work has been completed in 155 buildings, 80 apartment houses are in the process of being renovated, while the remaining projects which have been submitted are at different stages of project preparation. The projects which have so far been completed show a significant reduction in energy consumption: if before renovation the average energy consumption of a building was 165 kWh per annum, then after renovation this is on average 67% lower or 54 kWh per annum, which also represents a significant saving for the residents.

Measure 4.2.1.1 is implemented with co-financing from the European Regional Development Fund. Most housing renovation projects have been submitted by residents of Riga and its surrounding regions (369 projects), followed by residents of apartment houses in Kurzeme (188), Vidzeme (124), Zemgale (109) and Latgale (31).¹⁸

To be achieved within the scope of the measure¹⁹:

- 19 589 households with an improved energy consumption classification by 31 December 2023;
- the average thermal energy consumption for heating in residential apartment houses after implementation of the energy efficiency improvement measures over a calendar year should not exceed 90 kWh/m²;
- additional capacity produced from renewable energy sources – 0.86 MW;
- estimated annual greenhouse gas savings – equivalent to 15 227 tonnes of CO₂.

Result indicator – by 31 December 2023, the average thermal energy consumption in buildings should be 120 kWh/m²/year.

Engaging ESCO market participants in the implementation of Measure 4.2.1.1

Notwithstanding that Cabinet Regulation No 160 of 15 March 2016 "Implementing Provisions of the of the Operational programme's "Growth and Employment" specific support objective's 4.2.1 "Promotion of energy efficiency in public and residential buildings" specific support objective measure 4.2.1.1 "Promotion of energy efficiency in residential buildings"" provide for the possibility of ESCO to participate in the implementation of Measure 4.2.1.1, it was found that the conditions governing the selection of suppliers require changes in order to encourage more active involvement of ESCO in the implementation of Measure 4.2.1.1, as well as to ensure the possibility for the ESCO to provide their services in line with generally accepted practices, as a result, the above Regulation was amended²⁰ These amendments specify, for example:

- where implementation of energy efficiency improvement measures are ensured by an energy efficiency service provider, it shall ensure that the building contractor, the field supervisor, the construction supervisor and other suppliers

¹⁸Available at:<https://www.altum.lv/lv/jaunumi/nosledzas-pieteikumu-pienemsana-daudzdzivoklu-maju-atjaunosanas-projektiem>.

¹⁹Available at:<https://likumi.lv/ta/id/281323-darbibas-programmas-izaugsme-un-nodarbinatiba-4-2-1-specifiska-atbalsta-merka-veicinat-energoefektivitates-paaugstinasanu>.

²⁰Available at:<https://likumi.lv/ta/id/311511-grozijumi-ministru-kabineta-2016-gada-15-marta-noteikumos-nr-160-darbibas-programmas-izaugsme-un-nodarbinatiba-4-2-1-specifiska...>

who will carry out the implementation of the energy efficiency project comply with the requirements of ALTUM. This provision provides that ALTUM will verify that all parties involved in the implementation of the project comply with best practices in accordance with the existing screening procedure for suppliers under Measure 4.2.1.1 – ALTUM will evaluate compliance of the building contractor and of the tender with the technical documentation, as well as supervising the project, including after completion of the facility to verify conformity of the work performed with the approved project.

- an authorised representative of the apartment owners may select the energy efficiency service provider for implementation of the energy efficiency improvement measures. The proposed changes to paragraph 68.1 of the above Regulation stipulate that, as part of the ESCO selection process, the contracting authority (the authorised representative of the apartment owners) will have to comply with requirements regarding the absence of conflicts of interest, as well as instructions given by ALTUM, which in this case will be the ESCO selection guidelines. The essence of the instructions is to ensure an open, transparent, non-discriminatory and competitive tender procedure.

ERDF measure 4.2.1.2 "Promotion of energy efficiency in public buildings" (hereinafter – Measure 4.2.1.2)

The objective of Measure 4.2.1.2 is to promote the energy efficiency, smart energy management and the use of renewable energy sources in buildings owned or used by a direct public authority or its subordinate bodies or derived public persons performing delegated functions. Measure 4.2.1.2 is primarily implemented in order to meet the European Commission's requirement of ensuring the central government's annual buildings renovation target of renovating 3% of the aggregate floor area of buildings.

In Latvia, the following categories of buildings (exceptions) are not included in the 3% target:

- buildings officially protected as part of a designated environment, or because of their special architectural or historical merit, in so far as compliance with certain minimum energy performance requirements would unacceptably alter their character or appearance;
- buildings owned by the armed forces or central government and serving national defence purposes, with the exception of separate accommodation or office buildings for personnel of the armed forces and other national defence agencies;
- buildings used as places of worship and for religious activities.

The following monitoring indicators and their values are to be achieved under the measure:

First selection round²¹:

- by 31 December 2023, the target result indicator of the specific support objective 4.2.1 "Promotion of energy efficiency in public and residential buildings" – average thermal energy consumption in buildings should not exceed 120 kWh/m² per annum. The indicator reflects the average thermal energy consumption in buildings throughout the Republic of Latvia;

²¹Available at:<http://likumi.lv/ta/id/284333-darbibas-programmas-izaugsme-un-nodarbinatiba-4-2-1-specifiska-atbalsta-merka-veicinat-energoefektivitates-paaugstinasanu>.

- output indicators to be achieved under the selection round by 31 December 2023:
- reduction of annual primary energy consumption – at least 23 580 MWh/year;
- installed additional capacity for the production of heat using renewable energy sources – at least 0.27 MW;
- estimated greenhouse gas savings of at least 3 932 tonnes of CO₂ equivalent per annum;
- The total public funding planned for the implementation of the selection round is EUR 75 154 879, including EUR 63 881 647 from the European Regional Development Fund and EUR 11 273 232 from the national budget.

Second selection round²²: The following monitoring indicators and their values are to be achieved under the measure:

- by 31 December 2023, the target result indicator of the specific support objective 4.2.1 "Promotion of energy efficiency in public and residential buildings" – average thermal energy consumption in buildings should not exceed 120 kWh/m² per annum. The indicator reflects the average thermal energy consumption in buildings throughout the Republic of Latvia;
- output indicators to be achieved under the selection round by 31 December 2023:
- reduction of annual primary energy consumption – at least 10 263 MWh/year;
- installed additional capacity for the production of heat using renewable energy sources – at least 0.58 MW;
- estimated greenhouse gas savings of at least 2 670 tonnes of CO₂ equivalent per annum.
- The total public funding available for the implementation of the selection round is EUR 34 678 030, including EUR 29 476 325 from the European Regional Development Fund and EUR 5 201 705 from the national budget.

To date, 33 buildings have been renovated (total costs EUR 27 201 922.08). Another 102 projects have been submitted for the renovation of 116 buildings (total estimated costs of EUR 99 765 507). At the same time, within the framework of the second selection round of the support programme, the acceptance of project applications will continue until 8 October 2020 within the framework of limited project selection.

ERDF specific support objective 4.2.2 "Promotion of energy efficiency and renewable energy use in municipal buildings under the integrated local government development programmes"

The SSO 4.2.2 aims to reduce primary energy consumption by promoting energy efficiency and reducing local government expenditure on heating, and by investing in local government buildings in line with the priorities set out in the local government development programmes. Within the framework of the improvement of energy efficiency, the renovation of building envelopes, insulation of cellar and upper floor coverings, conversion or renovation of local or autonomous heating infrastructure, reconstruction of ventilation and lighting engineering systems, purchase and

²²Available at:<https://likumi.lv/ta/id/296336-darbibas-programmas-izaugsme-un-nodarbinatiba-4-2-1-specifiska-atbalsta-merka-veicinat-energoefektivitates-paaugstinasanu>

installation of heat-producing sources using renewable energy sources, etc., and other activities are performed.

The following indicators are expected to be achieved by 31 December 2023 with the planned funding of EUR 60 583 995 for projects implemented under SSO 4.2.2:

- reduction of primary energy consumption in public buildings – at least 22 502 626 kilowatt hours per annum;
- estimated greenhouse gas savings of at least 5 676 tonnes of carbon dioxide equivalent per annum;
- additional capacity from renewable sources of at least 1.428 megawatts;
- average thermal energy consumption for heating – not more than 120 kilowatt hours per square metre per annum.

It should be noted that looking at the indicators of sites completed so far, the new energy savings for the period up to 2020 amount to 19.13 GWh (85 implemented projects). According to the building energy certificates, the approximate specific energy consumption per m² for the projects already mentioned was on average 255 kWh before, and 121 kWh after performing the energy efficiency works.

A fourth selection round is also planned for SSO 4.2.2 to support high-readiness projects to increase the energy efficiency of local government buildings in the municipalities of national and regional development centres to help them mitigate the negative impact of the national emergency and to facilitate a faster recovery of the economy from the crisis caused by COVID-19.

Existing municipal aid through tax incentives

According to the Law on Local Government Budgets, local governments draw up their budgets according to legislation currently in force, and the State administration is not authorised to intervene in the drawing up and implementation of local government budgets. Local government budgets are made up of a number of tax sources, some of which are also related to energy and climate activities, such as natural resources tax, real estate tax. Local governments also have the right to determine tax allowances. In Latvia, many local governments provide for financing in their budgets for the implementation of energy efficiency measures, including the introduction of energy management systems, both for their own properties and as support for measures to improve energy efficiency for their residents. Several local governments also apply real estate tax allowances in respect of energy efficiency measures undertaken in properties, such as for apartments in insulated residential apartment buildings²³.

Regulations for the application of real estate tax (including buildings) are laid down in the Law on Real Estate Tax. Article 3 of the Law on Real Estate Tax provides that the rate or rates of real estate tax between 0.2% and 3 per cent of the cadastral value of real property shall be determined by the local government according to its binding regulations, which it publishes by 1 November of the pre-taxation year. A local government sets a rate of real estate tax in excess of 1.5 per cent of the cadastral value of real property only if the real estate is not maintained in accordance with the procedures laid down in legislation.

In determining the rate or rates of real estate tax, the local government may, according to its discretion, apply the following principles:

²³Available at:<https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-20212030-gadam>.

1) The principle of aid for economic activities, according to which a local government uses the tax rate as a means of increasing the competitiveness of businesses or particular types of economic activity within its territory, observing the provisions of Commission Regulation (EU) No 1407/2013 of 18 December 2013 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union in respect of de minimis aid rules (Text with EEA applicability).

2) Principle of territorial development and management according to which a local government uses the tax rate to promote and to manage the development of its territory.

Under the existing real estate tax policy, the cadastral value of a building and, in some cases, its real estate tax rate may increase after reconstruction or renovation of the building. The reconstruction and renovation of a building requires considerable investment and, in most cases, the need to assume financial obligations towards creditors.

Article 5, points 3 to 5, of the Law on Real Estate Tax sets out the criteria according to which local governments may, with binding regulations, determine exemptions for certain categories of real estate taxpayers. For certain categories of real estate taxpayers, local governments may determine allowances of 90, 70, 50 or 25 per cent of the amount of real estate tax.

Local governments have the right, in their binding regulations, to determine allowances in respect of real estate tax or of the applicable rate that would encourage the owners of buildings to undertake energy efficiency measures.

For example, the Riga City Council's binding Regulation No 111 of 18 December 2019 "Procedures for granting real estate tax allowances in Riga"²⁴ provides in paragraph 3.19 that allowances from the amount of real estate tax calculated for the tax year may be granted to a person in respect of an apartment building, all of the façades of which have been insulated after it having been commissioned, or in respect of free-standing groups of premises (apartments), which are part of such a building - in the amount of 90%. Allowances shall be granted to all owners of a building starting from the following tax year after making the relevant note in the joint information system of the Riga City Council:

- for 10 tax years in the case of insulation of all façades if undertaken after 31 December 2013;
- for a continuous period of validity of an energy efficiency certificate of a building, provided that the insulation of all façades was carried out before 1 January 2014 but not for longer than 10 years.

The binding Regulation No 314 of the City of Valmiera "Procedure for granting real estate tax allowances in Valmiera" stipulates that in respect of a renovated building used for economic activity, if the energy efficiency of the building is improved one year after the completion of the construction works, an allowance of 50% of the real estate tax amount calculated for the taxation year can be obtained by a tax payer.

In Sigulda municipality, in accordance with binding Regulation No 25 "On the application of allowances to real estate taxpayers in the Sigulda region" the owners of apartments in residential apartment houses where energy efficiency improvement or façade renovation works have been performed without local government funding (works performed are attested by a certificate of commissioning of the site or a confirmation card of the building façade with a note from the construction board

²⁴ Available at: <https://m.likumi.lv/doc.php?id=312246>.

regarding completion of the construction work) shall be granted a real estate tax allowance for the relevant dwelling: 90% in the first year after commissioning of the site; 70% in the second year after commissioning of the site; 50% in the third year after commissioning of the site.

Support from local governments for the preparation of documentation

Often, one of the obstacles for citizens to move towards energy efficient housing is the cost of evidencing the economical and technical the need for insulation. For example, the costs of preparing an energy audit of a building and the costs of preparing a technical project for measures to improve the energy efficiency of the building. Consequently, a large number of local governments in Latvia provide financial support for the promotion of energy efficiency.

For example, the local government of Liepāja is one of the local governments providing support²⁵ for the preparation of technical documentation:

1. for the preparation of an energy audit report and temporary energy certificate of an apartment house, for the preparation of a report of the input data values used in calculations for the energy certificate of a building,
2. for the preparation of an opinion on the technical inspection of an apartment house,
3. for the preparation of a valid renovation or reconstruction plan (including expertise, if necessary) or a confirmation card for the simplified renovation of a façade of an apartment house, a confirmation card for the internal engineering network and the preparation of an estimate for construction work

Co-financing is granted for up to 50% of the total costs of eligible activities, but not more than EUR 1.75 per square metre of the total area of apartment property.

Staged renovation of buildings: a system of passports for building renovation

Directive 2010/31/EU, apart from the previously defined requirements to include policies and activities to encourage the cost-effective complete renovation of buildings, also provides for support for targeted cost-effective measures and renovations, for example through the introduction of an optional scheme for building renovation passports.

In line with the European Commission Recommendation (EU) 2019/786 of 8 May 2019 on the renovation of buildings²⁶, the Directive does not specify further what a building renovation passport is, but other sources identify a number of common elements to be used as examples: it is mentioned that it can be an electronic or hard format document setting out a long-term (15-20 years) roadmap for the gradual renovation of a specific building, which could be based on an on-site energy audit with specific quality criteria and outlines the relevant measures and renovation measures that could improve its energy efficiency.

Since 2010, the Law on the Management of Residential Buildings has been in force in Latvia.²⁷ Pursuant to Article 8 of the Law on the Management of Residential Buildings, a house file shall be established for each residential building (hereinafter -

²⁵ Available at: <https://www.liepaja.lv/energo-projekti/atbalsts-dzivoklu-eku-energoefektivitatei/>.

²⁶ Available at: <https://eur-lex.europa.eu/legal-content/LV/TXT/PDF/?uri=CELEX:32019H0786&from=PT>

²⁷ Available at: <https://likumi.lv/doc.php?id=193573>.

"house file"). The house file may be in hard or electronic form and includes, *inter alia*, technical documentation – technical passport (plans, schemes), project documentation, energy passport and energy plan, findings from a technical survey of the house, etc. Other information relevant to the administration and management of the residential building may be included in the house file.

There is also Cabinet Regulation No 907 of 28 September 2010 "On surveying, technical maintenance, current repairs and minimum requirements for energy efficiency of a residential house"²⁸ which lays down minimum requirements for ensuring the energy efficiency of a residential building. Pursuant to this Regulation, the manager of a residential house is obliged to plan energy efficiency improvement measures if the average thermal energy consumption of the residential house exceeds the requirements laid down in this Regulation.

Safety

In accordance with the requirements of Part VI of Cabinet Regulation No 383 of 9 July 2013 "On energy certification of buildings", building owners must ensure regular checks of heating and air-conditioning systems.

The inspection of heating systems shall be carried out on accessible parts of the heating systems of buildings (e.g. heat generator, control system and circulation pumps or pumps) if the effective rated output of these systems for space heating purposes is in excess of 20 kilowatts.

Inspection of a heating system shall include an assessment of the boiler's efficiency and boilers shall be tested in accordance with standard LVS EN 15378:2009 "Heating systems in buildings. Inspection of boilers and heating systems". An independent expert shall draw up the following documents regarding inspection of the heating system:

- heating system boiler inspection certificate in accordance with Annex D to standard LVS EN 15378:2009;
- heating system inspection certificate in accordance with Annex K to standard LVS EN 15378:2009.

Inspection of air conditioning systems shall be carried out in respect of the accessible parts of the air conditioning system if the effective rated output of the air conditioning system is more than 12 kW. Air conditioning systems shall be inspected in accordance with the standard LVS EN 15240:2009 L "Ventilation for buildings. Energy efficiency of buildings: Guidelines for inspection of air-conditioning systems". An appropriate certificate shall be drawn up in relation to the inspection of an air-conditioning system.

An air-conditioning system shall be checked:

- at least once every six years, if the air-conditioning system is equipped with command and control devices ensuring the monitoring and control of the electronic systems;
- in other cases - at least once every four years.

The Ministry of the Economy has prepared a draft Order "On an action plan for the improvement of the technical condition of the stock of residential housing during its

²⁸ Available at: <https://likumi.lv/doc.php?id=218831>.

operation" which was announced at a meeting of State Secretaries on 13 August 2020²⁹. This draft order contains a number of measures in the action plan. Measures to promote the safety of buildings include:

- Encourage citizens to invest in the timely maintenance of housing and the use of renewable energy sources;
- Improve the rights, duties, responsibilities, decision-making procedures of apartment owners and property managers, including a register of managers and a monitoring mechanism for the independent maintenance of buildings;
- To carry out a study of the mechanical strength and stability of building envelopes of series type residential apartment buildings and to prepare standard solutions;
- Implementation of fire safety requirements in respect of the common parts and technical areas of residential apartment buildings as a mandatory component of residential building management.

Information campaigns to promote energy efficiency

Information campaign "Living warmer!"

In February 2010, the MoE, in cooperation with its partners, launched an information campaign "Living warmer!" with the aim of informing citizens about energy efficiency, the economic returns of investments and other positive benefits of engaging in measures to promote energy efficiency. The campaign has been running successfully for ten years and informative events have been regularly held throughout Latvia – seminars, conferences, exhibitions. Some of the seminars were also webstreamed online and videos can be found at www.youtube.com/siltinam. The themes of the measures have been different: the need to improve the technical condition of your home, how to pass decisions at general meetings of apartment owners, how to carry out high-quality renovation of housing, sharing experiences related to already renovated houses, etc. The implementation of such measures has clearly promoted public awareness and knowledge of the need for energy efficiency measures, has established cooperation between service providers and clients, which has resulted in renovated buildings throughout Latvia. The total number of activities within the framework of the campaign is 426, with the total number of participants reaching almost 47 thousand.

As part of the campaign, there is active communication on social media at www.twitter.com/siltinam, www.facebook.com/dzivosiltak, all presentations can be found at www.slideshare.net/siltinam. Information on current events is also regularly circulated to clients and collaborating partners.

The Ministry of the Economy has also created an e-card of renovated houses where information can be found on renovated buildings within the framework of activity 3.4.4.1 "Measures to improve the heat insulation of apartment buildings" and Measure 4.2.1.1.³⁰

²⁹Available at:<http://tap.mk.gov.lv/lv/mk/tap/?dateFrom=2019-08-20&dateTo=2020-08-19&text=dz%C4%ABvojam%C4%81+fonda+tehnisk%C4%81&org=0&area=0&type=0>

³⁰Available at:<https://www.google.com/maps/d/viewer?mid=1TEs0CCVzp2uGBdXTVCvnmbrt54&ie=UTF8&oe=UTF8&dg=feature&msa=0&ll=56.89454067366063%2C24.35682040000006&z=8>

Competition "The most energy efficient building in Latvia"

This competition, in cooperation with the information campaign "Living warmer!", has been organised since 2011 (www.energoefektivakaeka.lv) which aims to promote good practices in the field of energy efficiency of buildings through the construction, renovation and reconstruction of energy-efficient buildings, thereby reducing carbon dioxide (CO₂) emissions into the atmosphere and raising public awareness of the thermal insulation of buildings, as well as the importance and opportunities of reducing greenhouse gas emissions in order to create a high-quality, architecturally expressive living space.

The competition is divided into nominations "Renovated apartment building 2020", "Apartment building – new building 2020", as well as "Public building 2020" and "Private house 2020".³¹

For example, in the nomination for the most energy efficient building in 2020, the winner among renovated apartment buildings was an apartment building at Daugavas iela 2, Salaspils which was commissioned in 1971 and renovated in 2019. The building has five storeys, eight stairwells, a basement with a large total area of 7280.4 m². According to the data, the heating energy consumption of the building is estimated at 27.86 kWh/m²/year, while the total thermal energy savings amount to 63%. Therefore, it can be said that the building has been completely renovated, taking into account that the energy efficiency measures (thermal energy savings) are more than 60%.

AS "Latvenergo" Energy Efficiency Centre

The promotion of energy efficiency is one of the strategic directions of AS "Latvenergo" and therefore, with a view to educating customers and increasing energy efficiency among the Latvian public, the Energy Efficiency Centre was established in 1997, which is charged with specifically implementing a series of informative educational measures in energy efficiency in both the retail and corporate sectors.³²

The Energy Efficiency Centre is the only centre of its kind in the Baltics, and over 20 years it has become a platform for professionals from the industry to discuss current energy efficiency issues in workshops and events organised by the Centre.

The Energy Efficiency Centre has developed a wide range of informational material and is actively involved in informing the public through the media. Exciting and interactive excursions are also offered to groups of interested parties to test their ingenuity and knowledge of energy-related issues. The Centre's specialists also engage in various educational activities, visiting educational institutions and universities, providing exploratory lectures to pupils, students, teachers and employees of various companies.

Any interested party is invited to come for individual advice at the Energy Efficiency Centre, where it is possible to see and test the exhibition in person, ranging from electric transport and solar technologies to lighting solutions, household appliances and smart technologies.

A special energy efficiency section has been developed on the portal elektrum.lv, where various information on energy efficiency opportunities and solutions for both

³¹ Available at: <http://www.energoefektivakaeka.lv/index.php/home/konkursa-kandidati-2020>

³² Available at: <https://www.elektrum.lv/lv/majai/energoefektivitate/energoefektivitates-centru/par-centru/>.

households and companies is compiled and made easily accessible, including various digital tools, such as a light bulb selection guide, interactive energy efficiency e-learning, 3600 advice home.

At the Energy Efficiency Centre, everyone can develop their skills in energy efficiency by acquiring knowledge on the efficient and effective use of electricity.

Given that the concept of energy efficiency is much broader than in the context of this Strategy, the existence of such an Energy Efficiency Centre contributes to citizens' understanding of the energy savings and benefits that different energy efficiency measures can bring to everyone and to the environment. Within the framework of the Strategy, it has already been recognised that one of the main reasons that hinders the renovation of buildings is the public's narrow understanding of the potential positive benefits of energy efficiency measures.

State and Local Government Energy Efficiency Fund

The Ministry of the Economy established a national energy efficiency fund to support energy efficiency initiatives. The Fund consists of contributions from parties responsible for the energy efficiency obligation scheme, income from energy efficiency levies, as well as other financial sources. The resources of the Fund are used for the achievement of the national energy efficiency targets, as well as for public information and education measures. In 2019, businesses and the public were informed about energy efficiency opportunities with the support of the Fund.³³

It is planned to make use of financial instruments in order to promote energy efficiency measures in private houses. The programme is partly financed by the Fund. More details on the programme are described in Chapter 3 "Roadmap".

2.3 Building stock with the worst performance, conflicting interests of parties and market deficiencies. Actions to reduce energy poverty

2.3.1 Building stock with the worst performance

Cabinet Regulation No 907 of 28 September 2010 on surveying, technical maintenance, current repairs and minimum requirements for the energy efficiency of residential buildings lays down minimum requirements for ensuring the energy efficiency of residential buildings. Pursuant to this Regulation, the manager of a residential building is obliged to plan energy efficiency improvement measures if the average thermal energy consumption of the residential building exceeds the readings laid down in this Regulation. Article 6(2)(f) of the Law on the Management of Residential Buildings states that one of the mandatory activities of managing a residential building is to ensure compliance with the minimum requirements for the energy efficiency of residential buildings. In Latvia, ensuring that a building's energy efficiency is at least at the minimum level under minimum energy efficiency requirements has been set as a mandatory management requirement, thus contributing to the improvement of the worst-performing building stock.

The residential building manager must plan energy efficiency improvement measures, including replacing worn-out elements or structures, if the average heat consumption over the last three calendar years exceeds 200 kWh/m² per annum or 150 kWh/m² per annum, where the heat is used exclusively for residential heating. The actually heated area of the building is taken into account when calculating the average heat consumption over the last three calendar years. These energy efficiency improvement measures derive from the above mentioned Cabinet Regulation No 907 of 28 September 2010 on inspection, technical maintenance, routine repair and minimum requirements for the energy efficiency of residential buildings.

³³Available at:<https://www.altum.lv/lv/pakalpojumi/uznemumiem/aizdevumi-uznemumu-energoefektivitatei/valsts-energoefektivitates-fonds/>.

2.3.2 Market deficiencies

In Latvia, the challenge is the low solvency of the population (high proportion with low incomes), which is a product to the relatively low level of wages in the country, while also taking into account the shadow economy aspect.

Society is forced to decide between basic expenditure, which includes, for example, heating, electricity, food, medical expenditure, as opposed to making timely investments in the management and maintenance of buildings. In the vast majority of such situations, people tend to choose to cover their basic expenses.

According to data from *Eurostat*, in 2018 only 7.5% of the population in Latvia rented an apartment at its market value, whereas the majority of the population (69.3%) owned their home without mortgage credit obligations, which is mainly a result of the extensive privatisation process after regaining independence.

According to the European Commission's 2019 report on Latvia, access to decent housing, especially for low-income groups, is limited. 15.2% of the population suffer from very poor living conditions, significantly above the EU average of 4.5%.³⁴

The underlying reason for the poor technical condition of buildings is the low solvency of building owners as mentioned above and the lack of availability of financial resources in the regions. It should be noted that the timely and optimal maintenance of buildings and infrastructure poses challenges for the state, local governments and for residents.

Also, based on information provided by Riga City Council Housing and Environment Department, the number of persons to whom assistance is being provided in connection with the demolition of residential buildings or the complete overhaul of residential buildings (residential space) is rapidly increasing. This can be explained, inter alia, by the poor technical condition of existing residential buildings, the improvement of which requires additional funding.

At the same time, a shortcoming is the availability of targeted information for the public on the requirements arising from legislation on the maintenance of buildings to the appropriate technical standard, as well as ensuring the level of energy efficiency of buildings in accordance with the requirements laid down in legislation. The public lacks information and real examples (good and bad experiences in building management and renovation). Consequently, such experience may contribute to the decision-making process regarding the maintenance and renovation of the technical standard of buildings.

Availability of affordable housing

Access to affordable quality housing is essential for ensuring basic human rights, access to employment, raising the well-being of households and for addressing demographic challenges. Latvia, like other EU countries³⁵, currently faces challenges in providing affordable housing. This is highlighted not only by the European

³⁴ European Commission's 2019 report on Latvia

³⁵ According to *Eurostat*, two fifths of the country's population (40.5%) in Greece and just over one fifth (20.7%) of the population in Bulgaria spent more than 40% of their comparable disposable income on housing in 2016, with about one in six in Germany (15.8%) and Denmark (15.0%) in the same situation.

Commission in its 2019 report on Latvia³⁶³⁷³⁸, but also by the Organisation for Economic Cooperation and Development (OECD) in its 2017 and 2019 Economic Reports on Latvia. The reports underline that only a small part of the Latvian population lives in rented apartments and that the lack of affordable and high-quality rental housing is a major obstacle to internal mobility within the country. Investment in housing is crucial to facilitating better internal mobility and access to quality jobs in more distant regions.

The OECD, in its study published on 17 June 2020, entitled "Political Trends in Promoting Housing Accessibility in Latvia"³⁹, stresses that the functioning of the housing market has important implications for individual well-being and economic development, and also influences labour mobility. Mobility of residents in Latvia is very low (well below the EU average) and even lower for employment-related reasons, which poses a barrier to matching jobs with job-seekers. One of their recommendations is to consider establishing a self-financing fund to support the construction of new affordable housing.

An analysis of the situation in the rental market shows that low incomes prevent many households from having access to housing that meets the requirements of modern living standards, construction and energy efficiency. Housing can be considered as affordable for a household if its total expenditure on the housing does not exceed 30% of its income. There is also a lack of private investment in the construction of rental apartment buildings. In addition, the rising cost of housing and access to housing for low and middle-income households are a challenge both in the regions, as well as in Riga and its environs.

As also described in the Strategy below, a funding gap poses obvious problems for renovating the necessary building stock and approach climate neutrality objectives. One of the possibilities for encouraging this process is to involve the private sector (e.g. more actively use ESCO services), but ESCO services have currently not received much uptake in Latvia. In view of the above situation, the current obstacles to the development of ESCO are:

1) ESCO have no collateral security for receiving loans (investments are made in properties not owned by ESCO, and the chances of recovery of the respective investment are questionable - the market is illiquid and there are limited opportunities to access the site of investment).

2) The history of ESCO activities is not long enough, resulting in credit institutions having insufficient experience with the relevant projects; at the same time such experience is lacking on the part of the entrepreneurs in order that they may prove

³⁶ 2019 European Commission Report on Latvia, p. 26 (Eng.): Investment in housing is crucial to facilitating better internal mobility and access to quality jobs in more distant regions. The large proportion of owner-occupied buildings means that there are few solutions for people who want to move to work outside the Riga region. Moreover, the population's low purchasing power makes commercial residential development not viable. This in turn hampers regional growth and facilitates emigration

³⁷ *Ibid*, p. 29 (Eng.): The lack of affordable and high-quality rental housing is a major obstacle to internal mobility within the country

³⁸ *Ibid*, p. 54 (Eng.): Investment in housing is hindered by a lengthy and costly construction process, poor protection of landlords' interests in the rental law and lack of long-term financing (for 30 years or more) for projects outside Riga. Housing investment outside Riga is crucial to regional development as it facilitates better employment opportunities through higher labour mobility within the country. Regional development is also an important element in reducing emigration and thus slowing down population decline.

³⁹ Available at: "[Policy Actions for Affordable Housing in Latvia](#)", OECD, 2020.

the sustainability of the respective business model and thus their ability to ensure stable long-term cash flow.

- 3) ESCO's business model is not familiar to potential clients.
- 4) investments by energy efficiency service contract providers are accounted for as public debt;
- 5) local and State authorities have the right to use ESCO (PESCO) and enter into energy performance contracting, but the investments made under the contract are accounted for as public debt, with an impact on fiscal space.
- 6) an obstacle in terms of access to finance – the need for long-term resources, low and stable lending rates that additionally allow for the release of the loan portfolio (refinancing mechanism), and the availability of short-term resources to implement several projects simultaneously;
- 7) the lack of standardised template contracts for the industry also hampers the development of the ESCO market.

2.3.3 Possible influencing factors for future renovation of buildings

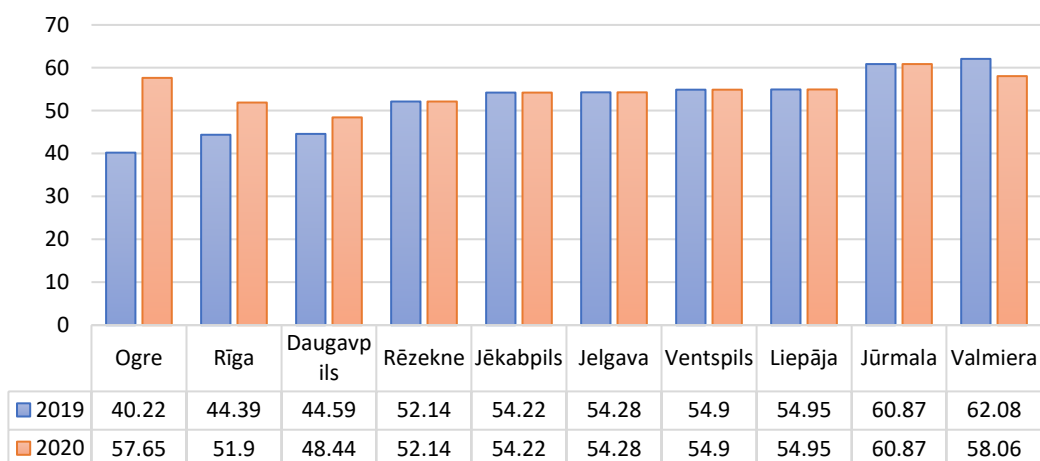
At the same time, it should be noted that, compared to the period 1960-1990, the average winter air temperature in Latvia has increased from -4.4 °C to -2.9 °C in the period 1981-2010⁴⁰. Consequently, in the new construction standard LBN 003-19 "Construction climatology"⁴¹ which entered into force on 21 September 2019, the length of the heating season in Latvia has decreased to an average of 198.7 days, and the average air temperature of the heating season has increased to +1.1 °C. The heating season in Riga has decreased to 192 days with an average temperature of +1.1 °C in Latvia. A similar situation has been observed with respect to other cities in Latvia. Also in line with future climate change scenarios, winter average temperatures are projected to continue to rise significantly in the future, rising by up to +0.6 °C to +2.7 °C by 2100⁴². Thus, it can be concluded that Latvia's climate is getting warmer and as the heating period decreases, energy efficiency measures become less and less economically justified, because the maturity period increases. At the same time the advantage of insulated buildings during heat waves must be considered, because higher thermal inertia ensures that the building and its structures do not heat up as much in hot summers.

⁴⁰Latvian Environment, Geology and Meteorology Agency's report "Climate change scenarios for Latvia". Available at: <https://www4.meteo.lv/klimatariks/files/zinojums.pdf>

⁴¹Available at: <https://likumi.lv/ta/id/309453>

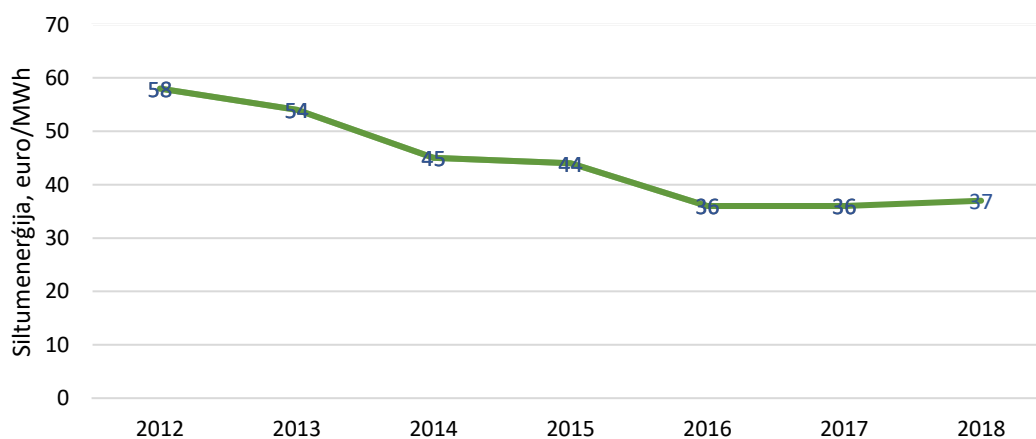
⁴²Latvian Environment, Geology and Meteorology Agency's report "Climate change scenarios for Latvia". Available at: <https://www4.meteo.lv/klimatariks/files/zinojums.pdf>

Figure 3. Thermal energy tariffs in Latvian cities at the beginning of 2019 and planned tariffs in 2020, EUR/MWh excluding VAT⁴³



It should be stressed that in the calculation of the economic feasibility of projects, the thermal energy tariff is one of the most important variables for measuring the savings of energy efficiency measures taken in an apartment building. Figure 4 shows the evolution of the average price of thermal energy for end-consumers over the last 7 years. Although the thermal energy tariff almost halved between 2012 and 2016, it has stabilised over the last 2 years and there is no reason to believe that it could continue to decrease. (see Figure 4) This is also demonstrated by the heat tariffs shown in Figure 3, and as a result, we are likely to see a moderate increase in heating energy costs in the coming years. This situation may have a negative impact on positive decisions by citizens in apartment buildings regarding their participation in an energy efficiency improvement project, while it is a positive factor for those apartment buildings which have already undertaken energy efficiency measures under the programme in terms of the payback time for investments.

Figure 4. Average prices of energy resources to end consumers between 2012 and 2018, EUR/MWh excluding VAT.⁴⁴



[KEY: Heat, EUR/MWh]

An analysis of the costs of projects submitted by ALTUM by July 2019 shows that the average costs in July 2019 amount to EUR 190/m² (incl. VAT).

⁴³Tariffs for thermal energy supply services approved by the Public Utilities Commission (2019).

⁴⁴ Available at: https://data1.csb.gov.lv/pxweb/lv/vide/vide__energetika__ikgad/ENG190.px.

As the cost of building energy efficiency measures per m² increases, total project costs also increase. As a result of compiling up-to-date information on apartment buildings on which construction works had started under Measure 4.2.1.1 by July 2019, it was concluded that the average cost of energy efficiency measures for an apartment building is EUR 434 000, representing an average total eligible cost of EUR 416 000.

Collateral for loans for the renovation of apartment buildings is the future cash flow and timely maintenance payments by apartment owners. Consequently, apartment buildings must have as low a percentage of debtors as possible (no more than 10% over the last 12 months).

Credit institutions finance economically viable projects for which there is no doubt that they will be repaid. Credit institutions do not issue loans for the renovation of apartment buildings in administrative areas where the market value of the real estate (apartment) per m² is lower than the cost of construction per m²; however, depending on the project, commercial banks may, if possible, obtain a guarantee from ALTUM or the European Investment Fund.

As regards the share of public funding (including co-financing from EU funds), there is a need to avoid a gap between the programming periods of EU funds. These disruptions have a significant negative impact on the construction sector, on companies specialising in the implementation of energy efficiency measures (from designers to construction contractors and project managers) and on the energy efficiency process of residential apartment buildings as a whole. As already described in Chapter 3 of the strategy, the government has allocated an additional EUR 35 000 000 for the renovation of apartment buildings, which will cover the potential gap, and some 138 additional buildings will be renovated.

2.3.4 Obstacles to the renovation of buildings

Obstacles to the renovation of non-residential buildings

Within the framework of Measure 4.1.1, support is provided to businesses for improving the energy efficiency of non-residential buildings used in the manufacturing industry.

Within the framework of this measure, it can be concluded that for promotion of the efficient use of energy resources, reduction of energy consumption and transition to RES in the manufacturing sector, the main obstacles are:

- 1) Little experience of manufacturing enterprises and limited knowledge on implementation of energy efficiency improvement measures;
- 2) Entrepreneurs prefer to change plant as a priority, rather than to take targeted energy-efficiency measures in manufacturing buildings.

At the same time, it should be noted that support for improving the energy efficiency of non-residential buildings should also be provided for in the next programming period of EU funds by supporting businesses. At the same time, it would be necessary to include a wider range of eligible businesses, including offices, entertainment, sports buildings, commercial buildings, logistics buildings, etc. It would also be necessary to analyse exactly who would be in need of State aid, moreover, what type of aid it might be. For example, in the case of aid in the form of grants, taking into account the administrative costs, the potential risk of financial correction.

Regarding obstacles to the renovation of public buildings, private houses and apartment buildings, on 11 March 2020 the Ministry of the Economy organised a design

workshop "Developing proposals for the basic conditions of potential EU funds programmes in the field of energy", where experts from the sector had the opportunity to provide their assessment of the existing support programme, as well as to make proposals and discuss measures planned in the EU's new 2021-2027 programming period. The discussions highlighted a variety of obstacles. Some of them are listed below.

Obstacles to the renovation of public buildings:

- In view of the focus of the activities supported by the existing programme being on improving the energy efficiency of buildings, this poses problems with respect to the overall fixing of buildings; it is therefore necessary to take a comprehensive view of buildings, taking into account all the activities needed to fix a building (i.e. problems within sectors with respect to finding funding to cover ineligible costs);
- The large amount of bureaucracy involved in various aspects of the process - procurement, project management costs, identification of additional activities, administrative burden;
- There may be a need to create a system to grade the priority for potentially renewable buildings, so as not to create situations where, for example, a municipal educational institution is renovated which is closed after a year for other reasons;
- Lack of expertise at various stages of project implementation (procurement, project management, etc.);
- Questionable quality of energy audits;
- Insufficient exchange of experience;
- Lack of awareness by end-users of a building of the requirements for use of the building in order to achieve the greatest possible savings, the need for high-quality cooperation between managers and users.

Obstacles to the renovation of private houses:

- It is difficult to choose an appropriate technological solution;
- Clients have doubts about the result, have no confidence in whether the results achieved will be in line with the indicators/expectations, and there is a lack of access to experts;
- The challenge of finding a solution of an appropriate quality at a reasonable price;
- The need for behavioural change;
- Limited access to funding, especially in the regions.

Obstacles to the renovation of residential apartment buildings:

Issues identified during implementation of the current Measure 4.2.1.1:

1) Adopting a decision on renovation of the building and applying for the programme:

- lack of awareness/knowledge of the potential benefits;
- lack of initiative and bad/unsuccessful examples discourage applying for the programme;

- applying for the programme is considered bureaucratic from the customer's point of view;
- adopting a decision at a general meeting of the house with the required 67% majority of votes for implementation of the project makes it difficult to organise this process;
- there is currently no 'stick' principle to encourage potential customers of the programme to apply for the programme.

2) Implementation of projects submitted under the programme:

- complexity of project implementation, given that there are many parties involved in project implementation;
- in some cases, the prospects for regional development are uncertain;
- aid intensity and attracting grants are necessary to perform all planned works;
- extending maximum aid intensity beyond the most deprived persons.

On the other hand, from the point of view of commercial banks, the main obstacles to a successful process of renovating apartment buildings are as follows⁴⁵:

- the lack of sufficiently targeted information on the obligations of apartment owners arising from the regulatory framework for building maintenance and energy efficiency, and on available forms of support and good and bad practices in house renovation;
- no information platform is available on the state of buildings, on renovated buildings, and on the state of energy efficiency of the building stock; property managers are not monitored;
- in view of the upcoming regional reform in Latvia, which will result in a significant reduction in the number of local authorities, the issue of concentration of investment and the labour mobility aspect (internal and external migration) will arise;
- the solvency of the population remains low, allowing savings to be built up gradually for the renovation of buildings, as well as carrying out smaller scale projects;
- looking from the perspective of 2030, it should be noted that, as in Estonia, the residential housing segment will see different stages of readiness of apartment owners to renovate their homes. This means that there must be flexibility in the available instruments (different instruments for smaller-scale projects, other instruments for large-scale complex projects – grants with different support);
- the risk of applying financial corrections may reduce the willingness to commit to the realisation of projects, making it difficult for owners to make decisions;
- given that the risks arising from the application of financial corrections cannot be eliminated by credit institutions, credit institutions have to evaluate projects by making assumptions about a significant reduction in the amount of the grant. Accordingly, credit institutions have to offer financing options only for the renovation of apartment buildings, where the apartment owners are sufficiently solvent to cover the renovation costs even in the event of a grant reduction; this means that homes that cannot financially cover a potential grant reduction may be deprived of access to funding. It is therefore important to plan the programme

⁴⁵ Opinion of the Latvian Finance Industry Association regarding the main barriers to renovation of buildings.

in such a way that the risk of financial corrections should not arise, to minimise it from the very beginning of the project, by providing monitoring measures and competent advice;

- it should be ensured that the construction sector is informed and able to meet different requirements in the construction process in order to minimise the risk of applying financial corrections.

2.3.5 Reducing energy poverty

Energy poverty is linked to a number of adverse effects on human health and well-being, such as respiratory diseases, which are exacerbated by low temperatures. It is also linked to gas, heat and electricity bills that citizens cannot afford to pay. Energy poverty has an indirect impact on a number of indicators characterising quality of life and well-being of households and citizens, including health, the environment and productivity. Energy poverty could thus be said to be a combination of low income, high energy expenditure and poor housing energy efficiency.

Latvia's approach to tackling energy poverty is mainly through social policy. Local governments need to ensure minimum income levels for all households where necessary, and they can also provide housing benefits for households which include electricity and heating costs. In addition, the national government provides financial support to certain vulnerable groups to enable them to pay for electricity.

Some general energy policies could be beneficial for poor households. The energy efficiency obligation scheme requires electricity suppliers to achieve a certain amount of energy savings by informing consumers about energy efficiency and promoting energy efficiency improvements. The 'Live warmer!' measure already described in the Strategy is an agreement signed between various stakeholders in the public and private sectors to contribute towards the reduction of energy poverty by cooperating and providing information to households.⁴⁶

15.2% of the population suffer from very poor living conditions, well above the EU average of 4.5%. Half of those living below the poverty risk threshold live in poor living conditions (leaking roof, damp walls, lack of light, rotting window frames, absence of indoor toilet, bath or shower). Almost one third (32.9%) of households report that housing costs are a major burden. Social housing accounted for only 0.4% of the housing stock in 2016, compared to an EU average of 8%. There are currently 7000 people waiting for housing.⁴⁷

At the same time, attention must be paid to the means of the population and the overall economic situation. For example, in order for a household to be able to afford to rent an apartment that meets construction and energy efficiency requirements, taking into account the above mentioned proportion of expenditure from disposable income on housing [30% of a household's total income], a household's income must start from 1600 EUR. 80% of households are denied the opportunity to rent a dwelling that meets modern construction standards and energy efficiency requirements, as their income is less than 1600 EUR per month. In addition, 50% of households have a monthly income of less than EUR 700 per month, so half of Latvian households would have to double their monthly income in order to be able to afford to rent a dwelling that meets modern construction standards and energy efficiency requirements.⁴⁸

Latvia states that it is necessary to continuously reduce the energy poverty rate by 2030 to ensure that it is below the EU average. Consequently, the 2030 energy

⁴⁶Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-2021-2030-gadam>.

⁴⁷2019 European Commission Report on Latvia, p. 32. Available at: https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-latvia_en.pdf

⁴⁸The preliminary impact assessment report (annotation) of the draft Cabinet Regulation "On state aid for construction of rental residential homes" and "Amendments to Cabinet Regulation No 469 of 15 July 2016 On parallel loans for improving the competitiveness of economic activities". Available at: <http://tap.mk.gov.lv/mk/tap/?pid=40460362>

poverty target for Latvia is to ensure that the energy poverty rate in Latvia is below 7.5%.

According to the NAP2027, the task [351] is to improve access to housing for those in distress and the disadvantaged population. Development of mechanisms to provide financial support. Addressing factors that impede the supply of rental housing.

In order to achieve this task, the following activities should be carried out:

- to develop a mechanism allowing individuals to receive a grant for the purchase or construction of a dwelling, where the amount of the grant is determined by the number of children in the family, an initiative already described in Chapter 3 of the Strategy;
- to develop a unified housing benefit calculation system which takes into account households' expenses for housing;
- to provide housing support to population groups facing temporary difficulties due to objective circumstances, including dependents who have lost their guardians;
- to identify impeding factors to the availability of high-quality rental housing and the purchase of housing, to implement measures for their gradual elimination;
- to ensure that local governments can provide assistance with living accommodation to persons whose dwelling is not fit for habitation because it has suffered as a result of a terrorist attack, an event of nature, an accident or other catastrophe, or if the building has been declared unfit for habitation, but the person owns a dwelling in that property.

The NAP2027 also entails tasks such as:

- renovating and increasing the number of social housing, while creating an instrument to provide housing support to low-income people to relocate in order to facilitate their participation in the labour market [349];
- reimbursement of costs of relocating people to new housing from an area with limited employment opportunities and high costs of receiving infrastructure and services to an area that provides employment opportunities. The planned indicative financing (ERDF) for these tasks is estimated at EUR 60 900 000.

The planned programme, its support mechanisms and the range of beneficiaries for the achievement of the NAP2027 objectives are described in more detail in sub-chapter 3.1.1 – Support mechanisms for achieving the energy efficiency targets of buildings.

Solutions for reducing energy poverty are developed by implementing the project "Sustainable energy infrastructure and market" of the national research programme "Energy" where an assessment of the energy poverty situation in Latvia is carried out, a definition of energy poverty is being developed, including energy poverty criteria for Latvia, and social groups at risk of energy poverty are identified on the basis of the established criteria. The project is expected to end in 2021.

The Latvian Consumer Interest Protection Association, in cooperation with SIA Jelgavas nekustamā īpašuma pārvalde, also participates in the international project "STEP", in the framework of which energy poverty criteria will be defined based on

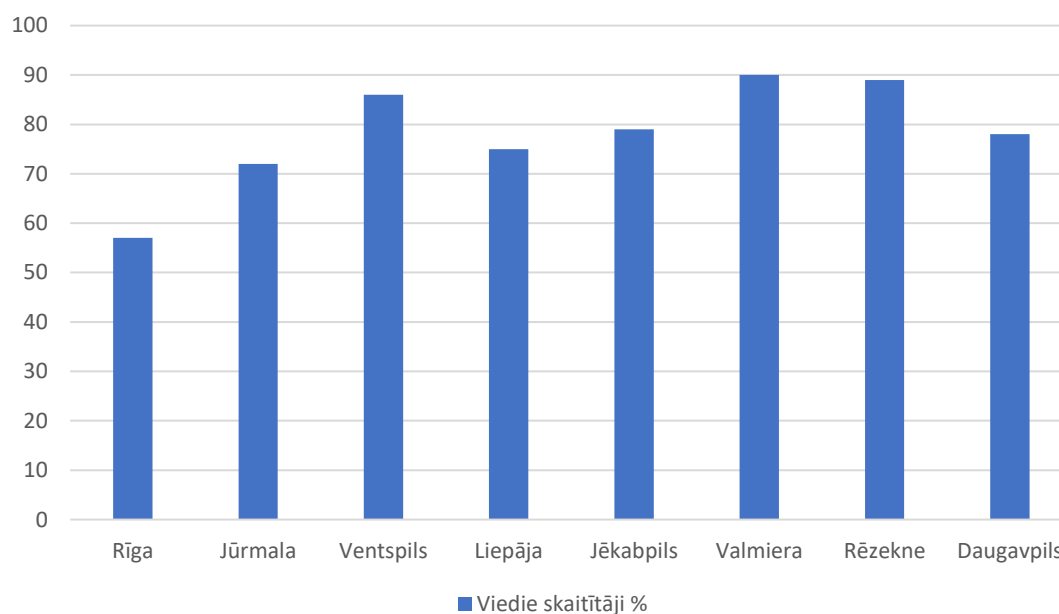
the experience of other countries, and solutions will be sought to prevent energy poverty.⁴⁹

2.4 National initiatives promoting smart technologies and well-connected buildings and communities, as well as skills and education in the construction and energy efficiency sectors

Efficient energy consumption is an opportunity for end-users to change their daily habits by thinking more about opportunities for not wasting energy (for example, by choosing more energy-efficient electrical equipment), and to control where energy is consumed unnecessarily. As it develops a smart grid based on digital technologies, AS Sadales tīkls is continuing to install smart electricity meters for consumers. The installation of smart meters, which was started in 2014, envisages that in the period up until 2022, all electricity meters will be replaced by smart electricity meters. Gradually increasing the share represented by smart grids will reduce the cost of servicing and maintaining meters by providing fast, transparent, accessible information on consumption, load and disruptions in the electrical grid at any time and at any location.

Figure 5 shows the percentage of smart meters already installed in each of Latvia's largest cities.⁵⁰

Figure 5.



KEY: smart meters (%)

Installed smart electricity meters as at 01.01.2020.

Emission Allowances Auction Instrument (EAAI)

EAAI is a state budget programme of the Republic of Latvia. The aim of the EAAI is to reduce climate change and to enable people to adapt to it. On 17 July 2019 the Cabinet of Ministers Decree No 380 approved "Plan for Latvia's adaptation to

⁴⁹ Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-2021-2030-gadam>.

⁵⁰ Available at: <https://www.sadalestikls.lv/klientiem/skaititaji/elektribas-skaititaji/>

climate change by 2030", which describes the risks posed by climate change to construction, as well as measures for adaptation to climate change in the field of construction and infrastructure.⁵¹

The EAAI finances those measures which are aimed at:

- increasing the energy efficiency of buildings or technological equipment and vehicles;
- broadening the use of renewable energy resources;
- promoting adaptation to climate change at national and regional level;
- developing environmental technology that ensures increased energy efficiency, the use of renewable energy resources, reductions in greenhouse gas emissions from technological processes or adaptation to climate change;
- implementing climate policy measures aimed at reducing greenhouse gas emissions and adaptation to climate change, as well as preparing research, planning and technical documents necessary for integration between various sectors,
- implementing awareness-raising measures which result in increased public awareness and knowledge of climate change and the measures needed to mitigate and ensure adaptation to climate change, facilitate a change in consumer behaviour and promote the development of a low-carbon economy in Latvia;

Cabinet Regulation No 333 of 12 June 2018 "By-laws of the public tender "Reduction of greenhouse gas emissions by smart urban technologies" for projects financed by the Instrument for the auctioning of emission allowances provides available funding of EUR 8 Million. The aim of the competition is to introduce and demonstrate smart urban technologies that reduce GHG emissions.

In order to promote the demonstration of the use of renewable energy resources and energy efficiency in an unconventional manner, raise public awareness and promote technology deployment, by the end of 2018 the EAAI will provide support for projects with a total available funding of EUR 50 000 000 000 in four open project tenders:

- Reduction of greenhouse gas emissions in protected architectural monuments of national importance;
- Reduction of greenhouse gas emissions in low-energy buildings;
- Reduction of greenhouse gas emissions by smart urban technologies;
- Reduction of greenhouse gas emissions by developing the construction of energy self-sufficient buildings.

In the tenders, funding was provided for the implementation of energy efficiency measures in buildings, which provide both direct GHG emissions reductions and indirect GHG emissions reductions resulting from project demonstration and multiplier effects."⁵²

Promoting skills and education in the construction and energy efficiency sectors

Cabinet Regulation No 531 of 21 August 2018 "On the assessment of the competence of independent experts and the monitoring of professional activities in the field of energy performance of buildings" lays down:

⁵¹ Available at: <http://tap.mk.gov.lv/mk/tap/?pid=40467308>

⁵² Available at: <http://ekii.lv/index.php?page=vides-uzlabojums>.

- requirements for the competence of an independent expert;
- procedures for attesting the competence of an independent expert;
- procedures for the supervision of the professional activities of an independent expert;
- procedures for the registration of independent experts, the content of the data of the register and the procedures for their use;
- the procedure for the payment of fees for assessing the competence of an independent expert and the supervision of professional activities, as well as the procedures regarding use of the funds received.⁵³

Thus, regarding the assessment of the competence of independent experts and the monitoring of professional performance in the field of energy performance of buildings, the following has been done so far:

- procedures for certification and supervision of independent experts have been significantly improved;
- price lists for chargeable services have been drawn up with the aim of providing the necessary funding for the supervision of independent experts;
- improved supervision of bodies conducting competence inspection by concluding delegation agreements;
- Planned activities include:
- ensure subscription to European Union standards (Eurocode) in the field of construction and energy efficiency, in order to increase the quality of the work of an independent expert;
- improving the construction information system - creating well-connected communities - by digitising the construction sector.
- "Improvement of existing secondary vocational education programmes in the construction sector in line with global energy efficiency trends in the field of resource audit, resource saving and sustainable production, etc.;
- Raising awareness among end-users of a building of the conditions of use of the building in order to achieve the greatest possible savings, education of managers and users, and high-quality cooperation."

Budget of national research programmes in the field of energy efficiency of buildings

As recommended by the European Commission, one of the indicators contributing to the implementation of Article 2a(1)(f) of the Directive is the budget of national research programmes for research in the field of energy efficiency of buildings. On 11 October 2018, the Scientific Council of Latvia announced an open tender for proposals "Energy efficiency" of the National research programme "Energy".

Table 11 shows the projects financed by the Ministry of the Economy in the open tender for proposals "Energy efficiency" of the National research programme "Energy" launched in 2018.

Table 11.

No.	Project name	Scientific institution implementing the project	Allocated funding, EUR

⁵³Available at: <https://likumi.lv/ta/id/301192-noteikumi-par-neatkarigu-ekspertu-kompetences-novertesanu-un-profesionalas-darbibas-uzraudzibu-eku-energoefektivitates-joma>.

1.	Development of Latvian heating and cooling systems	Riga Technical University	354 000.00
2.	Roadmap to energy efficient future of Latvia (<i>EnergyPath</i>)	Riga Technical University	354 000.00
3.	Improving technological solutions for the energy efficiency of buildings	Riga Technical University	354 000.00
4.	Assessment and analysis of energy efficiency policies	Riga Technical University	354 000.00

Electromobility

Amendments to the Law on residential properties were submitted to and examined by the Cabinet of Ministers in order to facilitate decision-making regarding electro-mobility. ⁵⁴The amendments provided that "a decision on the creation of a car park for persons with disabilities or the creation of a car park for electric cars, if a recharging point for electric vehicles is set up at the same time, will henceforth require that apartment owners representing more than half of all apartments, rather than two-thirds as before, vote in favour. As a result, a Community of residential owners would have the opportunity to better agree on electro-mobility issues by promoting smart technologies and well-connected buildings."

In the context of electro-mobility, note should also be taken of Cabinet Regulation No 418 of 17 July 2018 "By-law of open tender "Reduction of greenhouse gas emissions by developing energy-self-sustaining buildings" for projects financed by the Emission allowances auction instrument. This Regulation lays down the by-laws for the open tender for projects financed by the Emission allowances auction instrument. The aim of the tender is to limit potential greenhouse gas emissions by supporting the construction of new and sustainable low-energy self-sufficient buildings and ensuring demonstration and promotion of technologies necessary for low carbon development in Latvia.

The eligible costs for the tender include the costs of purchasing, supplying, installing and connecting electric vehicle charging stations and recharging points to the electricity grid.⁵⁵

Requirements regarding the establishment of electric vehicle points are also included in the Cabinet Regulation No 331 of 30 June 2015 "On the Latvian construction standard LBN 208-15 "Public buildings" and Cabinet Regulation No 340 of 30 June 2015 "On the Latvian construction standard LBN 211-15 "Residential buildings" laying down that at least one charging point for electric vehicles is provided in public buildings with more than 10 parking spaces, as well as channels for electric cables are provided for every fifth parking space in order that electric vehicle recharging points can be installed if necessary, whereas in residential buildings with more than 10 parking spaces, channels for electric cables are provided for each parking space, so that recharging points for electric vehicles can be installed if necessary.

⁵⁴Available at: <http://tap.mk.gov.lv/lv/mk/tap/?pid=40482068&mode=mk&date=2020-05-05>

⁵⁵Available at: <https://likumi.lv/ta/id/300500-emisijas-kvotu-izsolisanas-instrumenta-finanseto-projektu-atklata-konkursa-siltumnicefekta-gazu-emisiju-samazinasana-attistot>.

In order to be able to continue supporting sustainable infrastructure development, it is necessary to develop relevant Cabinet Regulations in order to ensure the development of electric vehicle charging infrastructure after 2021 within the framework of the EU Structural Funds and other sources of funding. In this case, the performance indicators for the promotion of electromobility in the context of the Strategy by 2030 would be:

- a solution to be developed to promote the construction of electric recharging points in newly constructed apartment buildings and public buildings, in renovated apartment buildings and public buildings and in fuel stations;
- it is ensured that up to 50% of specific parking spaces are equipped with recharging possibilities;
- criteria have been defined specifying the procedures for the installation of recharging facilities for electric vehicles at service stations.⁵⁶

⁵⁶Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-20212030-gadam>.

3. Roadmap

The targets to be achieved by Latvia by 2050 are:

- In Latvia, all households have access to housing;
- the existing housing stock meets high standards of energy efficiency, construction, security and refurbishment: the construction of all new buildings meets the requirements of zero-energy buildings, and the renovation and conversion of all buildings meets the requirements of zero or near zero-energy buildings;
- the legal framework encourages private and public investment in developing the housing stock;
- an energy-efficient and sustainable network of State and local authority educational institutions, demonstrating the promotion of rational consumption of energy and other environmental resources and a neutral impact on the environment;
- climate neutrality⁵⁷ is achieved, that is, a situation where human activity has a 'zero' net impact on the climate system, balancing greenhouse gas emissions and their removal."

The long-term strategy for building renovation is part⁵⁸ of the National energy and climate plan of Latvia⁵⁹. It is therefore necessary to link these documents and to pursue coherent objectives in the respective directions.

The objectives and measures included in the strategy for the renovation of the building stock, as well as the improvement of energy efficiency have been laid down, amongst others, in the National development plan 2021-2027 (NAP2027)⁶⁰, which is the main medium-term development planning document for Latvia. According to the objective of the NAP2027 activity direction "Housing" [338], housing is available to all households in Latvia and the existing housing stock will comply with high standards of energy efficiency, construction, safety and amenities by 2050.

The following outlines the planned activities in the entire building segment in terms of action directions and tasks, which are largely derived from these long-term planning documents.

Residential apartment buildings

From the perspective of energy efficiency, it can be seen that, in line with the regulatory framework, minimum levels of energy efficiency have been set for all new dwellings. ~10% of all residential buildings were built after 2003, while only 3% of the total share of apartment buildings were built after 2003 (4% since 1993), when the new

⁵⁷On 12 December 2019, Heads of State and Government of the EU agreed at the European Council on a new goal of achieving a climate-neutral EU by 2050. European Council conclusions are available online: <https://data.consilium.europa.eu/doc/document/ST-29-2019-INIT/en/pdf>.

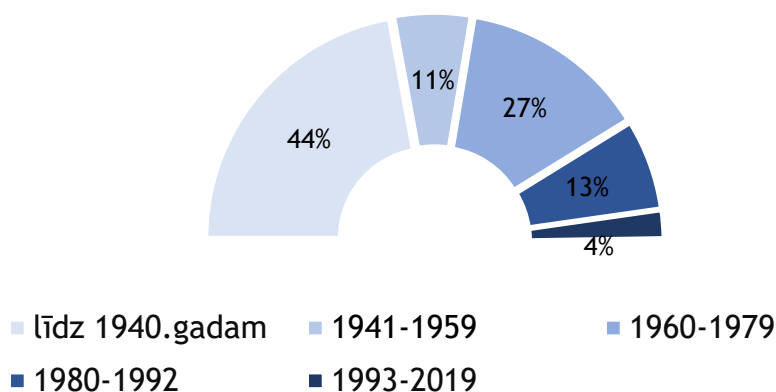
⁵⁸ Each Member State shall submit its long-term renovation strategy to the Commission as part of its final integrated national energy and climate plan. Available at: <https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=CELEX:02010L0031-20181224>

⁵⁹Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-2021-2030-gadam>

⁶⁰Available at: <https://likumi.lv/ta/id/315879-par-latvijas-nacionalo-attistibas-planu-20212027-gadam-nap2027>.

requirements of the building standards for building envelopes came into force – Construction standard 002-001 "Thermal engineering for building envelopes", which set significantly higher thermal requirements for building envelopes, therefore all buildings designed and built after 2003 must comply with high thermal engineering requirements.⁶¹

Figure 6. Breakdown of apartment buildings by year of construction (percentage).



KEY: līdz 1940. gadam = up until 1940

It should be emphasized that no data is provided here and such statistics on possible CO₂ reductions from energy efficiency improvement works in residential apartment buildings are not available, although there are expected and existing energy savings. Within the framework of activity 3.4.4.1 "Measures to improve the heat insulation of residential buildings", which was launched in 2009, implementation of 741 energy efficiency improvement projects has been completed. Thermal energy savings achieved within the framework of completed projects comprise between 30% and 60% of the previously consumed amount of thermal energy (43% on average). On the other hand, under Measure 4.2.1.1, when considering the thermal energy consumption of the projects already completed, they show a significant reduction in energy consumption, where the average energy consumption was 165 kWh per annum before the house was restored, whereas, after the renovation work it was on average 67% lower, or 54 kWh per annum. Therefore, if it is assumed that all submitted projects are implemented within the framework of Measure 4.2.1.1, the average energy consumption savings for 1 600 residential apartment buildings in total could be approximately 60% or even higher in the context of both activities, taking into account that the number of projects submitted under Measure 4.2.1.1 is higher than the number of renovated residential buildings under activity 3.4.4.1. In addition, the renovated houses within the current measure 4.2.1.1 show very high energy efficiency indicators.

According to the Concept approved by the MoE on 2 December 2013 for the transposition of the requirements of EU Directive 2012/27/EU on energy efficiency into the regulatory enactments, the total objective of Latvian energy efficiency (primary energy consumption savings) is 0.670 Mtoe (28 PJ). The share of energy efficiency improvement in apartment buildings for this purpose is 0.023 Mtoe (0.945 PJ, 263

⁶¹ Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-2021-2030-gadam>

GWh). According to the analysis of a sample set of energy efficiency improvement projects for apartment buildings described in Chapter 4.2.2, the average annual thermal energy saving resulting from the renovation of one building is 156 MWh.⁶² Within the framework of the programme to improve the energy efficiency of apartment buildings in the 2014-2020 programming period, the maximum number of renovated apartment buildings is approximately 1 600, as a result of improving the energy efficiency of buildings, the approximate achieved thermal energy savings amount to 249.6 GWh (156 MWh * 1 600).

Increasing energy efficiency in residential apartment buildings

Actions to be taken under NAP2027:

1) energy efficiency improvement measures in apartment buildings; promotion of the efficient use of resources in order to reduce the amount of thermal energy consumption;

2) Housing and urban development programme "Colouring Latvia".

The indicative funding available (ERDF) is estimated at EUR 163 125 000.

It should also be noted that, according to the Information report "On measures to overcome the COVID-19 crisis and promote economic recovery",⁶³ additional funding of EUR 35 000 000 as overcommitment of EU funds is foreseen for the implementation of Measure 4.2.1.1 "Promotion of energy efficiency in residential buildings".

The draft regulation promoted by the Ministry of the Economy to mobilise the relevant funds for all projects for which applications were submitted to ALTUM by 11 January 2020 was approved by the Government on 30 June 2020.⁶⁴ As a result, approximately 138 more apartment houses will receive support.

In order to further promote energy efficiency improvements in residential apartment buildings, it is necessary to:

To draw up Cabinet Regulations so that, even after 2021, within the framework of the EU Structural Funds and other sources of financing, energy efficiency improvement measures in residential buildings (apartment buildings) could be implemented by setting conditions for reducing energy poverty and taking into account the need to comply with legislation and conditions regulating air quality, including:

- the conversion or renovation of existing buildings;
- rebuilding or refurbishing of local or autonomous heat supply infrastructure;
- purchase and installation of equipment for the production of thermal energy from renewable sources;
- purchase and installation of equipment for the production of electricity using renewable energy resources;
- introduction of energy-efficient cold supply (ground source cooling pumps, use of water in large water bodies, etc.)

Also, conditions for diversification of co-payment have been developed, taking into account as far as possible:

⁶² Available at: <https://www.fi-compass.eu/sites/default/files/publications/Ex%20ante%20izvertejums.pdf>

⁶³ Available at: <http://tap.mk.gov.lv/mk/tap/?pid=40488130>

⁶⁴ Available at: <http://tap.mk.gov.lv/lv/mk/tap/?pid=40489006>

- the value of the property in which the measures are taken;
- solvency of the population;
- with regard to the replacement of heating equipment - the existing air quality in the area;
- energy efficiency savings and the percentage reduction in emissions achieved.⁶⁵

Support for the construction of sustainable, low-cost housing mainly in areas with new employment potential:

Activities to be carried out under NAP2027:

- creation of long-term loans with low interest rate for the construction of low-cost housing. The funds are intended as a necessary amount for loans, without a direct impact on the budget;
- establishment of a transformation fund for dangerous and structurally distressed apartment houses.

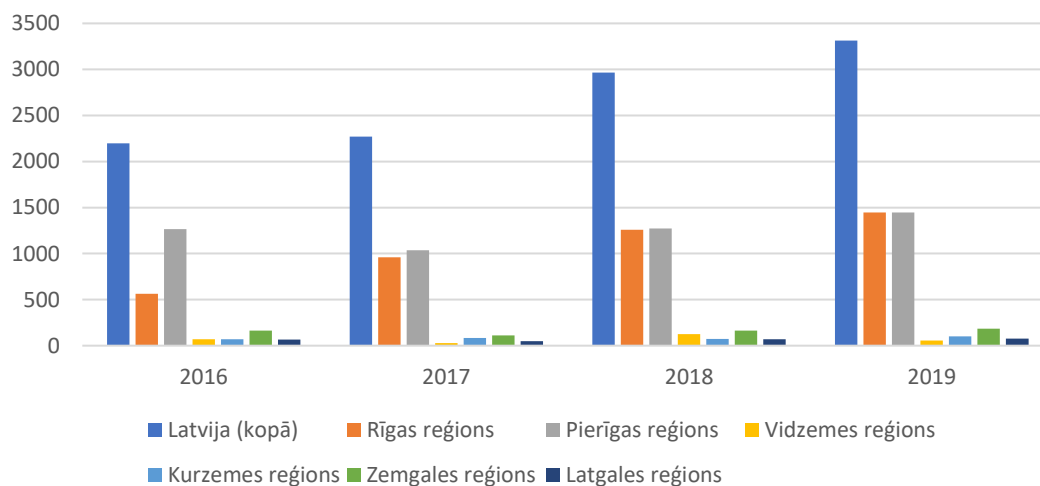
Indicative financing of EUR 50 000 000 from the development part of the State budget is foreseen for these activities.

In line with the NAP2027, target indicators for the lines of activity have been prepared to show that the number of new apartments commissioned (control value 2024) is 7 000 per annum and 10 000 in 2027.⁶⁶

Figure

7

Number of new apartments put into service



KEY: Latvia (total) – Riga region – Pierīga region – Vidzeme region – Kurzeme region – Zemgale region – Latgale region

The amounts shown in Figure 7 are the total number of single dwelling houses (excluding garden houses and summer houses) and two or more dwelling houses.⁶⁷

⁶⁵Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-20212030-gadam>.

⁶⁶Available at: <https://likumi.lv/ta/id/315879-par-latvijas-nacionalo-attistibas-planu-20212027-gadam-nap2027>

⁶⁷Available at: https://data.csb.gov.lv/pxweb/lv/rupnbuvn/rupnbuvn__buvn__istern/BU060c.px/table/tableViewLayout1/

Figure 7 shows positive trends and a gradual increase in the number of new apartments commissioned over the last four years. Data for 2019 also indicate positive future trends. At the same time, it should be noted that there is a lack of investment outside Riga and its regions.

Private houses or complexes consisting of a small number of buildings

Support to individuals for the purchase or construction of housing within the framework of NAP 2027 is one of the measures envisaged to improve energy efficiency for private housing. Target audience: families with children. Actions required: awarding grants, amounts being dependent on the number of children in the family. Indicative financing of EUR 27 500 000 from the development arm of the State budget is foreseen for this action.

According to the data, there are 309 thousand single dwelling houses in Latvia, or private houses, representing a significant majority of the total state building stock (see Table 2).

Until now, private houses and individual complexes have received minimal support from the State. As these activities are undertaken by private persons, it is necessary to provide for the simplest possible application procedure for support, with the possibility to apply online on a first-come, first-served basis, supported by documents evidencing expenditure, unless otherwise specified by Latvian legislation. It is also possible for potential beneficiaries to make use of municipal energy advisers or the renewable energy sources agency's one-stop-shop for administrative assistance. So far as possible, criteria for the diversification of co-financing payments should be developed, taking into account the value of the property in which the measures are to be taken and solvency of the residents, as well as the existing air quality in the area as regards replacement of heating equipment.⁶⁸

In order to further promote the renovation of private houses and complexes consisting of a small number of buildings, it is necessary to draw up relevant Cabinet Regulations, taking into account the requirements of legislation and conditions regulating air quality, so that in the period after 2021, within the framework of other sources of funding, by including criteria requiring the reduction of energy poverty within the conditions of financial support in order to ensure energy efficiency improvement measures in private houses and in complexes consisting of a small number of buildings,.

It is also necessary to establish conditions for the diversification of the co-financing payments, taking into account, where possible:

- the value of the property in which the measures are taken;
- solvency of the population;
- with regard to the replacement of heating equipment - the existing air quality in the area;
- energy efficiency savings and percentage reduction of emissions achieved.

⁶⁸Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-2021-2030-gadam>

It should also be possible to apply for online financial support, subject to certain criteria and on the basis of supporting documents showing expenditure, if Latvian legislation does not specify otherwise.⁶⁹

⁶⁹Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-20212030-gadam>.

Public buildings

In accordance with Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, Latvia's 2020 target is an annual target of 3% for the renovation of central government buildings, and Latvia proposes to continue this target until 2030. With respect to public buildings⁷⁰ (according to the definition of central government buildings⁷¹), there are 1 245 buildings with an average thermal energy consumption of 126 kWh/m² per annum for heating. The list set out in Article 5(5) of Directive 2012/27/EU, from which the annual renovation rate of 3% is to be calculated, includes 838 central government buildings (2019) with a total area of 1 862 320 m². For 2021, the 3% renovation target was calculated at 55 870 m². In 2019, the renovated area of central government buildings amounted to 50 475 m².⁷²

Planned indicative financing for increasing energy efficiency in public buildings under NAP 2027: EUR 104 400 000 (ERDF). Actions required: measures to improve energy efficiency, smart energy management and use of renewable energy resources in state-owned buildings.

As already indicated in the strategy chapter - Policies and activities targeting public buildings, taking into account the current slow pace of public building renovation, in the 3rd quarter of 2019 the Ministry of Economics prepared an information report on the situation under Measure 4.2.1.2 and encouraged the government to decide on further action to ensure more targeted and effective investment of EU funds in the renovation of public buildings.

According to the information report, the Ministry of the Economy must:

- 1) amend Cabinet Regulation No 534 of 9 August 2016 "Implementing provisions for the first selection round of project applications under the Operational programme's "Growth and Employment" specific support objective's 4.2.1 "Promotion of energy efficiency in public and residential buildings" specific support objective measure 4.2.1.1 "Promotion of energy efficiency in residential buildings":
 - The MoE provides all project applicants with a consent regarding the amount of the funding requested (with respect to buildings included in the priority list of State buildings);
 - for buildings in respect of which contracts/agreements with CFCA have been concluded but that have insufficient funding, a request supported by reasoned arguments is submitted to the Ministry of the Economy for an increase in funding.
- 2) supplement the methodology for completing the project application form under the Chapter "Financial capacity" on the source of covering ineligible expenses.

The upsides of the changes made:

⁷⁰The list of state buildings contains data on buildings owned, possessed and used by state institutions with a total area of over 250 m², data on energy consumption in 2017:

https://www.em.gov.lv/lv/nozares_politika/majokli/eku_energoefektivitate/no_direktivas_2012_27_es_par_energoefektivitati_izrietosas_prasibas/

⁷¹The definition of central government buildings is laid down in Cabinet Order No 587 of 2 December 2013 on the concept of transposition into legislation of the requirements of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC

⁷² Available at: <https://bvkb.gov.lv/lv/content/valsts-eku-saraksts>

- 1) use of public funding;
- 2) all projects lacking funding under the first round of selection have been implemented;
- 3) the ability of the Ministry and the SJSC "Valsts nekustamie īpašumi", which have submitted all planned project applications to the CFCA, to renovate other buildings (by including them in the priority list of State buildings);
- 4) compliance with the requirements of Article 3 and Article 5(1) of Directive 2012/27/EU has been ensured (3% of State-owned and used buildings should be subject to energy efficiency improvement measures each year).⁷³

Amendments to the above-mentioned Cabinet Regulation were announced at the meeting of State Secretaries on 26 September 2019⁷⁴, but currently no further progress has been made and changes in the implementation mechanism have not been implemented.

At the same time, it should be noted that it is planned to supplement the existing conditions of Measure 4.2.1.2 in order to identify problems that have arisen in a timely manner and to facilitate their solution⁷⁵. Consequently, the proposed conditions are:

- to define readiness criteria;
- to require the relevant sectoral ministries to ensure supervision over the implementation of projects with the aim of identifying in good time situations in which a recipient of financing has encountered problems;
- to create a communication plan with a clear operational strategy for the identification and timely solution of current project implementation problems;
- to amend Cabinet Regulation No 13 of 4 January 2018 "Implementing provisions for the first selection round of project applications under the Operational programme's "Growth and Employment" specific support objective's 4.2.1 "Promotion of energy efficiency in public and residential buildings" specific support objective measure 4.2.1.1 "Promotion of energy efficiency in residential buildings"", by implementing planned financial allocations to respective project applicants;
- to amend Cabinet Regulation No 534 of 9 August 2016 "Implementing provisions for the first selection round of project applications under the Operational programme's "Growth and Employment" specific support objective's 4.2.1 "Promotion of energy efficiency in public and residential buildings" specific support objective measure 4.2.1.1 "Promotion of energy efficiency in residential buildings"", by implementing allocations. Under Measure 4.2.1.2 (allocations of funding to mitigate the effects of COVID-19), reducing funding by EUR 5 300 000 (of which EUR 4 500 000 are from ERDF). This funding is redistributed to SSO 4.2.2 "Promotion of energy efficiency and renewable energy use in local government buildings under local government integrated development programmes" under the responsibility of the Ministry of Environmental Protection and Regional Development. Funding for submitted projects will not be reduced. In order to ensure the full use of the remaining

⁷³ Available at: <http://tap.mk.gov.lv/lv/mk/tap/?pid=40477072>

⁷⁴ Available at: <http://tap.mk.gov.lv/lv/mk/tap/?pid=40478044>

⁷⁵ Available at: <https://www.slideshare.net/siltinam/aktulie-nosacjumi-valsts-ku-programmas-stenoanai/siltinam/aktulie-nosacjumi-valsts-ku-programmas-stenoanai>.

amount of financing, it is planned to reallocate the amount of financing not yet earmarked under the first selection round of Measure 4.2.1.2, to the most ready and efficient projects of the second application selection round of Measure 4.2.1.2, including high priority cultural and educational building projects.

Readiness criteria are specific criteria, which, if not achieved, result in the diversion of funding to the most ready and efficient projects, including high-priority cultural and educational building projects under the second application selection round of Measure 4.2.1.2.

Readiness criteria are:

- for projects in the second application selection round of the Measure 4.2.1.2, to determine the deadline when all project applications must be submitted to the CFCA;
- set a deadline for all project applications of Measure 4.2.1.2 by which an agreement must be concluded with the CFLA on implementation of the project. After this deadline it is envisaged that the funding will be lost and the remaining funding will be pooled and channelled to the most ready and efficient projects;
- Set a deadline for all project applications of Measure 4.2.1.2 by which a procurement agreement for construction must be concluded.

It should be noted that if, by 31 July 2021, a project applicant has not concluded a construction agreement within the framework of Measure 4.2.1.2, the eligibility for funding will be lost and that amount of the funding will be redistributed to the most ready and efficient projects of Measure 4.2.1.2. In case no additional funding is provided for projects under Measure 4.2.1.2, the remaining funding will be allocated for implementation of Operational programme's "Growth and Employment" specific support objective's 4.2.1 "Promotion of energy efficiency in public and residential buildings" specific support objective measure 4.2.1.1 "Promotion of energy efficiency in residential buildings".

Table 12. Energy efficiency policy objectives and performance indicators for public buildings⁷⁶

Policy outcome on the energy efficiency dimension in the sub-dimension of energy efficiency of buildings	Actual value	Target value ⁷⁷	
	2017	2020	2030
3% of the area of direct administration buildings renovated each year (renovated in total, m ²)	398 707	678 460 ⁷⁸	500 000⁷⁹
specific thermal energy consumption in buildings for heating (kWh/m ² /year)	-	150	<i>120</i>

In order to also further promote the improvement of energy efficiency in public buildings up to 2030, it is necessary to:

⁷⁶Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-20212030-gadam>.

⁷⁷Text in standard font includes already valid goals, which are set in binding EU legal acts, other Latvian policy planning documents or legal acts, whereas indicative goals are marked in italics, and binding goals - in bold.

⁷⁸Maximum forecast because the target changes annually. Total target by the end of 2017 is 392 010 m²

⁷⁹ Maximum forecast

1. To develop Cabinet Regulations so that, even after 2021, measures to improve energy efficiency in public buildings can be implemented within the framework of EU structural funds and other sources of financing;

2. to define the conditions for the diversification of co-financing, taking into account, where possible:

- the value of the property in which the measures are to be taken;
- with regard to replacement of heating equipment - the existing air quality in the area;
- energy efficiency savings achieved and percentage reduction in emissions.⁸⁰

One of the relatively effective, possible solutions in the public building sector could be the mobilization or co-location of public institutions. In 2018, the SJSC "Valsts nekustamie īpašumi" conducted a survey of the offices used by public authorities in Riga. According to the survey, the institutions in Riga distributed over 482 695 m², on average 20.5 m² per employee. The institutions are dispersed in several buildings, for example, the Ministry of Finance's departments are in 11 buildings, the Ministry of the Interior's departments in 31 building, and the Ministry of Economics' departments in 6 buildings. By placing institutions together in activity-based offices and reducing the area per employee to 12-16 m², the area used by institutions can be reduced by 30% or 144 thousand m². In addition, given that in most cases the payback period for energy efficiency solutions in public buildings is longer than 20 years, it may be difficult to attract ESCO companies to such projects.

In view of the problems identified, it can be concluded that it is necessary to find funding for a total inventory of public buildings in order to identify buildings whose further use, including renovation, would not be efficient and cost-effective.

Municipal buildings

Output indicators of the SSO measure 4.2.2 "Reduction of annual primary energy consumption in public buildings" (hereinafter - kWh indicator) (at least 13 718 237 kilowatt-hours per annum) and "calculated greenhouse gas reduction per annum" (at least 3 460 equivalent tonnes of carbon dioxide) specified in the operational programme "Growth and Employment" of the European Union Funds were met respectively by 139% and 151% of the planned primary energy savings of 19 129 954 kWh/year, and reductions in greenhouse gas emissions of 5 214 tonnes of CO₂ equivalent.

The SSO measure 4.2.2 has already been described in detail in the chapter on Policy and activities focusing on public buildings and in the chapter Policy and activities for the cost-effective and gradual complete renovation of buildings. The demand for support measures under SSO 4.2.2 is greater than the funding available under SSO 4.2.2. Therefore, it is expected that the 3rd round output indicators under the measure SSO 4.2.2 will be similar to those in the first and second rounds.

A large part of municipal buildings have been built before the thermal requirements for building envelopes were increased and therefore have low energy performance levels. Given the low energy efficiency performance indicators, it is necessary, as a matter of priority, to reduce energy consumption while ensuring a level of indoor air exchange and ventilation that do not harm health. Local governments can

⁸⁰Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-20212030-gadam>

also make a significant contribution to the wider use of renewable energy by promoting their use in municipal buildings, which also contributes to a reduction in the cost of maintaining local government buildings (and the services provided therein).

In accordance with Cabinet Order No 587 of 26 November 2019 "On Regional policy guidelines 2021-2027", it is planned to grant funding to local governments within the framework of the MEPRD support measures for the improvement of energy efficiency of their buildings, including construction works, the purchase and installation of thermal energy production plant using renewable energy resources, continuing the support provided within the framework of the specific support objective 4.2.2 "Promotion of energy efficiency and the use of RES in municipal buildings in line with the local government's integrated development programmes" under the EU funds 2014-2020 programming period.

Follow-up to the task involves mobilising EU funds as well as developing conditions for providing support.

As a result of the support it is planned:

1. to reduce primary energy consumption (67 991 529 kWh/year);
2. to reduce greenhouse gases (17 200 tonnes of CO₂ per annum).⁸¹

According to a survey conducted by the MEPRD in July 2018 - January 2019 on the investment needs of local governments for increasing the energy efficiency of municipal service buildings, financing of EUR 326 312 950 would be necessary (with a limit of three projects per municipality), amounting to 10% of all aggregated local government investment needs.

In order to address the negative impact of the COVID-19 crisis on the economy and to contribute to the post-crisis recovery in employment and business sectors, and given that local governments can make a significant contribution to the economy by boosting economic activity in the regions, MEPRD has assessed the implementation of projects that would stimulate the market demand for labour and materials. It is estimated that in 2020 EUR 4.82 million from internal resources, as well as in addition approximately EUR 4.5 million⁸² will be allocated to municipal energy efficiency projects.⁸³ For the purpose of allocating the above-mentioned EUR 7.5 million and the release of funding, MoE should carry out a reassessment of all projects under SSO Measure 4.2.1.2 to ensure that the remaining funding under the measure is directed to the most ready and efficient projects, including project evaluation without significant additional ineligible costs from the state budget. Investments will stimulate economic activity in the regions in the construction sector and at the same time reduce the primary energy consumption of local government buildings thereby releasing resources for other essential functions.⁸⁴

Further promoting the improvement of energy efficiency in municipal public buildings, requires:

Drawing up of Cabinet Regulations so that, even after 2021, within the framework of EU Structural Funds and other sources of financing (within the framework of public

⁸¹ Available at: <https://likumi.lv/ta/id/310954>

⁸² Using Measure 4.2.1.2 "Promotion of energy efficiency in public buildings" under the responsibility of the Ministry of the Economy.

⁸³ SSO 4.2.2 "Promotion of energy efficiency and the use of renewable energy resources in local government buildings in line with the local government's integrated development programmes".

⁸⁴ Available at: <http://tap.mk.gov.lv/lv/mk/tap/?pid=40487446&mode=mk&date=2020-05-19>

funding), the following activities may be implemented (taking into account feasibility studies and possibilities to connect to the central heating supply), taking into account the need to comply with legislation and conditions governing air quality:

- the conversion or renovation of existing buildings;
- the conversion or renewal of local or autonomous heat supply infrastructure;
- the purchase and installation of equipment for the production of thermal energy from renewable sources;
- the purchase and installation of electricity-generating equipment using renewable energy sources;
- the introduction of energy-efficient cooling (ground source cooling pumps, making use of water in large water bodies, etc.)
- To develop conditions for the diversification of the co-financing, taking into account, where possible:
 - the value of the properties in which the measures are to be taken;
 - solvency of the residents;
 - with regard to the replacement of heating equipment - the existing air quality in the area;
- energy efficiency savings achieved and the percentage reduction in emissions.

Non-residential buildings

Until now, with respect to non-residential buildings, most support among for businesses has been provided under the specific support objective 4.4.1 "Promotion of efficient use of energy resources, reduction of energy consumption and transition to RES in the manufacturing sector" of the Cohesion Fund.

In the next programming period, it should also be necessary to provide support to businesses, given that it is the enterprises that occupy a large part of the non-residential segment. Consequently, when developing financial instruments with the possibility for enterprises to continue to receive support for promoting energy efficiency, it should be possible for a wider range of businesses to apply for such support, regardless of the area of business, as is currently practiced by ALTUM, by granting loans for buildings such as warehouses, office buildings, retail centres, etc.⁸⁵

Pursuant to NAP2027, the task "Use of renewable energy resources and increase of energy efficiency in industry and businesses" has been set.

Target audience: enterprises

Actions required: construction of new energy efficient plants; upgrading existing industrial production capacity by installing energy efficient production and production generating ancillary equipment; organisation of production buildings and sites, including the replacement of internal and external engineering networks and engineering systems in the production area with more energy efficient ones. (Indicative funding of EUR 43 500 000, including ERDF).

Emissions and energy used

Undeniably, buildings are crucial to reaching the EU's overarching objective of achieving climate neutrality by 2050 by creating a decarbonised building stock as well as promoting the renovation of existing buildings. On 17 July 2019, the Cabinet of

⁸⁵Available at: <https://www.altum.lv/lv/pakalpojumi/uznemumiem/aizdevumi-uznemumu-energoefektivitatei/aizdevumi-uznemumu-energoefektivitate/>.

Ministers approved Order No 380, "Plan for Latvia's adaptation to climate change by 2030", which is aimed at reducing the vulnerability of Latvia's people, economy, infrastructure, constructions and nature to climate change impacts and promoting the use of opportunities created by climate change. The plan includes areas of action related to construction and infrastructure, such as:

- the use of green infrastructure to mitigate the impacts of climate risks;
- ensuring and adapting engineering and communications systems and infrastructure for extreme climate events;
- adapting constructions and buildings to the impacts and pressures of climate change.

The adaptation measures envisaged in the plan must be implemented by the responsible institutions in the period until 2030.

With regard to emissions, it should be noted that the largest amount of GHG emissions in Latvia is generated by the energy sector, which in 2017 emitted approximately 3 900 kilotonnes (kt) of CO₂ equivalent (34% of Latvia's total GHG emissions). Over the ten-year period 2008-2017, CO₂ emissions in the energy sector decreased by 17.2 %. When comparing these data with the reference point in 1990, one can see that the overall decrease is already 70% (see Table 18). About 15% of emissions in the energy sector come from households.⁸⁶

Energy sector emissions vary depending on economic changes in the country and significant differences in average winter temperatures. Energy efficiency, switching fuel from liquid and solid fuels to natural gas, and replacing fossil energy sources with biomass and other types of RES, are important factors in reducing energy GHG emissions in the overall assessment. The price and availability of energy resources, as well as national policies and measures, including support measures, are important factors in the replacement of energy resources.⁸⁷

Table 13.

Energy consumption in households, including consumption in agriculture and other economic activities (TJ)⁸⁸

	1996	2001	2006	2010	2015
Electric energy	3935	4460	6221	6977	6332
Natural gas	4180	3334	4807	5219	4116
Liquefied petroleum gas	1230	1139	1230	911	773
Petroleum products for heating and hot water	42	170	127	79	89
Coal	1964	1338	813	1049	501
Firewood	31349	23388	27986	23256	16355
Wood briquettes	...	69	187	340	375
Wood pellets	36	252	2052
Wood residues	...	7062	2956	1126	348
Charcoal	30	60	60
Other solid fuel	241	17	7	35	...
Petroleum products for other uses (excluding transport)	...	1087	2701	2825	1151
Thermal energy (for heating and hot water)	28310	19627	17816	17622	14101

⁸⁶GHG inventory for 1990-2017. Available at: <https://unfccc.int/documents/194813>

⁸⁷Latvia's strategy to achieve climate neutrality by 2050. Available at: https://ec.europa.eu/clima/sites/lts/lts_lv_lv.pdf

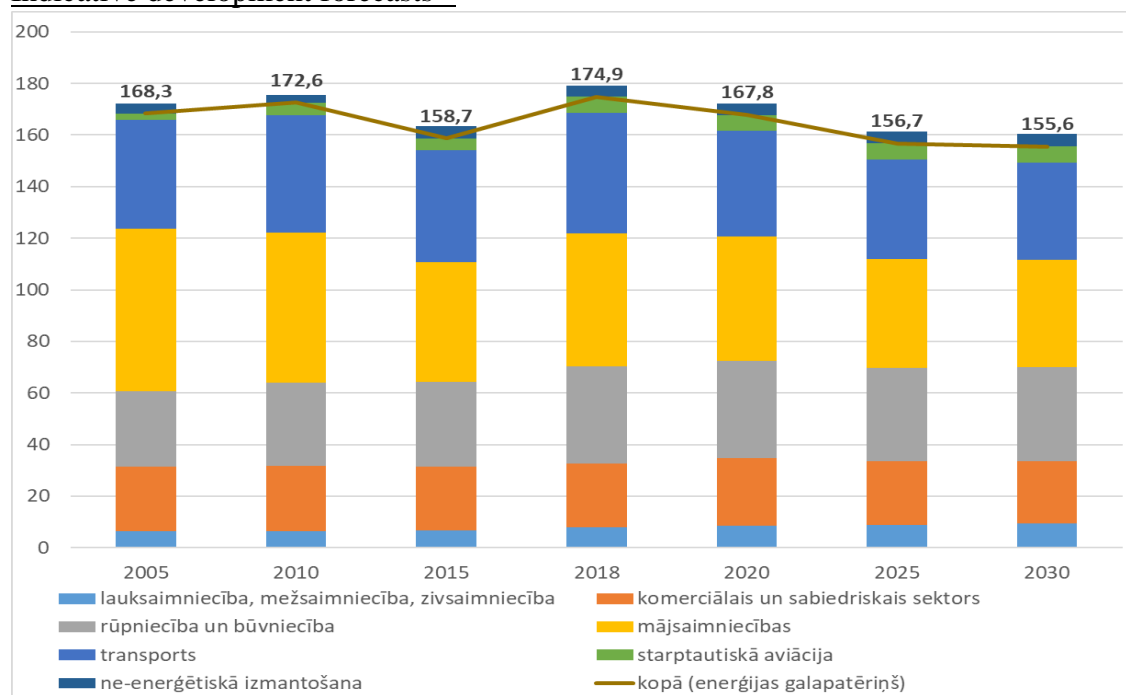
⁸⁸Data base of the Central Statistical Bureau, epm3.4 Energy consumption in households, including consumption in agriculture and other economic activities.

Total energy resources	71251	61691	64917	59751	46253
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* Data are collected and compiled for all types every 5 years. Data for 2020 will be published in 2021.

Energy consumption in households in 2018 was 51.5 PJ, which is 2.9% more than in 2017. The composition of energy consumption in households has not changed significantly in recent years – mainly fire wood is used. Given that natural gas produces relatively less GHG emissions than solid fuels, there is a positive trend in this area, as household consumption of natural gas has increased significantly compared to 2017 (+9.3%) and coal consumption has decreased (-32.7%).⁸⁹

Indicative development forecasts⁹⁰



Key:

<i>Agriculture, forestry, fisheries</i>	<i>Commercial and public sector</i>
<i>Industry and construction</i>	<i>Households</i>
<i>Transport</i>	<i>International aviation</i>
<i>Non-energy use</i>	<i>Total (final energy consumption)</i>

Figure 8. Forecasts of energy end-consumption by sector up to 2030 (PJ)

Figure 8 shows that energy end-consumption is projected to decrease in the household sector. Total energy end-consumption in 2030 is about 11% lower than in 2018.

Based on macroeconomic forecasts and modelling assumptions, the calculated energy end-consumption projections foresee that the main sectors of energy end-consumption will continue to be industry and construction, transport and household sectors, which will consume respectively 23.5%, 24.2% and 26.7% of the total energy

⁸⁹ Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-2021-2030-gadam>

⁹⁰ Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-2021-2030-gadam>.

end-consumption in 2030. The total GHG emission projections for the energy sector in the baseline scenario are determined by the continuation of the measures initiated by the existing policy (RES policy and energy efficiency policy) until 2030.

The reduction of GHG emissions in the sector is mainly affected by the replacement of fossil fuels with biomass in district heating, as well as the implementation of energy efficiency improvement measures (mainly the renovation of residential and public buildings) in households and services sector. These energy efficiency measures can reduce total GHG emissions in households, commercial and public sectors by 135 kt CO₂ equ. by 2030 compared with 2017.⁹¹ The transition from fossil fuels to biomass use in the energy transformation sector, mainly in district heating, will reduce emissions by about 80 kt CO₂ equ. by 2030 compared with 2017.

At the same time, it should be noted that, although biomass is a renewable energy source and is considered to be a CO₂ neutral fuel with no negative impact on climate change, its combustion nevertheless has negative effects on human health and results in air pollutants such as fine particles and benzo(a)pyrene, which increase air pollution.

Biomass combustion also releases soot emissions, which are considered to be a temporary climate pollutant and contribute to climate change, thereby removing soot from heating installations also prevents climate change.⁹²

⁹¹ "National Energy and Climate Plan 2030: Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-20212030-gadam>".

⁹² Available at: <http://www.varam.gov.lv/lat/buj/?doc=27570>

3.1 Forecasts and targets for 2030

As already discussed in Table 2 of the Strategy, the total number of residential buildings in Latvia is 363 000 thousand. Of those, approximately 285 000 thousand are heated. Number of non-residential buildings is 1.068 million, of which 108 000 thousand are heated.

According to *Eurostat* forecasts⁹³, the population in Latvia could decrease from 1.9 million to 1.4 million by 2050. Such statistics also clearly indicate that, in a sense, housing policy should be subjected to them.

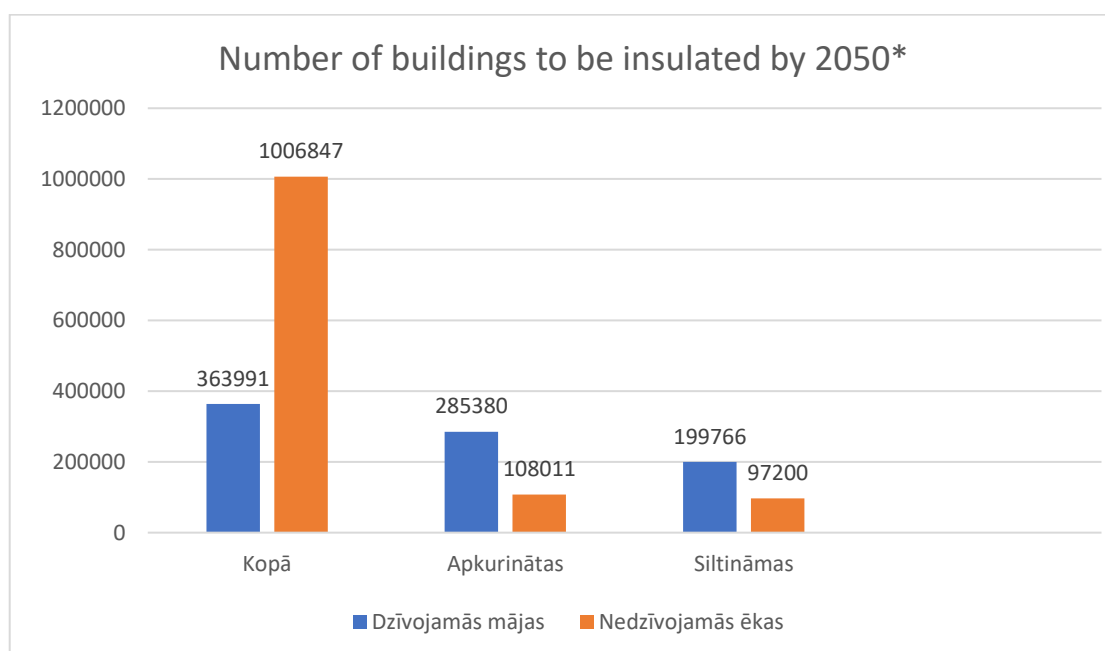
In view of the current age and depreciation of the building stock, the following assumptions can be made for 2050:

- 30% of residential buildings will no longer be fit for renovate;
- 10% of non-residential buildings will not be useful to renovation;

Total heating area for residential buildings – 56 million m²

Total heating area for non-residential buildings – 27 million m²

Figure 9.



Key: Total – Heated – To be insulated

[blue] Residential dwellings, [orange] Non-residential dwellings

*The list of heated buildings does not include garages, industrial buildings, warehouses, farm buildings, heritage sites, places of worship and other unclassified buildings.

According to Figure 9, the necessary investments for all types of buildings by 2050, depending on their area, ranging from 200 to EUR 400/m², taking into account current construction costs, amount to ~EUR 19 billion. It should be clarified, first of all, that it is essential to take into account the fact that in such assumptions the cost of one square metre is taken within a wide cost range to cover the construction costs of all types of buildings.

⁹³ Available at: https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=proj_19np&lang=en

Looking ahead, it can be concluded that in the residential buildings segment, firstly, the focus should continue to be on the renovation of apartment houses, making them as energy-efficient as possible, because despite the fact that, in number, they are almost ten times less than single dwelling houses, they have a predominance in terms of area.

With reference to the statistics already mentioned and to the current age and depreciation of buildings, it would be necessary to mobilise more people to gradually switch to more energy-efficient housing. This could be achieved by means of the guarantees already mentioned for the purchase of dwellings which correspond to a certain energy efficiency class, or by supporting young families who, encouraged by attractive financial instruments, choose to live in highly energy-efficient housing.

For example, further developing a support programme for the purchase of housing having at least the "A" energy efficiency class, thereby encouraging the public to move from housing with very low energy efficiency rates to more energy-efficient housing. Consequently, that part of the building stock which it would not be useful to renovate would also become apparent. At the same time, note should be taken of the current pace of renovation of buildings and of the available financial resources. A forecast by type of building is presented below, as well as an indicative indication of the funding gap that would be necessary for the renovation of the entire building fund.

At the same time, as regards objectives to be achieved, account should be taken of the European Commission's communication of 17 September 2020 "Stepping up Europe's 2030 climate ambition. Investing in a climate-neutral future for the benefit of our people", which among other things envisages the EU implementing a Renovation Wave over the next decade, with a renovation rate, currently around 1% in the EU, at least doubling by 2030.

With regard to this Communication, it should also be noted that, according to the impact assessment accompanying that Communication, carbon pricing will lead to an increase in energy prices in 2030 and 2050, as well as an increase in the average share of EU households' energy expenditure, resulting in a greater economic incentive for households to improve energy efficiency.

Residential apartment buildings

It should be taken into account that within the framework of NAP2027 it is planned to implement energy efficiency improvements in 40 000 apartment properties, which is about 800 apartment buildings (assuming that on average one apartment is 50m²). This would result in a total renovation of 2 million m². It is also planned that 10 000 new apartment properties will be built each year by 2027 within the framework of the plan.

Towards the target of renovating 30% of apartment buildings by 2030, a total of 8100 apartment buildings have to be renovated. Taking into account the proportion of potentially interested building owners who are ready to implement energy efficiency measures in order to achieve the target, it is necessary to restore 4 860 apartment buildings. Consequently, 4 860 apartment buildings are to be identified as a primary objective.

Table 14. Funding gap for apartment buildings

Total funding gap for residential apartment buildings	
Variables	Values
Total number and area of apartment buildings	38 600 ⁹⁴ 54.4 million m ²
Number and area of apartment houses where it is possible to carry out cost-effective recovery ⁹⁵	27 000 37.8 million m ²
Cost of energy efficiency improvements and other emergency renovation works in EUR/m ²	EUR 200/m ²
Total financial need	EUR 7.54 billion
Share of houses potentially interested in energy efficiency measures	60%
Total investment cost (actual financing needed)	EUR 4.52 billion (60% of EUR 7.54 billion)
Potential funding required over 10 years	EUR 1.5 billion (1/3 of total investment)

Table 14 shows the indicative funding that might be needed when taking into account the part of the public that would be prepared to carry out the reconstruction work. The proportion of buildings whose owners have a potential interest in using financial instruments (60%) is determined by an expert method. The expert assessment is based on the results of a quantitative survey of Latvian property managers (63% of respondents replied that homeowners were interested in participating in an energy efficiency improvement programme for apartment buildings co-financed by the EU⁹⁶.

⁹⁴Estimated number of buildings excluding projects completed in the 2014-2020 programming period of the Funds.

⁹⁵It is possible to carry out cost-effective renovations for 70% of the total number of buildings as 30% will not be fit for renovation).

⁹⁶Available

at:

<https://www.ficompass.eu/sites/default/files/publications/Ex%20ante%20izvertejums.pdf>

It can be seen from the above that, in order to achieve at least the primary objective, the investment needed is more than one-and-a-half billion euro. According to the funds available in the NAP2027 period, the already mentioned EUR 163 125 000 are indicatively foreseen for the renovation of apartment buildings.

Using the methodology for setting the target value, it is possible to make assumptions about the planned energy savings and GHG emission reductions in relation to the available financial means under the NAP2027. Thus, the indicative energy savings are 69 857 MWh per annum, while the reduction of GHG emissions is 14 111 t CO₂ per annum.

Private houses and complexes consisting of a small number of buildings

It follows from the National Energy and Climate Plan, that measures to improve the energy efficiency of buildings included in the energy savings catalogue will be carried out in at least 7500 private houses by 2030.

Secondly, complexes consisting of a small number of buildings are to be renovated, including the complex renovation of buildings by reducing the amount of heat consumed (in the installation of heating systems, preference will be given to equipment that meets the emission and efficiency requirements set out in Regulation 2015/1189, which will enter into force in 2022).

ALTUM is expected to support the first 50 private homes in 2020 by implementing a support programme to improve the energy efficiency of existing private houses using its own and national energy efficiency funds, while already in 2021 it will be 250, in order to further ensure the implementation of energy efficiency measures by providing support for an average of 500 private houses per annum in the private housing sector. Consequently, if such a programme was pursued and developed by 2030 and in pursuit of the programme's planned goals, in total, support for energy efficiency improvement in private houses would be provided to slightly more than 4 000 private houses. This support programme is described in more detail in sub-chapter 3.1.1.

In accordance with the support mechanisms included in Cabinet Regulation No 95 of 20 February 2018 "Regulation regarding State assistance in the purchase or construction of living-space" (see section on support mechanisms for achieving energy efficiency objectives for buildings), the anticipated number of transactions in the housing programme for which a guarantee is to be granted for the purchase of "A" class or near zero energy housing is 570. In turn, within the framework of the "Balsts" programme it is 400. Consequently, in total, these could be nearly 1 000 transactions related to the purchase of energy-efficient housing.⁹⁷

Although the investments needed to renovate private houses vary (not only the real costs per square metre, but also individual technical solutions, etc.), the Strategy also indicates the indicative financing that would be needed in the private housing sector. There are no statistics available in Latvia on the reduction of emissions from private houses, taking into account the measures taken to improve energy efficiency. For example, in the case of the apartment building sector, such data exist because they are accounted for by the activities and measures implemented under EU funds.

⁹⁷Available at: (see annotation) <https://likumi.lv/ta/id/315787-grozijumi-ministru-kabineta-2018-gada-20-februara-noteikumos-nr-95-noteikumi-par-valsts-palidzibu-dzivojamas-telpas-iegadei-vai...>

Table 15. Funding gap for private houses

Total funding gap for private houses	
Variables	Values
Total number and area of private houses	309 929 36.5 million m ²
Number of apartment buildings where cost-effective renovation can be carried out	233 487 ⁹⁸
Number and area of potentially energy-efficient renewable buildings ⁹⁹	163 441 (70% of 233 487) 19.3 million m ²
Cost of energy efficiency improvement and other emergency renovation works in EUR/m ²	EUR 400/m ²
Total financing required	EUR 7.7 billion
Proportion of houses whose owners are potentially interested in implementing energy efficiency measures	60% ¹⁰⁰
Total investment costs (actual financing required)	EUR 4.62 billion (60% of EUR 7,7 billion)
Potential funding required over 10 years	EUR 1.54 billion (1/3 of total investment)

Public buildings

According to Directive 2012/27/EU, Latvia's target for 2020 is an annual 3% renovation target for central government buildings, and Latvia proposes to continue with this target for the period until 2030, renovating a total of 500 000 m².

For 2021, the 3% renovation target was calculated at 55 870 m². Whereas, in 2019, the renovated area of central government buildings amounted to 50 475 m².¹⁰¹ As shown in Table 12, the total renovated area for 2017 is 398 707 m². **It can therefore be concluded that the 2030 target of a total renovation of 500 000 m² over 10 years is realistic.**

As mentioned in Chapter 2 of the Strategy, from 19 September 2016, the beginning of the selection of the first round of project applications for Measure 4.2.1.2, until June 2020, 107 project applications were submitted to the co-operation institution CFLA. From 7 March 2018 to June 2020, 27 project applications were submitted during the second round of project applications for Measure 4.2.1.2. At the same time, it is planned that 6 more project applications will be submitted.

By 2030, Latvia proposes to ensure a reduction of the average specific thermal energy consumption in buildings to 120 kWh/m²/year. If it is assumed that 101 of the 120 potential projects in the first selection round are to be implemented, it can be

⁹⁸According to the State Land Service data on buildings that are heated.

⁹⁹Given that it is not useful to renovate 30%.

¹⁰⁰Assumption similar to that in the calculation of apartment buildings.

¹⁰¹ Available at: <https://bvkb.gov.lv/lv/content/valsts-eku-saraksts>

concluded that the approximate thermal energy consumption of the renovated buildings will be up to 70 kWh/m² per annum. Consequently, from the total number of renewable public buildings (863), by renovating, for example, 101 buildings, **the average thermal energy consumption could decrease from 140 kWh/m² to the already indicated approximately 120 kWh/m².** If the problems identified by the MoE, which were discussed above, are taken into account, the planned effect could be achieved and all the projects applied so far (101 + 27 + 6 = 134) could be implemented. **For the first 15 completed projects under Measure 4.2.1.2, the total energy savings are 12 GWh per annum.** In accordance with subparagraph 8.2.3 of Cabinet Regulation No 534 of 9 August 2016 "Implementing provisions for the first selection round of project applications under the Operational programme's "Growth and Employment" specific support objective's 4.2.1 "Promotion of energy efficiency in public and residential buildings" specific support objective measure 4.2.1.1 "Promotion of energy efficiency in residential buildings"" the estimated (forecast) reduction in greenhouse gases is at least 3 932 tonnes of CO₂ equivalent per annum. Consequently, if the planned 120 buildings were to be renovated as part of the first round, emission reductions would be at least 3 932 tonnes of CO₂ equivalent per annum (3.93 kt).

Such a 3% renovation rate towards 2030 is considered satisfactory and, as already mentioned, the objective of renovating 500 000 m² is realistic if the obstacles previously identified in the Strategy are successfully removed.

Planned funding for energy efficiency improvement in public buildings under the NAP 2027 (indicative): EUR 104 400 000 (including ERDF). Using the target value methodology according to the aforementioned amount of financing, it can be assumed that the indicative energy savings would be 29,714 MWh per annum, while the reduction of GHG emissions would be 6 000 tons per annum.

Municipal buildings

According to the Regional Policy Guidelines 2021-2027¹⁰² it is planned to continue investments in improving the energy efficiency of municipal buildings, incl. for the performance of construction works, the purchase and installation of plant producing thermal energy using renewable energy resources. According to the Guidelines, an amount of EUR 142 857 143 has been requested for this support measure (including EUR 100 000 000 of ERDF financing). According to NAP 2027 mission [336], "Improving public services in line with population dynamics by developing alternative service models and infrastructure, the energy efficiency of municipal service buildings as well as the quality of public outdoor spaces", a total of 6 measures are foreseen with a total indicative funding (ERDF and the European Agricultural Fund for Rural Development) of EUR 156 395 714.¹⁰³ The aid is intended to reduce primary energy consumption (indicative of 68 000 MWh/year if the SSO 4.2.2 approach to measuring the values of the indicators is maintained) and, secondly, **to reduce greenhouse gases (indicative of 17 200 tonnes of CO₂ per annum)**¹⁰⁴.

Pursuant to Cabinet Regulation No 456 of 14 July 2020 Regulation on the conditions and procedures for the granting of State loans to local governments for the

¹⁰²Regional Policy Guidelines 2021-2027. Available at:<https://likumi.lv/ta/id/310954-par-regionalas-politikas-pamatnostadnem-2021-2027-gadam>.

¹⁰³NAP2027 indicative set of investment projects. Available at: <https://www.pkc.gov.lv/lv/nap2027>

¹⁰⁴Regional Policy Guidelines 2021-2027. Available at:<https://likumi.lv/ta/id/310954-par-regionalas-politikas-pamatnostadnem-2021-2027-gadam>

mitigation and prevention of the effects of the emergency situation related to the spread of COVID-19" (replacing Cabinet Regulation No 278 of 12 May 2020 "Procedures and conditions for the issuance of new State loans for the mitigation and prevention of the impact of the emergency situation associated with the spread of COVID-19 in local governments"), local governments may apply for a state loan for the implementation of energy efficiency improvement projects in municipal buildings (one of the possible investment objectives).

At the same time, it should be noted that the planned results to be achieved relate to the amount of funding requested in the 2021-2027 Regional Policy Guidelines. Accordingly, when implementing measures to the extent specified in the National Development Plan for 2021-2027, the results to be achieved will be proportionally lower.

Table 16. Funding gap for non-residential buildings

Total funding gap for non-residential buildings (excluding industrial buildings)	
Variables	Values
Total number and area of buildings	973 871 ¹⁰⁵ 97.3 million m ²
Number and area of buildings that it is possible to renovate ¹⁰⁶	75 000 27.15 million m ²
Number and area of potentially energy-efficient renewable buildings ¹⁰⁷	67 500 (90% of 75 000) 24.45 million m ² (90% of 27.15 million m ²)
Costs of energy efficiency improvement and other emergency renovation works in EUR/m ²	EUR 200/m ²
Total indicative financing required	EUR 4.89 billion
Potential funding required over 10 years	EUR 1.63 billion (1/3 of total investment)

As regards industrial production buildings, it should be noted that the amount of investment needed is difficult to quantify, since, as is also apparent from the the specific support objective 4.1.1 "Promotion of efficient use of energy resources, reduction of energy consumption and transition to RES in the manufacturing sector" of the current Cohesion Fund, the renovation of buildings is only one of the positions eligible for funding. The entrepreneurs themselves also prefer to replace equipment rather than to promote the energy efficiency of a building.

Consequently, industrial buildings are not included in the total investment, but are considered in the strategy as they are covered by EU funds and represent a significant proportion of total emissions of the buildings sector.

¹⁰⁵Non-residential buildings of all kinds, including garages, sheds etc.

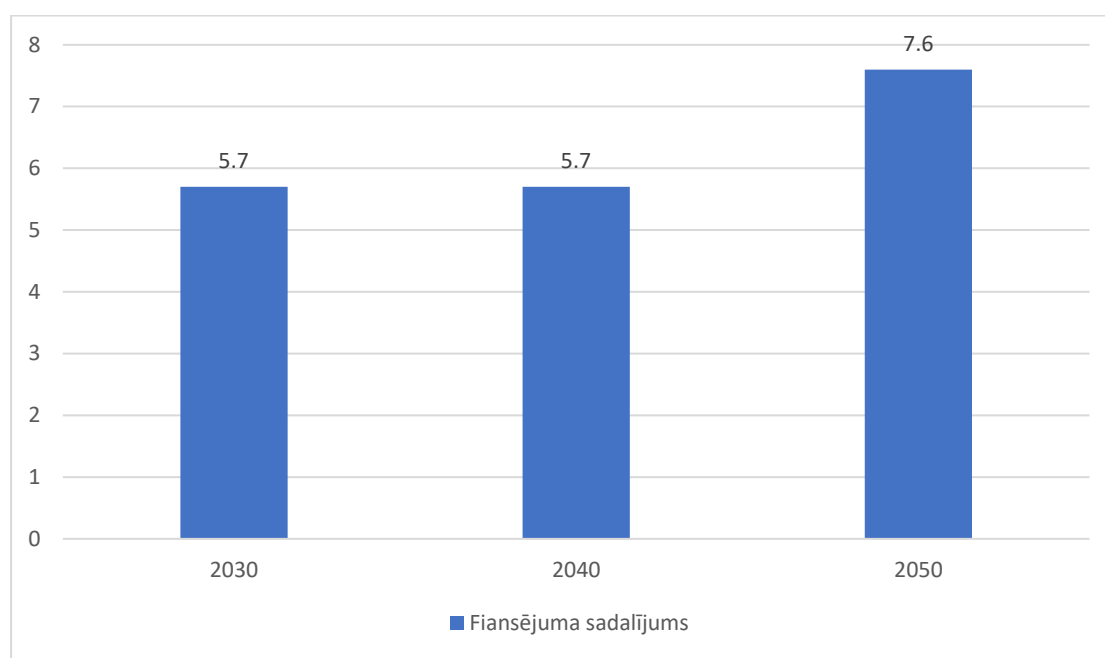
¹⁰⁶ According to the data of the State Land Service - buildings with heating.

¹⁰⁷ Assuming that it would not be useful to renovate 10% (by 2050).

With regard to energy savings and GHG emission reductions, the largest energy savings in the industrial buildings sector are from the replacement of equipment. Industrial buildings are characterised by a fundamentally different energy consumption influenced by existing production technologies. Given the specificities of manufacturing sub-sectors, their energy consumption also varies considerably, depending on the production technologies, processes and raw materials needed and their volumes.

Table 17.

Indicative funding required (billion EUR) and its breakdown by decade for the renovation of the entire building stock.



[Blue] Breakdown of funding

Table 17 refers to the indicative projected funding needed to rebuild the entire building sector and its even distribution over decades, with 30% investment needs by 2030 and 2040 respectively, while 40% of the financial resources would be needed to sort out the building stock by 2050.

A new approach to the renovation of residential districts

As mentioned in the Strategy below regarding the plan to develop standardised wooden building projects, it is necessary to address the issue of the development of standardised projects for the renovation of residential apartment buildings (at the same time, it should be noted that such activities should be extended not only to standardised apartment buildings but also, for example, to mixed construction precincts which include both apartment buildings of different periods and State and local government buildings). The development of such a standardised project for the renovation of buildings of a specific series would also make this process much more efficient in terms of both cost and time. Specifically with regard to the development of standardised projects for apartment buildings, clearly such projects would be needed in Latvia's largest cities, especially in Riga, where it would even be possible to implement the

renovation of whole precincts, thereby saving costs on the preparation of documentation for each individual site, while at the same time getting into order the recreational areas of these precincts.

Already now, during the 2021-2027 period, one of the European initiatives to improve the energy-efficiency and climate-neutrality of the built-up environment will focus on developing "positive energy districts/neighbourhoods". As "positive energy neighbourhoods" are seen as one of the basic formats for the testing of different smart technologies and innovative solutions (test beds), by promoting such an approach to renovate the built-up environment at a strategic level, at the same time, this would encourage development of Latvia's innovation environment and international competitiveness, including improved opportunities for Latvia to participate in tenders for projects and in mobilising funding from Horizon Europe, the EU research and innovation programme 2021-2027.

3.1.1 Support mechanisms for the achievement of energy efficiency targets for buildings

Removing barriers in the rental market

There is currently no active construction of rental apartment buildings in Latvia, not to speak of laying down requirements for a certain level of energy efficiency for rental properties. This is linked to the risks for landlords arising from current legislation. These risks, also taking into account the fact that a tenant can only be evicted from residential premises pursuant to a court order, increase the costs of building rental buildings for potential developers so significantly (as a result, possible rent levels also become more expensive) that the construction of new rental buildings is currently not cost-effective. The new draft Law on Rental of Living Areas¹⁰⁸, which includes conceptually different solutions, is expected to significantly reduce the current risks.

Consequently, by drafting a new law, the aim is to: 1) promote the construction of rental houses and access to housing; 2) ensure a fair balance between the interests of landlords and tenants. The rental market is expected to be able to mobilise investments of around EUR 600 000 000 per annum for the construction of new energy-efficient housing.

Availability of rental housing

Current information shows that the development of rental housing is only viable if long-term financing at low interest rates is available. Share of households facing financial difficulties (very burdensome/slightly burdensome) in total housing-related expenditure in 2018 was 75.6%. In light of this, it would be necessary to establish a sustainable support model for the construction of affordable, high-quality and energy-efficient rental housing in areas with increasing employment by establishing a financial instrument for the granting of low-interest loans; such housing being available to disadvantaged people or vulnerable groups who, due to solvency constraints, do not have the opportunity to acquire housing under market conditions.

In order to ensure that rental housing created in concert with this support instrument is affordable to its intended audience, a rental ceiling should be set for these

¹⁰⁸Available at:
[https://titania.saeima.lv/LIVS13/saeimalivs13.nsf/webAll?SearchView&Query=\(Title=*&ABres+likums*\)&SearchMax=0&SearchOrder=4](https://titania.saeima.lv/LIVS13/saeimalivs13.nsf/webAll?SearchView&Query=(Title=*&ABres+likums*)&SearchMax=0&SearchOrder=4)

apartments. After the repayment of the principal amount of a loan, it is envisaged that a part of rental payments will be paid in to a general fund, thereby ensuring financing for other housing availability measures.

The measure would have a direct positive impact on the economy by providing additional real estate tax revenues, wage-related tax revenues, and ensuring an increase in corporate income tax from building materials producers.

The availability of affordable and high-quality rental housing will encourage the participation of job seekers and the unemployed in the labour market, ensuring labour mobility, promoting economic growth and reducing depopulation. The competitiveness and productivity of workers would be promoted: housing costs in places with rising employment are significantly higher, which in turn limits the possibility for individuals to relocate to such places and increase competitiveness by choosing jobs freely.

Taking into account the rising cost of housing, low income levels and the purchasing power of the population are the main reasons for the problem of housing availability both in Riga and in other regions. The availability of affordable and high-quality housing would reduce the material deprivation of households and ensure that more quality housing is available to them.

The measure would promote an even growth of construction services, as well as encouraging energy efficiency, as providing support, this will focus on and raise requirements for the efficient use of housing resources.

At the same time, it should be noted that this measure will be introduced subject to the requirements of regulations governing aid to commercial activities.

Construction and renovation of social housing

The measures stemming from the NAP2027, including those related to the renovation and construction of social housing, have already been mentioned in Chapter 3 of the Strategy and in Subsection 2.3.5 "Reduction of energy poverty".

Latvia is currently facing a major challenge with regard to the critical technical state of social housing and its scarcity. In Latvia, social housing and local government assistance homes account for only 2% of the total housing stock. At the same time, vacant municipal housing stock consists of 3 286 dwellings, but only 1 046 are suitable for living - two thirds are premises which are not habitable. Local governments are not adding to their housing fund or actively improving its technical condition due to a lack of funding.¹⁰⁹ Accordingly, around 6 200 people are currently not receiving housing assistance. Problems with the technical condition and number of social housing were also highlighted in the 2019 Report of the European Commission on Latvia.¹¹⁰

In order to overcome the problems identified, the main objective is to ensure access to decent living housing for the residents with the lowest income and to reduce queues in municipalities for renting such housing. Consequently, in order to implement the tasks included in NAP2027, it is planned to develop a programme within which:

- Local governments are intended to be recipients of the aid, while the final beneficiaries of the aid will be the persons who have the right to receive assistance in the municipality in accordance with the Law on Assistance for solving housing issues and the Law on Social apartments and social housing.

¹⁰⁹Letter No 1-12/6 of the Ombudsman of the Republic of Latvia of 28 August 2018

¹¹⁰Available at [:https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-latvia_en.pdf](https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-latvia_en.pdf).

- Construction of new social housing is expected to take place in the territory of municipalities where, at the time of implementation of the project, in addition to housing construction, projects promoting business and employment are being implemented or planned in the coming year. The renovation of existing social housing and the construction of new social housing is intended for territories where, in accordance with regulations, there are people waiting in line for this housing.

Financing mechanism and activities to be supported:

grants for the construction of social housing are awarded by the CFCA after evaluation and approval of projects;

- reconstruction (renovation) of municipal or social apartments owned by the municipality – 70% of reconstruction (renovation) costs;
- construction of social residential or municipal rental houses – 70% of construction costs;
- for rebuilding (reconstruction) of buildings owned by local governments into residential buildings or for the completion of newly constructed apartment buildings (the construction of which has been suspended) – 70% of the rebuilding (reconstruction) costs.

A favourable legal framework for young families for the purchase and construction of energy-efficient housing

The MoE has also drawn up a draft Regulation "Amendments to Cabinet Regulation No 95 of 20 February 2018 "Regulation regarding State assistance for the purchase or construction of living-space"". These amendments have entered into force.¹¹¹

- The regulations provide for a guarantee in the amount of 10% to 30% for the purchase of a dwelling to persons who live with at least one dependent child. Amendments to the Regulations provide for an additional 5% increase in the guarantee if the residential areas to be purchased correspond to energy performance class "A" buildings in accordance with Cabinet Regulation No 383 of 9 July 2013 "On energy certification of buildings" or are near zero energy buildings.

Such an additional guarantee of 5% would be an incentive to increase public demand for energy efficient housing, thus also incentivising the renovation quality of existing buildings to at least energy efficiency class "A", rather than just meeting minimum energy performance requirements when renovating or reconstructing buildings; at the same time, such a mechanism would indirectly contribute to progressing the building stock towards the established aim of climate neutrality. In the case of residential buildings not considered as new buildings, as a result of improving the energy efficiency of buildings, older residential buildings may also fulfil the criteria set for energy efficiency class "A" buildings if, for example, renovation and other measures to promote energy efficiency have been carried out.

Support programme "Balsts"

¹¹¹Available at: <https://likumi.lv/ta/id/297289-noteikumi-par-valsts-palidzibu-dzivojamas-telpas-iegadei-vai-buvniecibai>.

This programme under Cabinet Regulation No 95 of 20 February 2018 "Regulation regarding State assistance for the purchase or construction of a living areas" will support Latvian families by making available the possibility to receive a non-reimbursable state subsidy for the purchase or construction of housing for families with at least three children.

For families with three children, the subsidy will be EUR 8 000 for "ordinary" housing, or EUR 10 000 if the housing meets the energy performance requirements for near zero-energy buildings. For families of four and more children, the subsidies will be EUR 10 000 and EUR 12000 respectively.

In order to qualify for the "Balsts" subsidy, the value of the property chosen may not exceed EUR 250 000 and the income per family member must not exceed EUR 17 000 per annum before tax. The recipient must be tax resident in Latvia for at least the last 12 months and the subsidy may not exceed 50% of the total amount of the transaction or construction project. This non-reimbursable subsidy will also be available at the same time as the housing guarantee scheme and will be used to cover a mandatory first instalment of 5%.

Reducing the perceived risks of energy efficiency activities for investors and the private sector

The above mentioned Cabinet Regulation No 95 of 20 February 2018 "Regulation regarding State assistance for the purchase or construction of a living-space" provides for an improved programme for the granting of guarantees. It is enhanced by a portfolio guarantee mechanism. The Portfolio Guarantee Facility will allow for a more efficient implementation of the housing purchase programme by reducing the amount of funding needed, speeding up the treatment of loan applications and reducing risks to ALTUM. Portfolio guarantees are a new financial instrument that allows entrepreneurs to obtain bank financing at a reduced interest rate. Portfolio guarantees in the financial instrument will continue, as is currently the case, in respect of ALTUM guarantees for the part of a loan provided by a credit institution. In the event of default, the guarantee covers a certain portion (guarantee) of the credit institution's losses on the outstanding part of the loan. Portfolio guarantees in the financial instrument will be granted by credit institutions applying for funding to ALTUM. Any credit institution entitled to provide credit services in Latvia will be able to apply to ALTUM for financing under the Portfolio Guarantee Facility.

Implementation of the energy efficiency improvement measure in the existing private housing sector

A regulation approved by the Cabinet of Ministers¹¹² provides for the procedure by which ALTUM, using its own and the State Energy Efficiency Fund's resources, implements a support programme for achieving the mandatory targets for energy end-use. At present, the household sector has access to support from European Union funds for improving energy efficiency within the framework of the 2014-2020 programming period. However, only buildings with three or more apartments are eligible for this aid. Residential buildings with fewer apartments or individual residential buildings are not eligible for aid.

¹¹² Available at: <http://tap.mk.gov.lv/lv/mk/tap/?pid=40489660&mode=mk&date=2020-07-28>

As already mentioned in Section 3.1, in order to ensure the implementation of energy efficiency improvement measures in the private housing sector in the planned amounts, providing support to an average of 500 private houses per annum, the Ministry of the Economy in cooperation with ALTUM and the Financial Sectors Association has developed a support programme for this housing sector, due to the fact that private house owners lack an understanding and information about economically justified energy efficiency measures so that these are not implemented, owners are not sufficiently informed about additional investment financing opportunities and credit institutions do not have interesting offers for owners, they do not have enough co-financing to receive new loans, and in some territories of Latvia, private houses do not have sufficient collateral value.

The aid in question is intended to:

1. address the lack of access to finance for improving the energy efficiency of private houses;
2. introduce a new support programme for improving the energy efficiency of private houses.

For implementation of the programme, it is envisaged to use financing from the State Energy Efficiency Fund in accordance with Article 7 of the Law on Energy Efficiency. The available funding comes from the Energy Efficiency National Fund and the unencumbered reserve capital of ALTUM, to the extent of:

EUR 59 250 in 2020 for the financing of approximately 50 private houses and EUR 296 250 in 2021 for the financing of approximately 250 buildings, with a total of EUR 355 500, are intended to cover losses (foreseeable and unforeseeable) in the implementation of the programme and for ALTUM management fees.

ALTUM will develop an assessment of the improvement of energy performance of buildings through funding from the European Investment Bank Horizon2020 programme ELENA.

Improvement of the technical condition of the housing stock

It is planned to introduce a financial instrument that would promote the development and maintenance of the housing fund by providing state support for improving the quality of residential apartment buildings in cases where a residential apartment building needs to invest in the maintenance of the building, but insufficient payments have been made (or not at all) to the savings fund. Support would be provided to improve the energy efficiency of both apartment buildings and private houses, and to improve the technical condition of these buildings; renewable energy generation as well as investments in district heating.

The existence of such a financial instrument would enable residents to organise themselves in a timely manner in order to make the necessary investments to improve the condition of buildings, which would also provide the construction industry with potential demand in the building renovation sector.

At the same time, in order to attract more financial resources for the renovation of apartment buildings in cooperation with international financial institutions, an innovative financing scheme with a multiplier effect should be established.

Given that the impact of COVID-19 on the economy will have a negative impact on the construction, timber and real estate market sectors, additional stimulus measures are needed in the country, which will have a positive impact on the Latvian economy and the welfare of society as a whole.

The need to support the provision of funding to residents for the renovation of buildings was also highlighted in the audit by the State Audit Office "Are the preconditions for compliance with safety requirements for buildings under the management and control of municipalities fulfilled?". As already pointed out in subchapter 3.2.1 of the strategy towards 2040, it would be necessary to provide additional measures and establish a financial support mechanism to promote renovation measures not only for under-capitalised buildings but also by ensuring the participation of low-income persons in the renovation and solvency of apartment buildings".

Also, given that it is in Riga that approximately one third of all Latvian dwellings are located and that there is an urgent need to renovate about 6 000 apartment buildings in Riga, it is necessary to strengthen cooperation with the municipality of Riga by providing for measures to promote the renovation of buildings. Riga not only has a high share of renewable buildings, but also a low rate of renovation activity for existing buildings.

Aid for improving the energy efficiency of non-residential buildings and the deployment of renewable energy sources

ALTUM provides loans using financial resources of the Green Bonds issue, amounting to EUR 20 000 000, for companies and institutions wishing to make energy efficiency improvements. Funding of up to EUR 2 850 000 per project is available, providing for only 15% participation by the company. ALTUM loans are available to both private companies and state-owned and municipal companies wishing to provide their services in significantly more energy-efficient buildings – offices, warehouses, manufacturing premises, hotels, shops, etc. The most important thing is that the planned energy efficiency improvement activities pay off, save costs and, in the long term, also contribute to profits.

These loans may finance the improvement of the energy efficiency of companies, including:

- modernisation of heating systems;
- upgrading existing production facilities;
- upgrading transport;
- retrofitting ventilation;
- drying, heat, cooling, steam production equipment, driers, motors, pumps;
- LED lighting;
- electricity supply facilities as well as other energy consumers for the installation of renewable energy systems.
- installation of renewable energy systems¹¹³

At the same time, ALTUM has signed a loan agreement with the European Investment Bank (EIB) in the amount of EUR 18 000 000 to finance energy efficiency projects for businesses in Latvia. The financing is complemented by a guarantee of

¹¹³Available at: <https://www.altum.lv/lv/pakalpojumi/uznemumiem/aizdevumi-uznemumu-energoefektivitatei/aizdevumi-uznemumu-energoefektivitate/>

EUR 3 000 000 from the Private Finance for Energy Efficiency (PF4EE) facility provided by the European Union under the LIFE programme.¹¹⁴

PF4EE is a joint financial instrument of the EIB and the European Commission that stimulates loans from financial institutions in the field of energy efficiency and enables financial intermediaries to partially recover the losses they may incur by offering newly created portfolios of energy efficiency loans to end-recipients.¹¹⁵

As already mentioned, the programme facilitates access to funding for companies implementing energy efficiency improvement projects. Financing rules:

- Available to businesses registered in Latvia to carry out investments in the territory of the Republic of Latvia;
- Investments for energy efficiency measures as well as investments for renewable energy sources;
- The maximum amount of the project is EUR 10 000 000.¹¹⁶

The financial institution ALTUM will continue to develop financial instruments for financing energy efficiency projects, including a loan programme for a company's energy efficiency and for the implementation of renewable energy projects. In order to ensure the creation and use of additional targeted funding, it is proposed to set up a fund for the promotion and improvement of energy efficiency of the RES, in which financings can be channelled from income generated from energy-related activities — excise duty and natural resource tax applicable to fuel and to fuel used for energy production, to revenues from forest land auctions and from the lease of state-owned real estate for the construction of wind farms, as well as from the marketing of RES statistics to other countries, where funding from that fund should be used, *inter alia*, for AE communities and RES measures in local governments. At the same time, it should be noted that the establishment of such a fund is still subject to evaluation and this is expected to be done by 31 December 2022.¹¹⁷

In order to promote the attractiveness of implementing energy efficiency improvement measures, it is also proposed to assess the possibility of developing trading opportunities for energy savings, where one participant could transfer its energy savings to another participant that has exceeded its savings targets.¹¹⁸

Promoting the establishment of a new housing fund

The availability of guarantees and loans for construction projects for new energy-efficient buildings, particularly in regions, is one of the conditions for attracting investors to such projects. Currently, the commercial banking sector offers such loans very cautiously, especially in the regions.

Support could be provided to apartment building developers who want to build high-quality, energy-efficient apartment buildings for rent or sale at market rates. This

¹¹⁴ Available at: <https://www.altum.lv/lv/jaunumi/altum-un-eib-kopigi-ieguldis-energoefektivitate-latvija>

¹¹⁵ Available at: <https://www.altum.lv/lv/jaunumi/altum-un-eib-kopigi-ieguldis-energoefektivitate-latvija>

¹¹⁶ Available at: <https://www.altum.lv/lv/pakalpojumi/uznemumiem/aizdevumi-uznemumu-energoefektivitatei/pf4ee-garantijas-energoefektivitates-projektu-realizacijai/>

¹¹⁷ Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-20212030-gadam>. (Annex 4. Measure H.8).

¹¹⁸ Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-2021-2030-gadam>

support measure should reduce the collateral requirement for real estate developers, as well as encouraging the involvement of commercial banks in housing development projects.

The measure should have a direct positive impact on the economy, providing additional real estate tax revenues, wage-related tax revenues and an increase in corporate income taxes from building materials producers.

The measure should promote a steady increase in construction services, as well as energy efficiency, because the support will focus on and increase the resource efficiency requirements for housing.

At the same time, it should be noted that this measure will be introduced subject to the requirements of regulations governing support to commercial activities.

Energy efficient solutions for standard-type buildings

Given that the COVID-19 impact on the economy will be significant and will have a negative impact on the performance of several sectors, active involvement of policy makers with various types of incentive measures is needed. Access to contemporary quality housing is one of the most important priorities for ensuring the well-being of the inhabitants of urban areas in the country, therefore housing is particularly important in the context of the development of the investment environment.

According to estimates by the Ministry of the Economy, the cost of preparing the project planning for a residential apartment building constitutes 8% of the total construction costs of one residential apartment building. At the same time, it is possible to reduce these costs significantly if a project is not developed for each building, but it is possible to choose an already prepared standard project that would have increased energy efficiency solutions using construction products and building structures manufactured or obtained in Latvia.

In order to promote the use of wood construction products in the construction of buildings, in 2017 the Cabinet of Ministers approved amendments to the Cabinet Regulation No 333 "On the Latvian construction standard LBN 201-15 "Fire safety of buildings"". Under the new framework, new residential buildings of up to 18 m and up to 6 floors are allowed to be built in Latvia using wood construction products.

The government supported¹¹⁹ the initiative of the Ministry of the Economy to grant financing for the development of standard construction projects for advanced energy-efficient residential apartment buildings, using construction products and building structures manufactured or obtained in Latvia.

The development of standard construction projects is important: for the construction industry, promoting the construction of new, energy-efficient housing; for the timber industry, promoting demand and the use of wood construction products for buildings; for the development of the real estate market; for ensuring public interest (improvement of living standards, economic stimulation), thus promoting the negation of the negative effects of COVID-19 on the economy and contributing to economic stimulation, as well as a positive impact on Latvia's energy and climate goals (increased energy efficiency of buildings, increased use of renewable energy in buildings, reduced GHG emissions).

Action to mitigate potential risks in the development of the ESCO market, support for energy efficiency service providers

¹¹⁹ Available at: <http://tap.mk.gov.lv/lv/mk/tap/?pid=40489549&mode=mk&date=2020-07-14>

At the meeting of State Secretaries on 27 July 2017 (Protocol No 29, §4), a draft Cabinet Regulation was announced, which provided for co-financing by EU funds to support the financing of energy efficiency service providers in the form of loans and a refinancing mechanism. In November 2017, ALTUM requested advice from the EIAH on the establishment of the ESCO refinancing investment platform. One of the fundamental issues was the use of EU funds to provide refinancing. On 18 May 2018, ALTUM received an opinion from the EIAH that EU funds should not be used to implement the refinancing instrument. As a result, the development of the relevant support programme co-financed by the European Union had become impossible and the draft Cabinet Regulation was withdrawn.

One of the options that should be considered is setting up the refinancing fund jointly by the public and private sector as a public private partnership. This would encourage the use of the energy services markets, including financial instruments, as referred to in Article 18 of the Energy Efficiency Directive, and would encourage private investment.

This would reduce the debt burden of ESCO which is actively implementing energy efficiency improvement measures and would enable them to repeatedly receive loans for new projects.

Taking into account the limited access to this type of long-term financing, the Ministry of the Economy, in cooperation with ALTUM, proposed amendments to Cabinet Regulation No 1065 of 15 September 2009 "Provisions on loans to promote the development of micro, small and medium-sized economic operators and agricultural service co-operative societies" by supplementing them with conditions for loans for the purchase of cash flow of energy efficiency service providers. The granting of such loans would allow for faster investment flows and would increase the capacity of ESCO, as they will have a solution which frees them of long-term financial obligations while remaining responsible for providing their services throughout the lifetime of the energy service contract.

The amendments of 7 April 2020 supplemented these provisions with a new chapter – "Loans to purchase the cash flow of energy efficiency service providers".¹²⁰ Some of the conditions for granting a loan include, for example:

- loans may be granted up to a maximum of EUR 2 000 000;
- the loan does not exceed 45% of the cost of the financial service;
- the maximum term of the loan is 20 years.

Directing investments to an energy-efficient public building fund, conclusion of energy efficiency contracts in the public buildings sector

As described above, local governments and public authorities have the right to use ESCO (PESCO) and conclude energy efficiency service contracts¹²¹, but the

¹²⁰ Available at: <https://likumi.lv/doc.php?id=198282>

¹²¹ According to the Law on the Annual State Budget local governments are not entitled to undertake long-term liabilities pursuant to Article 22 of the Law on Local Government Budgets, except for the following liabilities: 1) up to five years for the purchase of services, hardware, communications and other office equipment necessary for the provision of the autonomous functions of local governments; 2) for the provision of long-term social care and social rehabilitation services; 3) for the implementation of the investment projects referred to in the Law on the Annual State Budget; 4) for the implementation of

investments made under the contracts are listed as public debt with an impact on fiscal space. Such contracts, which are concluded between an ESCO company and a local government, provide for guaranteed savings, for which the ESCO company takes all responsibility.

It is intended to develop the ESCO market by addressing the shortcomings of this market, since commercial banks do not offer long-term financing to energy-efficiency service providers. The ESCO market could also be developed by incorporating opportunities to implement energy efficiency improvement projects directly with ESCO.¹²²

Identifying barriers to the development of the ESCO service listed in subsection 2.3, it should be noted that Latvia has not yet developed templates for the Energy efficiency service agreement for the municipal sector, which would allow concluding long-term contracts with a term exceeding 5 years.

At the same time, it should be noted that within the framework of the EIB JASPERS order, a "Maastricht neutral" or off-balance sheet ESCO agreement has been developed, which was sent to EUROSTAT for approval in June 2020. The agreement will be applicable to the public sector - both local governments and state institutions.

The Ministry of the Economy also continues discussions with the Ministry of Finance, local governments and ALTUM, which are also working on measures that promote the development of the ESCO in the public sector, but which are hampered by the current regulatory framework.

Public authorities are already allowed to conclude PPA agreements and, in accordance with the provisions of Article 24 of the Law on Budget and Financial Management, to undertake long-term liabilities that go beyond the ceilings for long-term liabilities of the state budget specified in the Law on the State Budget for the Financial Year, if the relevant Cabinet decision has been taken. However, the aim is to make this procedure less cumbersome so that the service is convenient and comprehensible for the parties involved. It is also planned to develop publicly available guidelines for the preparation of energy efficiency projects and for the organisation of procurements. It is possible to involve the European Investment Advisory Hub, which has also contributed to the development of the *Eurostat* guidelines, as well as the EIB, in the development of the guidelines.

As an additional activity to promote the ESCO service in the public sector, the Ministry of the Economy, in cooperation with commercial banks and their representatives, may organise seminars on the involvement of ESCO with public capital companies (many state buildings are concentrated in public capital companies) as well as in municipal and ministerial buildings.

The two potential strands of such seminars could be the presentation of offers in respect of traditional commercial bank loans, which are easily accessible without a burdensome approval process, and as a second subject would be the ESCO service model.

Private sector initiatives to promote ESCO services in the public sector are described below. In the opinion of the Ministry of the Economy, the scope of such pilot projects should be increased by analysing what further actions should be taken to make such projects already an established service already looking to 2030.

public-private partnership projects approved in accordance with the procedures laid down in the Law on Public-Private Partnerships.

¹²²Available at: <https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-2021-2030-gadam>

Private sector initiatives

On 24 February 2017, the newly created fund for mobilising finance - the Latvian Baltic Energy Efficiency Facility (LABEEF) - and the European Bank for Reconstruction and Development (EBRD) signed an agreement on mobilising investments for the reconstruction of apartment buildings.

In order to carry out the renovation of buildings in Latvia, the main sources of funding to date have been European Union funds, which are expected to be available until 2020, therefore, as an alternative for attracting new funding, the fund for mobilising finance LABEEF was created. The aim of the fund is to create a platform for attracting new investment and, thanks to the best foreign practices and procedures developed by the fund, to provide for the reconstruction of ageing residential buildings in Latvia.¹²³ The aim is also to support energy service companies (ESCO), which implement renewal measures in apartment buildings on the basis of energy efficiency agreements.

In order to be eligible for funding from LABEEF, the renovated buildings must meet the highest energy efficiency standards while at the same time providing owners with safety, health and comfort guarantees for up to 20 years. The operation of the LABEEF fund is financed by private investors and the European Bank for Reconstruction and Development.

The LABEEF funding process is divided into 3 stages:

1. LABEEF finances projects implemented according to LABEEF standards and using LABEEF standard documentation, including template energy efficiency service agreements (EESA): EPC, EPC+ and EPC++. An ESCO must comply with these requirements before starting the renovation of a building.

2. When an ESCO is ready to implement a building renovation project in line with the requirements of LABEEF and has agreed with a commercial bank on financing for the project for the first 2-3 years, LABEEF signs its commitment to purchase the future revenues of the ESCO that will be generated by the project.

3. After the building has been renovated and one heating season has elapsed, LABEEF conducts an audit of the work carried out by the ESCO and verifies that the objectives set by the EESA have been achieved. If this is the case, LABEEF buys the future revenues of the ESCO that will be generated by the project.

At the end of 2018, LABEEF refinanced the renovation of the first six residential apartment buildings in Cēsis, Sigulda and Riga.¹²⁴

In order for the market to continue to grow, it needs innovation, such as the already mentioned ESCO services, financial instruments, standardised projects, etc. Project implementation is necessary both to ensure reliability and to build experience. Cooperation between stakeholders and the transfer of experience is a way to facilitate the implementation of projects. Positive examples in Latvia are projects "SUNShINE"¹²⁵, "Accelerate SUNShINE"¹²⁶ and "EnPC-Intrans"¹²⁷ that were funded

¹²³ Available at: <https://fm.gov.lv/lv/aktualitates/jaunumi/54486-erab-nosledz-sadarbibas-ligumu-ar-labeef-fondu-eku-renovacijai-latvija>.

¹²⁴ Available at: <https://sharex.lv/lv/labeef/>.

¹²⁵ Latvian scientists will help promote energy efficiency of soviet era buildings under an EU-funded project. Available at: <http://www.db.lv/ipasums/latvijas-zinatnieki-es-finanseta-projekta-palidzes-veicinat-padomju-eku-energoefektivitati-438781?from-full>.

¹²⁶ Horizon 2020 project "Accelerate SUNShINE" launched. Available at: <http://www.bauska.lv/lv/notikumi/uzsakts-horizon-2020-programmas-projekts-accelerate-sunshine-3821>

¹²⁷ Available at: <http://www.enpc-intrans.eu/language/lv/majas/projekta-informacija/>.

by the EC programme Horizon 2020. Projects "SUNShINE" and "Accelerate SUNShINE" were initiated by Riga Technical University together with the private, non-governmental and public sectors. The aim of both projects is to develop technical and procurement documentation, using the best practices of European countries, to facilitate the process of renovation of public and apartment buildings by local governments using an energy efficiency service agreement. A new standardised ESCO agreement for the apartment building sector has already been developed, which clearly and transparently defines payments for thermal energy actually consumed, the reimbursement of investments made by ESCO, and the price of the service. Project "Accelerate SUNShINE" involves the municipalities of Ādaži, Bauska, Jūrmala and Tukums.

The aim of the "EnPC-INTRANS" project, whose partner in Latvia was the Zemgale Energy Agency, was to increase the recognition of ESCO agreements in the public sector in project member states and to promote private sector participation in innovative financing schemes for energy efficiency investments in the public sector. The project introduced large-scale capacity-building measures at the level of local authorities to jointly develop and apply the adapted agreement models for investments to improve energy efficiency in the public sector.¹²⁸

ESCO Procurement Manual

An ESCO procurement manual has been developed within the framework of the project "QualitEE - quality certification systems for energy efficiency services" supported by the EU programme Horizon 2020. This manual is designed to promote the application of quality criteria in respect of energy efficiency services for an energy efficiency project at the procurement stage.

The manual has been developed for the preparation of energy efficiency service procurement, to be used in the public and private sectors, for energy efficiency project managers/coordinators, as well as for energy efficiency service providers. The ESCO Procurement manual contains recommendations on the application of quality criteria in the context of energy efficiency agreement and energy supply agreement procurements. This ESCO Procurement manual can serve as a model and a contribution to a successful ESCO procurement process.¹²⁹

Meanwhile, under the project "Accelerate SUNShINE", an energy efficiency service agreement for the renovation of public buildings in Latvia has already been developed and proposed. According to the authors, for the renovation of a building to be of high quality, to achieve the planned level of energy efficiency, to ensure a high level of indoor comfort, to choose the best cost-effective solutions and to ensure the long-term durability of the completed works, it is necessary in the process of the building renovation, to involve professionals who specialise in the implementation of energy efficiency projects and who are ready to assume long-term guarantees.¹³⁰

Other measures to be implemented in relation to energy efficiency and energy saving

¹²⁸ Available at: https://www.em.gov.lv/lv/nozares_politika/energoefektivitate_un_siltumapgade/energoefektivitate/energoefektivitates_pakalpojumi/.

¹²⁹ Available at: <https://qualitee.eu/lv/news/projektu-vadibas-kvalitates-kriteriji-un-esko-iepirkumarakasgramata/>.

¹³⁰ Available at: <http://ekodoma.lv/lv/publikacijas/energoefektivitates-pakalpojuma-ligums-publisko-eku-atjaunosanai>.

- Before commencing making available aid under the next programming period, the Ministry of the Economy should assess a number of implementation models in order to avoid the risk of ineligible costs and to be able to restore as many buildings as possible with limited available public resources, thus making efficient use of available resources;
- it is necessary to review the terms for the aid in order to make them simple, easily accessible and without a cumbersome approval process. The terms should be designed to ensure a low administrative burden for programmes and low eligibility risks for residents, as well as to mitigate risks for creditors. They should also be available in the regions; appropriate financial instruments should be provided with greater flexibility, such as grant support for larger projects and a guarantee mechanism for smaller projects, where commercial banks continue to act as financial intermediaries;
- it would also be necessary to provide funding for the development of technical documentation for public building projects by 2030 in order to support projects in future with a high level of readiness, to contribute to the faster use of funding and the achievement of energy efficiency targets;
- Along with the classic energy efficiency improvement measures in buildings¹³¹ by 2030, it is necessary to introduce other measures promoting energy efficiency and energy saving, including the establishment of an electric vehicle charging point infrastructure¹³², introduction of individual thermal energy metering/distribution technologies¹³³, installation of building automation and control systems¹³⁴, installation of incineration plants complying with ecodesign requirements¹³⁵ and other measures identified by different requirements of EU Directives and Regulations. Both the regulatory framework¹³⁶ and the various support instruments must be designed and developed for the implementation of these measures;
- The Ministry of the Economy has prepared a draft Order "On an action plan for measures to improve the technical condition of the housing stock during commissioning", which was announced at a meeting of State Secretaries on 13

¹³¹Insulation of building envelopes, installation of renewable energy technologies, refurbishment/rebuilding of engineering systems

¹³² Pursuant to Article 1(5) of Directive (EU) 2018/844 of the European Parliament and of the Council amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency

¹³³ Pursuant to Article 1(6) of Directive (EU) 2018/2002 of the European Parliament and of the Council amending Directive 2012/27/EU on energy efficiency

¹³⁴ Pursuant to Article 1(7) of Directive (EU) 2018/844 of the European Parliament and of the Council amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency

¹³⁵ Pursuant to Commission Regulation (EU) 2015/1189 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for solid fuel boilers

¹³⁶ In accordance with the requirements of sub-direction of action 1.6 of Annex 4 to the National Energy and Climate Plan of Latvia for 2021-2030

August 2020¹³⁷. This draft order contains a number of measures in the action plan. Measures to promote the energy efficiency of buildings include:

- 1) Encourage access to finance for renovation of buildings and improvement of facilities. As planned, an aid programme has been prepared in the form of a financial instrument for investments to improve the technical condition of housing (including the safety of buildings) and the refurbishment of amenities (including modernisation or replacement of lifts.).
- 2) Introduction of a representative institution for housing communities. As an action to be taken, amendments to the Law on the Management of Residential Buildings have been prepared and submitted, introducing the representative institution of the community of apartment owners, laying down its competences, duties and responsibilities.

Taking into account that the costs of renovating public buildings are higher than in the private sector and it is more difficult to get into order the complex management of a building, since the concentration of activities supported by existing programmes is based on improving the energy efficiency of buildings and it is difficult to find funding to cover ineligible costs within sectors, it is necessary to balance energy efficiency with integrated renewal.

¹³⁷ Available at: <http://tap.mk.gov.lv/lv/mk/tap/?pid=40490750>

3.2 Forecasts and targets for 2040

So far, the biggest financial resources for the renovation of buildings in Latvia have come from European funds to improve energy efficiency in the segment for apartment buildings. At the same time, it should be pointed out that this funding can be very variable, and that the giving of grants cannot serve as the only long-term solution, therefore, it is necessary to take into account existing funding models and the lessons learned, so that on that basis it is possible to offer the most effective and most appropriate solutions for all interested parties. From the point of view of the earmarked funding gap in the buildings renovation sector, it is important to stress that such funding needs cannot be covered by public resources alone. Therefore, a key role in achieving the stated objectives is public-private partnership, the already outlined model of the ESCO service, as well as more actively involving and promoting cooperation with credit institutions in Latvia.

Residential apartment buildings

Forecasting the number of renovated apartment buildings between 2030 and 2040 shows that the number of renovated buildings should increase, taking into account the increased participation by the public in building renovation activities and the increased willingness to live in energy-efficient housing. At the same time, it should be pointed out that, similarly as with the forecast for 2030, if the barriers identified in the Strategy are not addressed in a timely manner, no sharp increase in the number of renovated apartment buildings is expected.

Similar to the target set for the renovation of 30% of apartment buildings by 2030, a further 30% of apartment buildings need to be refurbished by the 2040 target, resulting in a total of 8 100 apartment buildings being renovated. If the proportion of potentially interested house owners ready to implement energy efficiency measures is taken into account, then it is necessary to renovate 4 860 apartment buildings. Consequently, 4 860 apartment buildings are to be identified as a primary objective not only for 2030 but also for 2040.

Public buildings

As already indicated, Latvia's objective for 2030 is to continue the annual renovation of 3% of central government buildings by floor space. This objective should also be pursued in the 2040 perspective. At the same time, it should be noted that such a 3% renewal rate will not be sufficient in the 2050 perspective, so that a parallel solution will be needed to encourage the renovation of public buildings. As for municipal buildings, the ESCO service should also be applied in respect of public buildings. The public sector does not make use of these services, which are the most important mechanism in other countries to support the development of the ESCO market and to present the concept to the public as a positive example and to create trust in the service. At the same time, it would be necessary to consider the need to set up financial instruments specifically to support the ESCO, thereby making this service as effective as possible.

More attention should be paid to cost-efficiency in the renovation of public buildings. As can be seen, until 2020 there are still obstacles identified, such as the framing of priority rankings for buildings. Consequently, the public building segment

also needs to focus more on the obstacles identified so far, as despite the available funding, the renovation process of public buildings is relatively slow.

Municipal buildings

The renovation of municipal buildings in future would require the increased involvement and development of ESCO services. As mentioned above, Latvia has not yet developed template Energy Efficiency Service Contracts for the local government sector, which would allow the conclusion of long-term contracts longer than 5 years. By getting the regulatory framework into order, the involvement of ESCO will also become important in the local government building renovation sector.

Private houses

Statistics about how much and what type of building renovation works are carried out by the public in the private housing segment are not available in Latvia. This is also partly due to the shadow economy, which remunerates labour for the work carried out. At the same time, it should be noted that if a review of the initiatives on fiscal instruments and their application were to be carried out, then a positive trend in the growth of building renovations would be seen precisely in the private housing sector.

On the other hand, in view of the high number of single-dwelling buildings, private houses, the use of fuels with the lowest possible GHG emissions should be encouraged in order to ensure emissions reductions.

3.2.1 Possible support mechanisms for achieving energy efficiency targets for buildings

Possible financial instruments towards climate neutrality

From the point of view of the recipient, traditional grants where public funding is channelled to a programme or project, is attractive, but in this way a part of public capital is withdrawn from circulation. In future, there is a need to focus more on different types of "friendly" loans in combination with sensible grants. For example, instead of continuing to provide large grants, a loan of 100% of the amount needed for construction and supervision costs could be made available. Such a loan would be at low interest rates, thus more favourable to residents. In order to strive for a high level of energy performance of buildings, it would be necessary to set specific energy performance indicators that would also allow a grant to be provided, while encouraging the public to renovate high-quality buildings. At the same time, it should be noted that, according to EU practice, the renovation of apartment buildings without a subsidy does not pay off, i.e. the payback period is 20 years or more.

According to the MoE, part of the financial instruments included in Latvia's strategy to achieve climate neutrality by 2050¹³⁸ could serve as a basis for defining a common policy to limit GHG emissions. Consequently, the following examples should be mentioned:

- to set up a national energy efficiency fund that will provide long-term low-interest loans, to provide special insurance against loan default, or to offer a certain discount on total costs, where energy savings have been demonstrated,

¹³⁸ Information report "Latvia's strategy to achieve climate neutrality by 2050". Available at: https://ec.europa.eu/clima/sites/lts/lts_lv_lv.pdf

or to provide interest-free loans to low-income households. As mentioned above, ALTUM has set up a national energy efficiency fund to support initiatives in the field of energy efficiency. The Fund consists of contributions from parties responsible for the energy efficiency obligation scheme, income from energy efficiency levies, as well as other financial sources. Consequently, Latvia should continue to develop the functioning of such a fund.

- A "blended financial instrument" could be a potentially effective way of attracting private investment, comprising both a grant and a loan component in combination with EU and national sources of finance;
- the principle of revolving funds, which is becoming increasingly popular in the financing of energy efficiency projects, could also be used. Loans and revolving funds enable public capital to return into circulation, which makes it possible to finance new projects. This will facilitate the development of innovative financial engineering instruments;
- in order to ensure the successful and sustainable provision of public services, infrastructure development and maintenance, long-term public-private partnerships must be further developed in a targeted manner, combining and sharing the resources available to them - property, financial means, knowledge and experience, also sharing the risks, investments and benefits associated with the implementation of public-private partnerships.
- when the public sector works on the budgeting of financial instruments, the planned activities need to be closely linked to GHG emissions accounting. There is a lack of reliable, realistic data on GHG emissions and energy savings in order to fully develop the strategy. The introduction of such accounts would make it easier to plan the required savings in the various buildings sectors.
- further development of "green" bonds also plays a key role in the fight against climate change, since it is possible to raise funding or to refinance projects that contribute to the fight against climate change. For investors, it is increasingly important how funds from bonds are used, and "green" bonds are a way to make sustainable investments.

It would also be necessary to establish a financial support mechanism for low-income apartment owners participating in apartment renovation projects. To a large extent, it is the lower-income part of society (including people of retirement age) that refrains from voting in favour of the performance of energy-efficiency works in buildings, because they are not financially protected, given that such building renovation can create additional financial burdens. This issue could also be partly addressed by possible fiscal instruments offered in the future.

Possible fiscal instruments to achieve the targets

Renovation of buildings can be achieved not only by investing public funds, it is also critical to ensure and promote the awareness of owners and the fulfilment of obligations regarding the maintenance of properties. The low incomes of the population hamper timely investment in the maintenance and renovation of buildings, therefore balanced measures are needed that increase the involvement of owners in the proper maintenance of buildings.

The Ministry of the Economy proposes to evaluate the most appropriate support instruments by encouraging owner investment in timely housing maintenance, while tax incentives should only be directed after an evaluation, preferably within the framework of the forthcoming National tax policy guidelines.

The insulation of buildings increases the market value of residential houses and apartments, however, given that owners are required to make long-term financial commitments in order to carry out insulation, additional incentives are needed to prevent owners from having a double burden: financial commitments for the insulation of buildings and increasing tax payments, in addition to regular payments. It should be noted that the OECD study on housing affordability in Latvia¹³⁹ published in 2020 shows that many households in Latvia cannot relocate to quality housing without spending more than 30% of their income.

As described earlier in the Strategy, under heading 2.2 "Policy and activities for the cost-effective and gradual renovation of buildings", municipalities have a statutory delegation to provide for real estate tax allowances at their discretion. In the opinion of the Ministry of the Economy, the application of real estate tax allowances to energy-efficient buildings may serve as one of the tools for achieving building renovation and energy efficiency objectives.

It would also be necessary to evaluate the most efficient and economically justified solutions for tax incentives (e.g. reduced rates of value added tax, income tax incentives, etc.), which would encourage private investment in the timely maintenance of buildings, their energy efficiency.

It should be noted that larger-scale renovation of buildings in the absolute majority of cases is done using credit, while in Latvia there are disproportionately many households owned by people with low income. People with low incomes have difficulties in carrying out large-scale renovation work or taking on credit obligations, so the process is gradual, for example by replacing windows separately, insulating a basement or roof in the next period, and so on. At the same time, it should be acknowledged that in the renovation of buildings a large part of the work is performed by the shadow economy, which also does not contribute to tax revenues. According to the results of the study "Shadow economy in Latvia's construction sector 2015-2019", the construction sector accounts for one of the largest volumes of the shadow economy in Latvia; in 2015 the shadow economy in the construction sector was 40%, but in 2019 it had fallen to 30.7% shrinking by 9.3% over five years. However, the shadow economy remains relatively large in the construction sector.

In order to implement tax incentives, the Ministry of the Economy must evaluate and find solutions for both:

- the fiscal impact of the proposals on state and local government budgets;

¹³⁹ Available at: <http://www.oecd.org/economy/latvia-economic-snapshot/>

- efficiency of tax change administration, control mechanisms, administrative burden for both administrative authorities, and the implementing officers.

In addition to improving the technical condition of the existing housing stock, support is needed to promote the construction of new housing stock in order to replace outdated housing stock. Reduction of the state fee for registering property in the Land Register from the value of the real estate or the amount of the transaction thus reducing costs for the purchase of real estate in Latvia could also be an enabling instrument for investments in new real estate. Problems currently identified in the context of the current framework:

- avoidance of payment of the state fee, indicating a lower amount of real estate transactions;

- in order to avoid payment of the state fee, instead of acquiring real estate, businesses are entering into acquisitions of a business the assets of which include real estate;

- increasing the cost of investment, reducing the mobility of the population and the availability of housing.

Currently, the Land Register's registration fee amounts to 2-6%, which represents a major challenge, both from the point of view of the country's competitiveness with neighbouring countries and of the level of the fee as such. At the same time, it should be noted that a possible negative fiscal impact on the State budget should be assessed in anticipation of the reduction of such state fees, given that a reduction in the amount of the State fee would result in a reduction in the revenue from the fee for the primary budget of the State.

Development of accessible and transparent advisory tools

Despite the fact that the public is actively informed about the opportunities and benefits of building renovation, it should be noted that the amount of information about such opportunities varies and is not available in one place. Without an effective information campaign, it is not possible to reach a greater awareness of the necessity and benefits of the renovation of apartment buildings. It is necessary to raise public awareness of the importance of renovation of apartment buildings; to develop a favourable public opinion regarding the modernisation of apartment buildings; to ensure the availability of detailed, clear and high-quality information for the target audience on the apartment building renovation programme. Providing centralised up-to-date information to residents and businesses could serve as a key element in the circulation of information and in meeting the objectives of improving energy efficiency. In addition, information should be provided to residents in relation to the renovation of residential houses, as well as to entrepreneurs, providing them with the possibility to review their needs in terms of promoting energy efficiency. The main objective would be to set up such a tool already in the period 2020-2030. This requires developing cooperation with other stakeholders and non-governmental organisations in order to provide more effective advice and public motivation.

3.3 Forecasts and targets for 2050

Although GHG emissions are currently stable advancing towards national targets, it should be noted that there is a very active debate within the EU on raising the overall EU GHG emissions target for 2030, and in the event that climate targets at EU level are raised, this will also require raising national target objectives.

The results and tangible benefits (reduction of emissions and thermal energy) of the current state policy for the promotion of energy efficiency of buildings, as well as within the framework of renovation activities of residential, non-residential, including industrial and public buildings, where the project submission process or active construction process is still on-going, are expected only over the next few years, thus the trend in the reduction of thermal energy consumption and GHG emissions in the household sector is expected to be positive.

As stated in Latvia's strategies to achieve climate neutrality by 2050¹⁴⁰, the following common goals for 2050 should be set in the development of a common policy:

- The construction of all new buildings meets the requirements of zero-energy buildings. Residents have been made aware of the benefits of zero-energy buildings, both in terms of energy saving and of a favourable indoor microclimate. The construction of new buildings is subject to strict energy efficiency requirements. By 2050, it has been ensured that all new buildings are constructed as zero-energy buildings. In the construction of zero energy buildings, attention is also paid in the planning to the location of the buildings, the materials used and the building's internal engineering networks.
- The renovation and refurbishment of all buildings meet the requirements of zero-energy or near zero-energy buildings. Reducing emissions is unthinkable without improving the energy efficiency of existing buildings, while at the same preserving historical values. The renovation and conversion of buildings is performed qualitatively, using sustainable materials and efficient technologies and methods. All existing buildings have been renovated or rebuilt to energy performance standards. As one of the biggest challenges to date for the comprehensive renovation of buildings has been limited funding, additional financial instruments have been found.

¹⁴⁰ Available at: https://ec.europa.eu/clima/sites/lts/lts_lv_lv.pdf

Table 18. *In the table, emissions are calculated in kilotonnes (kt)	energy consumption of buildings				GHG emissions generated	
	1990		2017		1990	2017
	TJ	GWh	TJ	GWh	*kt CO₂ equ.	*kt CO₂ equ.
1A1 – thermal energy used	51 339.00	14 169.56	22 030.12	6 080.31	3 555.01	1 250.46
1A4 – fuel used – services, households and other sectors	102 091.96	28 177.38	47 916.56	13 224.97	5 794.15	1 514.65
	153 430.96	42 346.94	69 946.68	19 305.28	9 349.16	2 765.12
1990/2017				-54.41%		-70.42%

As can be seen from Table 18, the reduction in GHG emissions from buildings alone is already around 70% compared to 1990. The amount of GHG emissions for the thermal energy consumed is calculated on the basis of the average thermal energy GHG emission factor in 1990 and in 2017, while for fuel consumption - taking into account the emissions factors in respect of each specific fuel type. At the same time, it should be noted that the available data are approximate, as the 1990 GHG emissions factor is not entirely accurate.

In the building sector, it is necessary to reach - 1 869 kt CO₂ equ. by 2050 (1 869 000 tonnes). Consequently, annual savings in the building sector should be increased by another 896 kt CO₂ (896 000 tonnes) to reach a total savings rate of at least 80%.

The expected annual reduction in GHG emissions in the municipal, national and apartment building sector could total around 111.9 kt of CO₂ (111 933 tonnes)¹⁴¹, which is about one-eighth of the required reduction from the 2050 perspective. In order to reflect an objective assessment of the situation, it is important to emphasise:

- The calculation is based on a situation in which only EU structural funds are used in combination with state funding. As a result, by facilitating the development and implementation of the support mechanisms outlined in the strategy, as well as by removing the obstacles identified, a much higher mobilisation of financial resources can be achieved and the creation of financial instruments.
- the calculation does not include potential savings from industrial buildings (which clearly have a significant contribution to make to reducing total GHG emissions), as most of their energy consumption comes directly from the energy consumption in production processes, so investments are mostly used to increase the energy efficiency of these processes rather than in buildings;
- private homes are not included in the calculation. In the strategy it is already explained that support for the renovation of private houses is expected to start only from 2020, therefore the first objective results are still to be expected. At the same time, it should be noted that, in terms of numbers, private houses constitute a significant majority, thus, by encouraging the promotion of investments in the private housing sector as well, it would be possible to achieve significant thermal energy savings and emissions reductions.

¹⁴¹ Projected savings for 2030 multiplied by 3 (forecast for 2050).

Annex 1

In accordance with Article 2a(6) of the Directive, each Member State shall include in the annex to its long-term renovation strategy more detailed information about the implementation of its most recent long-term renovation strategy, including planned policies and actions.

The following provides information on the current objectives set out in the previous strategy¹⁴²:

The current energy efficiency objectives for buildings are:

1) availability of funding for economically justified projects throughout the territory of Latvia, including regions;

As already discussed in the strategy, under Measure 4.2.1.1, it was possible to renovate residential apartment buildings, which constitute the largest part of all residential buildings in Latvia in terms of area. Under Measure 4.2.2.1, it was possible to receive grants of up to 50%. Since the launch of Measure 4.2.1.1 in the autumn of 2016, 821 project applications have been submitted from all Latvia for a provisional amount of EUR 375 000 000. Consequently, all the funds allocated for grants have been earmarked and as of 11 January of this year new applications for participation in the programme are no longer being accepted by the Development Financial Institution ALTUM.¹⁴³

2) quality project management and monitoring; and

3) focusing monitoring of activities on achieving results, including energy savings;

Cabinet Regulation No 160 "Implementing Provisions of the of the Operational programme's "Growth and Employment" specific support objective's 4.2.1 "Promotion of energy efficiency in public and residential buildings" specific support objective measure 4.2.1.1 "Promotion of energy efficiency in residential buildings"" is supplemented by paragraph 41.1, which states that if the implementation of energy efficiency improvement measures is ensured by an energy efficiency service provider, it shall ensure that the construction operator, field supervisor, construction supervisor and other suppliers who will implement the energy efficiency project comply with the ALTUM requirements. This provision provides that ALTUM will verify that all parties involved in the implementation of the project comply with best practice in accordance with the existing verification procedure of suppliers within the framework of Measure 4.2.1.1, ALTUM will assess the conformity of construction operators and of the offer with the technical documentation, as well as carrying out project supervision, including after completion of the site, in order to verify the conformity of the works carried out with the approved project.

4) achieving high energy efficiency and high-quality construction;

¹⁴² Available at: https://ec.europa.eu/energy/sites/ener/files/documents/lv_building_renov_2017_lv.pdf. P. 58

¹⁴³ <https://www.altum.lv/lv/pakalpojumi/maju-energoefektivitate/daudzdzivoklu-maju-energoefektivitate-pamatinformacija/par-programmu/>

Both measures to improve the energy efficiency of apartment buildings demonstrate the achievement of high energy efficiency. Within the framework of activity 3.4.4.1 "Measures to improve the thermal insulation of residential buildings", which was launched in 2009, implementation of 741 energy efficiency improvement projects has been completed. The thermal energy savings achieved within the framework of the completed projects comprise 30-60% of the previously consumed amount of thermal energy. On the other hand, under Measure 4.2.1.1, when considering the thermal energy consumption of the projects already completed, they show a significant reduction in energy consumption - if before the building renovation the average energy consumption was 165 kWh per annum, then after renovation works it is on average 67% lower or 54 kWh per annum.¹⁴⁴ As a result, the average thermal energy consumption saving is approximately 60% within the framework of both activities.

Similarly, the previous strategy states that, in order to ensure the achievement of the energy efficiency targets, the following measures must be implemented during the 2014-2020 programming period of EU funds:

1) Promotion of the ESCO market;

It should be noted that Chapter 4 of the current strategy describes and contains information on measures that focus directly on the ESCO market and its promotion.

2) It is necessary to further educate potential project applicants and project promoters within the framework of the "Living warmer!" information campaign;

We should point out that the information campaigns are focused not only on project applicants, but in view of the activities carried out in the renovation of buildings, events are currently being organised in Latvian cities, addressing such topics as "Life of buildings after renovation", "Major errors and recommendations for the renovation of buildings".¹⁴⁵ There have also been many seminars in which discussions have been held on topical issues in the field of the energy efficiency of buildings. The reports regarding 2017-2019 can be consulted on the MoE website.¹⁴⁶

In addition to the measures to promote the energy efficiency of buildings, the previous strategy provides for a regular review of the minimum energy efficiency requirements for buildings (for construction elements of external envelopes of the building and for engineering systems of the building).

We would like to inform you that changes have been made to the thermal technical requirements of building envelopes, which entered into force on 1 January 2020¹⁴⁷ and replace Latvian construction standard LBN 002-15 "Thermal engineering for building envelopes".

Requirements from 2021 onwards regarding minimum levels of energy efficiency of buildings, assessment of energy efficiency for heating, renovations and conversions have been strengthened, because:

1) Directive 2010/31/EU provides that the State encourages the transformation of buildings to be refurbished into near zero-energy buildings;

¹⁴⁴ Information as at December 2019.

¹⁴⁵ Available at: https://em.gov.lv/lv/es_fondi/dzivo_siltak/pasakumi/

¹⁴⁶ Available at: https://em.gov.lv/lv/es_fondi/dzivo_siltak/pasakumi/

¹⁴⁷ Regulation on Latvian Construction standard LBN 002-19 "Thermal engineering for building envelopes" Available at: <https://likumi.lv/ta/id/307966>

2) Decarbonisation targets for buildings must be achieved by 2050.

Annex 2

Each Member State shall conduct a public consultation on its long-term renovation strategy before submitting it to the Commission. Each Member State shall annex a summary of the results of its public consultation to its long-term renovation strategy. As public consultations can improve policy outcomes, these are mandatory, although each Member State is entitled to establish its own format for consultation.

The Ministry of the Economy posted a long-term strategy for the renovation of buildings on the website of the Ministry of the Economy to ensure public participation.

Given the low level of public activity, the long-term strategy for building renovation was put forward to be announced at a meeting of state secretaries. Consequently, views were received on the long-term strategy for building renovation from the Ministry of Justice, the Ministry of Finance, the Ministry of Defence, the Ministry of the Interior, the Ministry of Welfare, the Ministry of Environmental Protection and Regional Development, the Ministry of Agriculture, the Cross-Government Coordination Centre, the Latvian Association of Local and Regional Governments, the Free Trade Union Confederation of Latvia, the Employers' Confederation of Latvia and the State Audit Office. The Association of Regional Development Centres, the Latvian Chamber of Commerce and Industry, the Association of Large Cities of Latvia, the Latvian Association of Small and Medium-sized Enterprises, and the Association of the Financial Sector also expressed their views.

In principle, the views expressed by all providers of official opinions were taken into account, though the recommendations of the Latvian Association of Small and Medium-sized Enterprises, for example, deserve special mention. According to the Association, a section on RES, including the use of geothermal and solar energy in the renovation of suitable buildings, should be included in the long-term strategy for the renovation of buildings. The Association notes that Latvia has large geothermal energy resources that can be used in the renovation process. Geothermal heating in an apartment building makes it possible not only to use geothermal energy, but also to convert it into an air cooling unit using passive cooling technology. Shallow geothermal energy is a heat production method widely used in many countries around the world and in the last decade has been introduced in Lithuania. This heat production method uses heated ground and shallow water under pressure, accumulating stored heat using heat pumps. Heat pump technology has been well established in many countries as a reliable, cost-effective and environmentally friendly alternative to conventional heating systems. These days, more than 750 000 systems are installed in Europe every year, and around 4.5 million systems have been deployed since 2005. It is also possible to install solar panels on the roof or walls of apartment buildings; these absorb and channel solar heat into each water preparation system. In addition to solar panels for water heating, solar cells can also be used for electricity production.

The Association also points out, with regard to the development of possible financial instruments, that it is possible to create an innovative financial engineering instrument in Latvia, such as a fund of raised resources and other models in cooperation with international financial institutions, with the aim of attracting more financial resources for the renovation of apartment buildings. Such funds operate in Lithuania as well as in Polish municipalities and elsewhere.

According to the Latvian Association of Small and Medium-sized Enterprises, 4 different types of renovation should be defined:

- renovation of "blocks", which would include not only the renovation of apartment buildings, but also the improvement of the environment, such as "green areas", car parks, reconstruction and development of children playgrounds, etc. As part of the renovation of a block, the cost of construction will be lower than renovating a separate house/object, moreover, the possibility that in the course of renovating a house the surrounding environment will also be improved, is an additional motivating factor for residents;

Green renovation – using RES (shallow geothermal, solar panels/batteries, ground source heat pump together with solar panels, a.o. innovative technical solutions);

- "major renovation" – a complete renovation of the building takes place;
- "small renovation" - based on the principle that only the most effective renovation measures are carried out with the fastest returns (e.g. Lithuania grants a 30% subsidy only for the modernisation of heating and hot water systems of an apartment).

Thus, the population would be provided with alternatives as to which form of renovation to choose, as well as the strategic directions of renovations would be established at national level.