

Capital Raising Plan for Energy Efficiency and Renewable Energy Projects in Latvia

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Abstract

The present Capital Raising Plan (CRP) aims to identify potential sources of funding and financial instruments available to achieve the energy and climate targets of Latvia by 2030. This plan is required because market imperfections (barriers), asymmetric information, and other market disruptions prevent the optimal allocation of financial resources to climate adaptation and mitigation projects. The plan discusses investment needs to achieve energy and climate targets of the country by 2030 and provides information on key barriers to address these needs. The plan also provides information on potential sources of funding with the estimated amounts of capital available from public and private sources (national and international) to finance a low-emission, climate-resilient development pathway as defined under the National Energy and Climate Plans (NECP), as well as gives policy recommendations for accessing such funding.

Background information about the Climate Investment Capacity project (CIC2030)

According to the Regulation (EU) 2018/1999 of the European Parliament and the Council on the Governance of the Energy Union, each Member State prepared a NECP for the period of 2021–2030, setting out the new energy and climate targets. To achieve the energy and climate targets, investments for the implementation of energy efficiency and renewable energy projects should be mobilized. Policymakers, scientists from the Riga Technical University (RTU, Latvia), the Czech Technical University in Prague (CVUT, Czechia), and the Institute for Climate Protection, Energy and Mobility (IKEM, Germany) collaborated under the CIC2030 project to track climate investment flows, assess the climate investment gap, and develop capital raising plans for the achievement of the energy and climate targets.

Disclaimer

The current CIC2030 project is part of the European Climate Initiative (EUKI – www.euki.de). The EUKI is a project financing instrument by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). It is the overarching goal of the EUKI to foster climate cooperation within the European Union and reduce greenhouse gas emissions. The findings referred to in this report express the opinion and responsibility of the authors solely and do not necessarily reflect the views of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

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Abbreviations

ALTUM	Latvian Development Finance Institution <i>ALTUM</i>
CIC2030	Project “Climate Investment Capacity 2030”
CRP	Capital Raising Plan
EBRD	European Bank for Reconstruction and Development
EE	Energy efficiency
ETS	Emissions trading scheme
FM	Ministry of Finance
EM	Ministry of Economics
EIB	European Investment Bank
ELENA	European Local Energy Assistance
EPC	Energy Performance Contracting
ESCO	Energy Service Companies
ESIF	European Structural and Investment Funds
ERDF	European Regional Development Fund
ETS	EU Emission Trading Scheme
EU	European Union
EIB	European Investment Bank
JESSICA	Joint European Support for Sustainable Investment in City Areas
GDP	Gross Domestic Product
GHG	Greenhouse gas emissions
LVIF	Latvian Environmental Investment Fund Ltd.
LABEEF	Latvian Baltic Energy Efficiency Facility
LIFE	L’Instrument Financier pour l’Environnement
LULUCF	Land use, land-use change and forestry
MFF	Multiannual Financial Framework
NECP	National Energy and Climate Plan for 2021–2030
RES	Renewable energy sources

RRF	Recovery and Resilience Facility
RTU	Riga Technical University
PDA	Project Development Assistance
PF4EE	Private Finance for Energy Efficiency Instrument
VARAM	Ministry of Environmental Protection and Regional Development
WACC	Weighted Average Cost of Capital

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Executive Summary

The Capital Raising Plan (CRP) aims to provide recommendations which help to mobilize capital for the projects addressing targets of the Latvian National Energy and Climate Plan (NECP). It is the third publication in a series of reports. The first report calculated the recent investment flows in climate and energy projects of Latvia¹. The second report assessed investment needs to reach the country's energy and climate targets for 2030². The primary target group of the reports is ministries and stakeholders that are responsible for the NECP implementation, namely, the Ministry of Economics, the Ministry of Finance, and the Ministry of Environmental Protection and Regional Development, financiers and NGOs.

Latvia is slightly behind its required level of investment in terms of the energy efficiency and renewable energy projects. The NECP estimated that Latvia needs to invest EUR 8.2 billion over the next ten years or ca. EUR 819 million per year to achieve its 2030 energy and climate targets. The share of the required investment **addressing energy efficiency and renewable energy part of commitments is ca. EUR 4.45 billion**. The Climate and Energy Investment Map for Latvia prepared in our second report and presented in Figure 1 shows that in 2018, at least EUR 190 million were invested in energy efficiency measures for the buildings sector and the industry, whereas EUR 41 million was invested in renewable energy projects. For this reason, **Latvia needs to double its investment flows in order to achieve the NECP targets in these sectors** (excluding renewable energy investment in the transport sector). The challenge is particularly critical for renewable energy because in 2018, the corresponding investment was nearly five times lower than that in the energy efficiency projects. Given the current investment flow in the renewable energy sector (EUR 41 million in 2018) and the required investment volume (ca. EUR 371 million per year based on the NECP forecasts), **Latvia must increase its investment in renewable energy sources by a factor of nine**. Recently, the European Commission prepared a new proposal for the EU climate and energy targets, calling for even higher investment. If it is adopted, the investment needs, and the subsequent investment gap will be even bigger.

Available sources to address the investment gap include revenues from selling emissions allowances through the EU ETS, subsidies available from the Modernization Fund and Next Generation EU, and the European Regional Development Fund (ERDF), as well as lending from the Latvian Development Finance Institution ALTUM and the European Investment Bank (EIB). Cumulatively, these sources may provide **EUR 1.81 billion** for financing energy efficiency and renewable energy projects over the next 10 years. Hence, assessment of the required investment and the available sources of funding shows **an actual shortage of approx. EUR 2.63 billion in the next 10 years**, which has to be tackled by attracting more private and national budget investment.

There are several barriers which hinder the development and implementation of energy efficiency and renewable energy projects and, consequently, the likelihood of closing the investment gap. Households, municipalities, and businesses are often not aware of the possibilities of such projects; likewise, they have poor understanding of their non-energy benefits. A typical obstacle of these projects is that there is a large number of them, and some are of a very small scale. Industry operators and municipalities lack the necessary technical, organizational, legal and financial capacity for their identification, development and implementation. Even if apartment owners of multi-residential buildings are interested, they face a complicated decision-making process and logistics of accessing public subsidies. The Latvian market also

¹ Kamenders, A., Rochas, C., Novikova, A., "Investments in Energy Efficiency and Renewable Energy Projects in Latvia in 2018", Riga Technical University (RTU), November 2019.

² Kamenders, A., Rochas, C., Juergens, I., Rusnok, D., "Nepieciešamās investīcijas Latvijas enerģētikas un klimata mērķu 2030 izpildei", Rīgas Tehniskā universitāte (RTU), 2020. gada februāris

lacks enabling market structures such as energy service companies, energy consultancies, and energy auditors. The beneficiaries therefore have to assume high transaction costs and fees for the project development, even before they start the implementation.

There are also many different kinds of financial barriers. Long-term planning horizon is a key success factor for the energy efficiency and renewable energy programmes. Analyses of barriers and lessons learned allows to learn to utilize the instruments and become more mature, bringing on-board both, the private and financial sectors, and to deal with the myriad of challenges. It also helps to provide a long-term call to the construction and technology market, which will allow to build their capacity in terms of labour and technological availability. In this regard, Latvia's challenges are the lack of long-term financing and institutional and policy reform recognizing the value and benefits of long-term investment strategies. Besides, Latvia only provides access to grant-based support (non-linearity for support), and it does not have sufficient financial vehicles and/or financial instruments for energy efficiency and renewable energy projects.

Finally, Latvia faces a range of legal barriers. These include a lack of clear allocation of responsibilities to achieve common energy climate goals and, in particular, a lack of stable renewable energy policy frameworks and policy direction. The latter is extremely critical, as there is a very large investment gap between the required and actual investment in renewable energy projects, as discussed above.

The table below provides a summary of barriers and our recommendations for overcoming them.

Table: Key barriers and policy recommendations for overcoming such shortcomings

<p>Information barriers</p>	<p>Recommendation 1:</p> <ul style="list-style-type: none"> • Invest in cooperation and exchange of information between universities and policy makers, including the Riga Technical University, the State Construction Control Bureau, the Latvian Environmental Investment Fund (LVIF), ALTUM, and the Ministry of Economics. • In co-operation with other stakeholders, establish a centralized information hub and convening body. The State Construction Control Bureau of Latvia might assume the leading role. • Disclose information of the existing building information system containing information about audits performed for large energy consumers and large companies for the purpose of developing benchmarks and energy efficiency indicators, funding for R&D, etc. • Share information about the achievements of the multi-apartment building programme managed by ALTUM, including costs, energy savings and results of the existing projects among building management companies, municipalities, professional associations, and financiers. <p>Recommendation 2</p> <ul style="list-style-type: none"> • Stimulate a broader discussion at the political level and in general media about non-energy benefits of energy efficiency and renewable energy projects and take them into consideration during strategic decision-making. • Analyze the motivation of project beneficiaries to implement energy efficiency and renewable energy projects listed in the ALTUM database and develop an information campaign. • Perform regular assessment of recent investment flows in the project and how they close the investment gap known in order to revise subsidy schemes on a regular basis that way adjusting the overperforming and underperforming measures.
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Lack of capacity

Recommendation 3

For the industry sector and municipalities:

- Design and implement a Project Development Assistance (PDA) programme which provides funding for the project development for potential beneficiaries of the industry sector and municipalities, based on the experience of an administrated technical assistance programme for energy efficiency and renewable energy project development from ALTUM. The PDA programme should develop a simple fast-track application process and easy access to a pool of energy efficiency experts and project managers. It should be developed together with long-term financing instruments, benchmarks and standardized investment packages for different client needs; it also shall be developed as a part of subsidy programmes, rather than their parallel structure. For more details, see the experiences of Slovakia and Lithuania. The PDA programme may use the resources of ELENA (strengthening the European Local Energy Assistance), Joint European Support for Sustainable Investment in City Areas (JESSICA), and the Resilience and Recovery Fund.
- Develop more standardized solutions based on the existing experience and results from other projects. Standardize technical solutions and analytical tools (ready to use excel spreadsheets, benchmarking tools) that could be provided for project developers.
- Involve the Latvian Chamber of Commerce and Industry and the Latvian Association of Local and Regional Governments as “co-owners” of the technical assistance and project development programme that will help to ensure active involvement of project developers and address their needs.

Recommendation 4

For residential and municipal building sectors:

- Assign the leading role of managing projects to building management companies, municipalities, professional project managers and ESCOs.
- Ensure that the Law on Residential Properties enforces the responsibilities of flat owners to ensure compliance with the minimum requirements for energy efficiency. Allocate the responsibility of compliance monitoring to the State Construction Control Bureau of Latvia and the Ministry of Economics.
- Facilitate project administration, transfer the functions of project supervision and quality control to the right institutions, such as the State Construction Bureau.
- Create local ‘one-stop-shops’ or dedicated services. A large variety of market operators can be involved in project development assistance activities including local and regional authorities, ESCOs, banks, energy agencies or utilities, usually with a local or regional scope.
- Encourage housing management agencies to initiate and manage energy efficiency investment for a large number of buildings and provide lower-income homeowners with grants covering up to 100% of the costs. Introduce means-tested tax incentives for the refurbishment of basic technologies.
- Introduce off-balance sheet solutions to develop ESCO projects in the municipal and state building sector. The Ministry of Economics is working on the EPC model contract according to the EUROSTAT guidelines. The work should be continued with the development of procurement documentation and guidelines for municipalities and state institutions.
- Include utilities in planning and implementation arrangements. The funding available through the building renovation programmes can be used by the consumers, where obliged parties should coordinate the implementation of energy efficiency measures. The obliged parties are motivated to steer residential consumers into these

	<p>programmes through marketing and sales, and by supporting implementation.</p> <p>Recommendation 5</p> <ul style="list-style-type: none"> • Establish promotional training and a pool of independent, high-quality technical experts, alongside with the development of the technical assistance as described above. • Establish training and regular certification systems for energy auditors and project developers.
<p>Technical barriers</p>	<p>Recommendation 6</p> <ul style="list-style-type: none"> • Provide energy efficiency benchmarks and “quick tools” for project developers for testing project ideas based on the real-world data. Develop energy efficiency benchmarks for companies and buildings using the national building information system. Create guidelines for project implementers using energy audits submitted by energy auditors, monitoring data, and information about the implemented projects (see Recommendation 1). • Provide training and upskilling of energy auditors and energy managers, introduce regular certification schemes for the building sector specialists. <p>Recommendation 7</p> <ul style="list-style-type: none"> • Consider the investment needs and possibilities to develop new projects in the overall economic environment, and the possibilities to develop new technologies in the field of energy efficiency and renewable energy. • Assess the opportunities of supporting local producers of energy efficiency and renewable energy technologies. Although such support is to a large extent constrained by the EU State Aid legislation, there are still many ways to stimulate local producers, for instance, through public procurements, reduced taxation as part of the COVID-2019 recovery package, and the like.
<p>Financial barriers</p>	<p>Recommendation 8</p> <ul style="list-style-type: none"> • Standardize the investment cycle in energy efficiency so that both, the supply and demand side of the funding scheme, know what to expect. • Develop loan schemes with a grant component by public financing institutions. Assign the responsibility to develop sustainable financial instruments to the responsible ministries – the Ministry of Economics, the Ministry of Environment and Regional Development, and the Ministry of Finance. • Consider the EU support 2021–2027 and the ETS to attract private capital instead of continuing the same programmes with minor improvements. • Target investment grants only at very specific (sub) sectors (e.g. vulnerable households) and measures (e.g. innovative technologies). Alternatively, grants should serve as an additional/accompanying support mechanism rather than a stand-alone measure. • Take into consideration such fiscal instruments as carbon tax and tax rebates. Tax rebates for the commercial/industry sector may provide much clearer and cleaner incentive with a potentially lower administrative burden. At the same time, supporting instruments to compensate for potential negative distributional effects must accompany any form of fiscal instruments. <p>Recommendation 9</p> <ul style="list-style-type: none"> • Expand green bonds using national financial institutions like ALTUM, national utility company <i>LATVENERGO</i> and other special-purpose private investment funds. The long-term financing instruments need to be combined with technical assistance for project development. • Expand instruments for the private rental market, including support for accessing the long-term funding and support for private project developers accelerating the

	<p>construction of new residential buildings, that are currently planned by the Ministry of Economics, as well as for the renovation of the existing building stock.</p> <p>Recommendation 10</p> <ul style="list-style-type: none"> • Provide early-stage funding for long-term and low-interest investment funding schemes with technical assistance for project preparation. National or regional governments should introduce dedicated finance support schemes for energy communities to help them during the planning and project set-up phases. Early-stage funding is essential for conducting feasibility studies and accessing specialist consultancy services that can transform an idea into an easy-to-implement project plan. Provide long-term and low-interest investment funding schemes. <p>Recommendation 11</p> <ul style="list-style-type: none"> • Introduce green taxes and tax rebates for energy efficiency and renewable energy projects. Energy is relatively cheap, as compared to the annualized costs of advanced technologies. At present, the VAT on energy sales is 12%, whereas energy efficiency measures are subject to VAT 21%. Apply lower tax on energy efficiency projects.
<p>Regulatory barriers</p>	<p>Recommendation 12</p> <ul style="list-style-type: none"> • Plan and develop guidelines and legal norms (for example, considering cooperatives as possible project owners) that would allow local municipalities/residents to get involved in wind projects and share benefits. • Introduce a tax reduction scheme for co-owned energy production (for example, wind cooperatives). • Remove tax for self-produced electricity consumed within own property (currently there is a limit of the micro-generation volume). <p>Recommendation 13</p> <ul style="list-style-type: none"> • Set sector-specific emission reduction targets. Even though setting targets for different sectors is a politically difficult task, it will allow sectors to mobilize and carry out the necessary reforms — binding targets with a “carrot and stick” approach.

1. Introduction

Meeting the targets set by the National Energy and Climate Plan of Latvia (NECP) will require massive investment in climate projects and innovative technologies. Hence, the question is where the money will come from and what prevents that investment from taking place today. The Capital Raising Plan (CRP) of Latvia aims to identify potential sources of funding and financial instruments available to achieve the energy and climate targets of Latvia by 2030. It is the third publication in a series of reports, with the first one tracking the recent investment into energy transition of Latvia³ and the second one discussing investment needs to reach the country's energy and climate targets for 2030⁴.

In the CRP, we provide policy recommendation which may help to mobilize capital from public and private sources, both national and international, to finance energy efficiency and renewable energy projects in accordance with the NECP targets. The primary target group of this report is ministries and stakeholders that are responsible for the NECP implementation, namely, the Ministry of Economics, the Ministry of Finance, and the Ministry of Environmental Protection and Regional Development, financiers and NGOs.

Our recommendations were prepared based on the literature review and structured expert interviews. The interviewees were selected from the NECP-relevant ministries (the Ministry of Economics, and the Ministry of the Environment and Regional Development), financial institutions (the Latvian Development Finance Institution (ALTUM), the European Bank for Reconstruction and Development (EBRD), and the Latvian Environmental Investment Fund (LVIF)), project developers (municipalities and energy services companies (ESCOs)), and NGOs (e.g. the Latvian Forest Industry Federation). We used the interviews to obtain an in-depth view of particular challenges, as well as a broad, country-based perspective. The literature review helped to identify financing opportunities and lessons learned from the financing and policy instruments used to attract more private investment, in particular, from other countries. The most important long-term national planning documents for energy efficiency and renewable energy projects were “Sustainable Development Strategy of Latvia until 2030”, “The new Latvian National Energy and Climate plan 2021-2030”, and “The highest national-level medium-term development planning document “Latvian National Development Plan 2014-2020””.

Following the introduction, Chapter 2 starts with a review of the investments needs in order to reach the NECP targets. Chapter 3 presents a capital raising plan for energy efficiency projects and Chapter 4 presents a capital raising plan for renewable energy projects. Both these chapters discuss main barriers to develop and finance new projects, assess the possible sources of their funding, and provide recommendations for their de-risking. Chapter 5 summarizes and further develops these recommendations.

³ Kamenders, A., Rochas, C., Novikova, A., “Investments in Energy Efficiency and Renewable Energy Projects in Latvia in 2018”, Riga Technical University (RTU), November 2019.

⁴ Kamenders, A., Rochas, C., Juergens, I., Rusnok, D., “Nepieciešamās investīcijas Latvijas enerģētikas un klimata mērķu 2030 izpildei”, Rīgas Tehniskā universitāte (RTU), 2020. gada februāris

2. Investment Needs and Sources

2.1. Climate and Energy Targets

The most important sources of greenhouse gas (GHG) emissions in Latvia in 2018 were the **energy sector (37%)**, **transport (28.6%)** and **agriculture (22.3%)**. From the agriculture sector's GHG emissions, the use of soils account for 59.3%.⁵ In terms of final energy consumption, according to the central statistical bureau of Latvia in 2019, the most significant sectors are **transport (31%)**, **households (28.4%)**, and **industry (21.9%)**. Other sectors such as commercial, public, agriculture, energy together account for 20% of the final energy consumption.

The primary energy sources for Latvia are biofuels (38%), oil (34%), and natural gas (26%). Latvia has a high share of biomass (around 30%) in the primary energy supply and a significant percentage of hydropower in electricity production (usually more than 50%, however, this largely depends on weather conditions and amount of water in the river Daugava). Latvia has three large hydropower plants, which form around half of the total installed electrical capacity. However, the rest of the electricity is mainly produced using natural gas. Historically, Latvia has been receiving all its natural gas from Russia. Currently, the gas market is under liberalization and alternative gas supplies for large gas consumers are available through connection to Lithuania. In recent years, biomass has replaced fossil fuels in electricity and heat generation, but the share of oil has remained high and at present reaches 34% in primary energy consumption due to the increasing transport volumes.

Following the EU decarbonisation pathways, the main NECP 2030⁶ targets set for Latvia are:

- A 50% share of renewable energy sources in the final energy consumption – which means a ten-percentage point increase compared to 2020;
- A 7% share of renewable energy in the final energy consumption in the transport sector;
- The mandatory national energy efficiency target is defined as the cumulative savings of the final energy consumption, being 73.7 PJ or 20,472 GWh. Latvia must annually provide new savings of 0.8 % from the annual final energy consumption, by estimating it as the average indicator from the last three years before January 1, 2019. This means a reduction of energy consumption by approx. 15%;
- A 6% reduction in emissions, not covered by the EU Emission Trading Scheme (non-ETS GHG emissions) compared to 2005, and removal of at least 3.1 million tonnes of CO₂ units in the land use, land-use change and forestry (LULUCF) accounting categories.
- A total reduction of GHG emissions by 65% in 2030, compared to 1990.

Although a set of targets is sent by the NECP, it lacks more specific and binding targets for different sectors, which would provide guidance and directions for them.

⁵ 2020. gadā iesniegtās siltumnīcefekta gāzu inventarizācijas kopsavilkums, https://www.meteo.lv/fs/CKFinderJava/userfiles/files/Vide/Klimats/Majas_lapai_LVGM_2020_seginvkopsavilkums.pdf

⁶ Latvia's National Energy and Climate Plan 2021–2030, Riga, 2020 (https://ec.europa.eu/energy/sites/ener/files/documents/lv_final_necp_main_en.pdf)

2.2. Investment Need and Current Investment

The NECP estimated that over the next ten years EUR 8.2 billion or ca. EUR 819 million per year is needed to achieve Latvia's 2030 energy and climate target. Table 1 provides an overview of this estimate, with a breakdown by policy and/or measure area.

Table 1. Investment needs (2021–2030)

Measures	million EUR
Horizontal measures	418
Energy efficiency in buildings	1,730
Energy efficiency and renewable energy in district heating and industry	1,663
Renewable energy in the electricity sector	1,057
Prosumerism (energy end-users who produce renewable energy)	2
Renewable energy in transport	989
Energy modernization of infrastructure	830
Improving the efficiency of waste and wastewater management	595
Reduction of GHG emissions in agriculture	718
Land-use change and forestry	188
Reducing the use of fluorinated greenhouse gases (F-gases)	0.043
Greening of taxes (tax system and improvement of friendliness to energy efficiency and renewable energy technologies)	0.03
Information	2
Total	8,192

The estimates are valid as of January 2020, when the NECP was issued, and it should be noted that there will be significant deviations from it. For example, already in March 2020, i.e. two months after its approval, it was announced that the Latvian Railway “Latvijas Dzelzceļš” would not implement a railway electrification project of around EUR 44 million. The project was designed to attract funds from the EU budget and the European Investment Bank⁷. Railway consumes 4.8 % of the total energy consumption in the transport sector. It was planned that transition from diesel to electric railway will significantly reduce the use of fossil energy sources, and the government estimated CO₂ reductions of up to 45,126 tCO₂/yr.

⁷ <https://www.lsm.lv/raksts/zinas/ekonomika/latvijas-dzelzcelis-izbeigs-dzelzcela-tikla-elektifikacijas-projektu.a352922/>

The Climate and Energy Investment Map for Latvia⁸ (see Figure 1) was prepared to understand how well Latvia manages to meet its energy and climate investment needs. It shows that in 2018, at least **EUR 190 million were invested in energy efficiency measures for the buildings and the industry sector, whereas EUR 41 million was invested in renewable energy projects. Hence, the map identified a total of at least EUR 231 million of sustainable investments in that year.** EU grants contributed to 42% of energy transition and climate investment in Latvia, 29% was attracted from private sector, and 29% was financed from the national budget.

As concerns the **energy efficiency and renewable energy sectors within the NECP**, approx. **EUR 4,45 million** would be needed (excluding investment in renewable energy in transport and energy modernization of infrastructure), to achieve the 2030 targets. In other words: **Latvia needs to at least double the currently observed investment flows in both sectors** (EUR 231 million per year, see Figure 1) in order to achieve the NECP targets (excluding renewable energy investments in the transport sector).

In 2018, the investment in renewable energy sources was nearly five times lower than that in energy efficiency projects. The challenge to meet the NECP targets in Latvia becomes obvious when comparing current investment flows in the renewable energy sector (EUR 41 million in 2018) and the required investment volume (ca. EUR 371 million per year based on the NECP forecasts, if the investment needs are divided equally over all 10 years). In other words, **Latvia must increase its investment in renewable energy sources by a factor of 9.**

As it can be seen from the climate and energy investment map (Figure 1), the largest part of investment (42%) contributes to the improvement of energy efficiency of public buildings. Based on the analysis of technologies and projects that have received investment, it can be concluded that such investment was mainly used for the building renovation projects, whereas in the renewable energy sector investments were made mostly in bio-energy projects.⁹

Recently, the European Commission prepared a new proposal for the EU climate and energy targets, which calls for the EU's 2030 GHG emission reduction target to be raised to at least 55% in 2030, compared to 1990. The current EU target is significantly lower, i.e. reduction of 40% by 2030. For this reason, in case the proposal with higher ambitions is adopted, the investment needs and the subsequent investment gap will be even bigger.¹⁰

⁸ Kamenders A., Rochas C., Novikova. A., "Investments in Energy Efficiency and Renewable Energy Projects in Latvia in 2018", Riga Technical University (RTU), November 2019.

⁹ Ibid

¹⁰ https://ec.europa.eu/clima/sites/clima/files/eu-climate-action/docs/impact_en.pdf

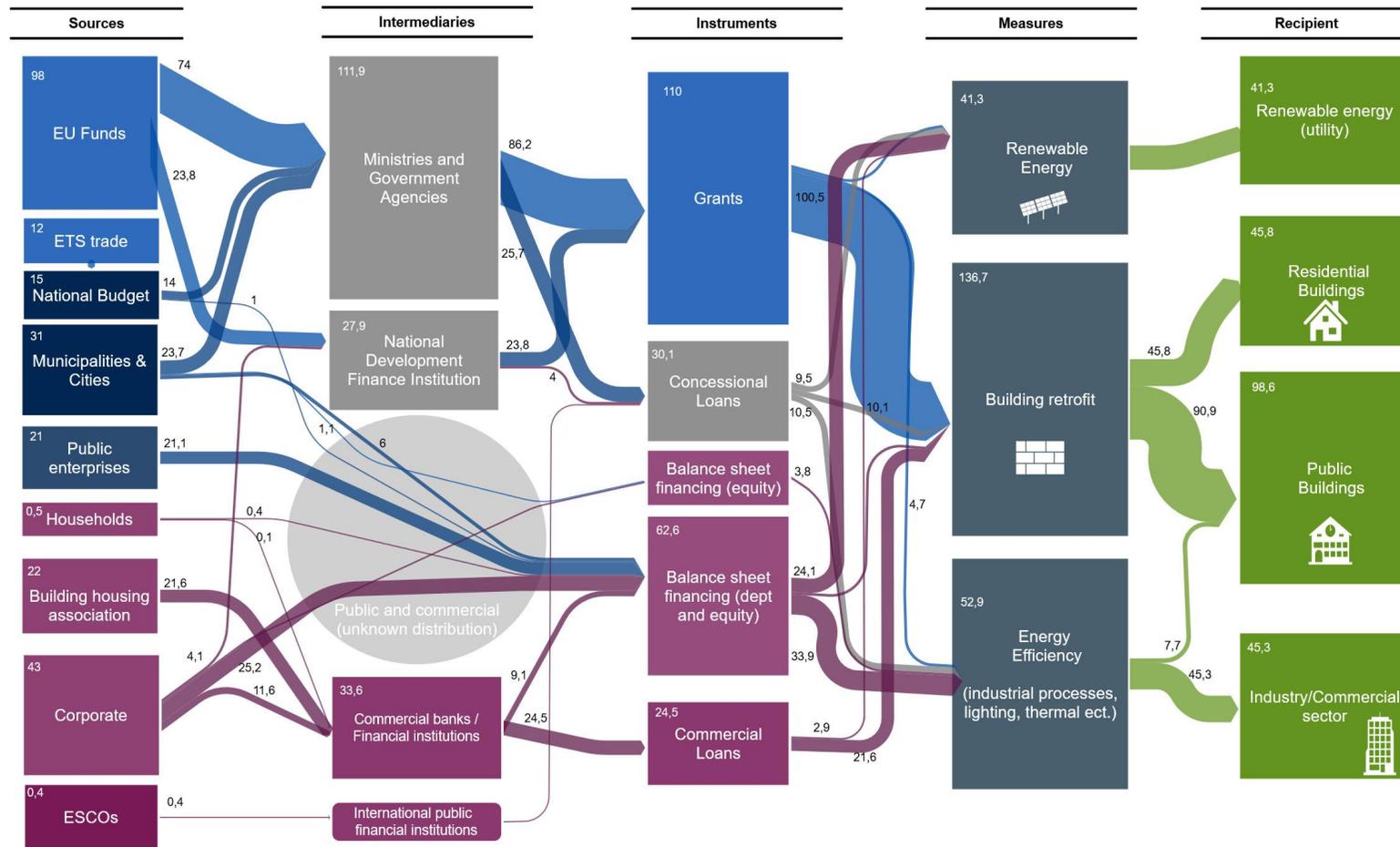


Figure 1: Energy and climate investment map for Latvia 2018: the energy industry, buildings and businesses (in million EUR)

Despite the progress in the field of sustainable energy and energy efficiency, Latvia needs more investment for climate projects. This is confirmed by the European Commission's latest European Semester country report recommendations which suggested several areas where there would be a need for more targeted policy.¹¹

European Semester, the Council Recommendation

'despite low national financing, 'some progress' has been achieved in investing in innovation, transport and digital infrastructure, while housing and environmentally minded policies have not yet been established. Since 2012, Latvia has been recommended to expand its investments in R&D, but funding plans have not materialized'

and

'Plans to develop an environmentally sustainable energy and transportation network have not yet been devised'

and

'In 2018, Latvia's share of renewable energy was 40.3%, thus reaching its 2020 target. However, maintaining the renewables share at this level will remain a challenge. In 2018, Latvia's primary energy consumption increased to 4.7 from 4.5 Mtoe in 2017. Final energy consumption also increased from 4.0 Mtoe to 4.2 Mtoe. Given the current trend, Latvia is at some risk of missing its 2020 energy efficiency target, particularly for final energy consumption.'

Likewise, in our initial study¹², we concluded that in Latvia, investments in the renewable energy have been put on hold, and comparing with the investment needs, there is a large investment gap in the renewable energy sector in particular. Investment in buildings can be mainly observed in public buildings thanks to the EU grants and a loan from the Treasury as the means of co-financing for the renovation of public buildings.

2.3. Sources of Investment Defined in the NECP

According to Latvia's NECP, the main sources to finance the 2030 targets are national and municipal budgets, the EU funds, revenues from the EU ETS, and private investment. There is no breakdown indicated between these sources. We can note that Latvia's NECP includes scattered references to investment needs, expenditures, and funding sources for certain objectives and policies and measures.

In the NECP, it has been estimated that the additional costs to achieve climate targets will amount to ca. 0.35%¹³ of the country's annual GDP. However, the overall benefits of reduced energy imports,

¹¹ Communion Staff Working Document, Country Report Latvia 2020, 2020 European Semester: Assessment of Progress on Structural Reforms, Prevention and Correction of Macroeconomic Imbalances, and Results of In-depth Reviews under Regulation (EU) No 1176/201, 2020 https://ec.europa.eu/info/sites/info/files/2020-european_semester_country-report-latvia_en.pdf

¹² Kamenders, A., Rochas, C., Novikova, A., "Investments in Energy Efficiency and Renewable Energy Projects in Latvia in 2018", Riga Technical University (RTU), November 2019.

¹³ NECP 2021–2030

the positive effects of new jobs and the multiplier effects of additional investment could offset the additional costs. With regard to the positive employment effects, the NECP estimates that energy efficiency measures can provide up to 2.100 new direct and 3.150 indirect jobs on average per year over the period of 2021 to 2030. The introduction of additional renewable energy capacity by 2030 could provide up to 2.500 new direct jobs and up to 5.500 indirect jobs.⁷

2.3.1. Source 1: Selling Emission Allowances

Initially, it was estimated that in the period from 2021 to 2030, Latvia would auction approximately 16 million EU emission allowances¹⁴, and emission trading system could provide **EUR 500 to 750 million** (depending on the European emission allowance price, among other factors). The total number of emission allowances to auction is uncertain, as the emission trading plan for Latvia has not yet been approved. For our analyses, we estimated that approximately 60% of the earnings received from the auctions will be used to finance energy efficiency and renewable energy projects, comprising EUR 375 million. Even though it is too early to know how this money will be disbursed and what kind of financial instruments will be used, if any, we assumed that most of the support programmes that were used in 2014-2020 will be continued in a similar way also during the next planning period. Therefore, we assumed that those investments would mobilize private investment as co-financing for the same amount (conservative mobilization rate of 1:1).

Amount available for climate projects in Latvia from source 1:	EUR 375 million
Mobilized from the private sector as co-financing:	EUR 375 million
Total amount available for climate projects in Latvia from source 1:	EUR 750 million

2.3.2. Source 2: Modernization Fund

In the context of emissions trading mechanism, the **Modernization Fund** will also be available for financing climate projects. The Modernization Fund is funded from revenues from the auctioning of 2% of the total allowances for 2021–2030. The Modernization Fund will be available to finance energy efficiency improvement and energy sector modernization projects in ten EU lower-income Member States, including Latvia.¹⁵ With the price per allowance in the range of EUR 25 to 30.5 and provided that approximately 1.44%¹⁶ of the resources were available for Latvia, then we could add EUR 136 million to the total available investments. As revenues depend to a large extent on the price of allowances, then for the purposes of analysis we assumed that at least 60% of EUR 100 million might be assigned to renewable energy and energy efficiency projects. The Modernization Fund will support investments in generation and use of energy from renewable sources, energy efficiency, energy storage, modernization of energy networks, including district heating, pipelines and grids. As above, we assumed that those investments would mobilize private investment as co-financing in the same amount (conservative mobilization rate of 1:1), so the overall investment could reach EUR 120 million for energy efficiency and renewable energy projects.

Amount available for climate projects in Latvia from source 2:	EUR 60 million
Mobilized from the private sector as co-financing:	EUR 60 million
Total amount available for climate projects in Latvia from source 2:	EUR 120 million

¹⁴ Information Report on the Operational Strategy of the Emissions Trading <http://tap.mk.gov.lv/lv/mk/tap/?pid=40478752>

¹⁵ https://ec.europa.eu/clima/policies/budget/modernisation-fund_en

¹⁶ Information Report on the Implementation of the Modernization Fund (draft) <http://tap.mk.gov.lv/mk/tap/?pid=40476379>

2.3.3. Source 3: Next Generation EU

The largest fund of the EU Multiannual Financial Framework (MFF) 2021-2027 and the Next Generation EU is the **Recovery and Resilience Facility (RRF)**.¹⁷ The guaranteed share for Latvia in the form of grants is EUR 1.65 billion and the variable part is projected at EUR 0.37 billion (this amount will be specified by June 2022). The maximum funding available to Latvia is projected at EUR 2.020 billion. Considering a climate share of 37%, Latvia could approach approx. **EUR 747 million grants/loans for green investment**. In order to access these resources, the Ministry of Finance together with the Cross-sectoral Coordination Centre (institution under direct authority of the Prime Minister) needs to prepare a Recovery & Resilience Plan and submit it for approval to the European Commission by April 2021. In the draft RRF plan, from the guaranteed share (EUR 1,65 billion) 11.1% is planned for energy efficiency projects, 20% for the transport sector, and 5.5% for climate adaptation measures. If such allocation is applied also for the variable part (EUR 0.37 billion), then in total EUR 224.22 million could be invested in energy efficiency projects. We assumed that those investments would mobilize private investment as co-financing in the same amount (conservative mobilization rate of 1:1), so the overall investment could reach EUR 448.44 million for energy efficiency and renewable energy projects.

Amount available for climate projects in Latvia from source 3:	EUR 224.22 million
Mobilized from the private sector as co-financing:	EUR 224.22 million
Total amount available for climate projects in Latvia from source 3:	EUR 448.44 million

2.3.4. Source 4: European Regional Development Fund

The second largest budget is the **European Regional Development Fund (ERDF)** with a climate share of 30%. Some investment could partly be covered by the **Cohesion policy funding**. Draft estimates suggest that EU Cohesion policy investments in the next MFF of 2021–2027 for energy efficiency and renewable energy could add approx. **EUR 464 million** for Latvia (the estimate is based on a Draft Operational Programme of the European Union Structural Funds and the Cohesion Fund for the 2021–2027 programming period)¹⁸. Given that these investments will lead to at least the same amount of additional private investments as co-financing, the amount of investment could reach the investment of EUR 930 million.

Amount available for climate projects in Latvia from source 4:	EUR 464 million
<i>of which investments in RES projects</i>	<i>EUR 38 million</i>
<i>of which investments in EE projects</i>	<i>EUR 426 million</i>
Mobilized from the private sector as co-financing:	EUR 464 million
Total amount available for climate projects in Latvia from source 4:	EUR 928 million

2.3.5. Source 5: ALTUM and EIB loans

Some new initiatives have been started in the development of new financing instruments. The European Investment Bank (EIB) has signed **EUR 18 million** loan agreement with the Latvian national promotional institution ALTUM to finance energy efficiency projects by Latvian companies. The financing is complemented by a EUR 3 million guarantee under the “Private Finance for Energy

¹⁷ https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/recovery-plan-europe_en#documents

¹⁸ https://www.fm.gov.lv/lv/sabiedribas_lidzdaliba/sabiedribas_lidzdaliba_par_es_jautajumiem/

Efficiency (PF4EE)” instrument, provided by the European Union under the LIFE programme (L’Instrument Financier pour l’Environnement)¹⁹. Based on previous support programmes²⁰, we assume that those loans will lead at least to 15% amount of additional private investments as co-financing, hence, the amount of investment could reach EUR 21 million investment.

Amount available for climate projects in Latvia from source 5:	EUR 18 million
Mobilized from the private sector as co-financing:	EUR 2.7 million
Total amount available for climate projects in Latvia from source 5:	EUR 20.7 million

Table 2 summarizes the investment need in energy efficiency and renewable energy projects and the financial sources available for them. According to this calculation there is still an investment gap of ca. **EUR 2.633 billion**. In addition to EU funding and the EU ETS system in the NECP, there are no sub-national, other national or private sources of financing foreseen to bridge the gap. According to the analyses in Table 2, national sources and private investments could contribute EUR 902 million to renewable and energy efficiency as co-financing (based on a conservative mobilization rate of 1:1). Apart from the identified sources, there might be other opportunities for the state to raise capital for climate investments, for example, by using green bonds as Latvia's debt remains one of the lowest in the EU. However, we see only minor chances that national sources will play a major role in the future, especially due to the COVID-19 Crisis that affected growth rates and tax revenues. According to forecasts, the gross domestic product (GDP) will fall by -5.6% in 2020, but in 2021 GDP growth is forecasted to rise by +2.8%. Unemployment will stay around 8% in 2020 and 2021.²¹

Table 2. Investment needs and sources of funding

Investment Needs, million EUR	Sources of Funding, million EUR
EUR 1,730 million (energy efficiency in buildings)	EUR 375 million (Emission Selling, source 1)
EUR 1,663 million (energy efficiency and renewable energy in district heating and industry)	EUR 60 million (Modernization Fund, source 2)
EUR 1,057 million (RES in electricity sector)	EUR 224.22 million (Recovery and Resilience Facility, source 3)
EUR 2 million (Prosumers ²²)	EUR 464 million (Cohesion Fund, source 4) EUR 18 million (ALTUM loans, source 5)
	EUR 902 million of private sources mobilized as co-financing
Total needs: EUR 4,452 million	Total sources: EUR 1,819 million
	INVESTMENT GAP: EUR 2,633.39 million

¹⁹ <https://www.eib.org/en/press/all/2020-074-altum-and-eib-join-forces-for-energy-efficiency-investments-in-latvia>

²⁰ <https://www.altum.lv/lv/pakalpojumi/uznemumiem/aizdevumi-uznemumu-energoefektivitatei/aizdevumi-uznemumu-energoefektivitate/>

²¹ https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-performance-country/latvia/economic-forecast-latvia_en

²² Electricity consumers that produce part of their electricity needs from their own power plant and use the distribution network to inject excess production

3. Capital Raising Plan for Energy Efficiency in the Buildings Sector

3.1. Policy Framework

The NECP²³ was adopted in compliance with the Regulation 2018/1999/EU of the European Parliament and of the Council on the Governance of the Energy Union and Climate Action and sets new energy efficiency targets for Latvia. The **mandatory national energy efficiency target** is defined as the cumulative savings of the final energy consumption, **comprising 73.7 PJ or 20.472 GWh in 2021-2030**. Latvia must provide new savings of 0.8 % per year from the annual final energy consumption, which translates to a reduction of final energy consumption approx. by 20% until 2030.

In addition, in 2017 Latvia adopted the Long-term Strategy of Building Renovation of Latvia²⁴, in compliance with the Directive 2012/27/EU of the European Parliament and of the Council on Energy Efficiency. According to it, in 2020 Latvia submitted an information report for the Long-term strategy on the renovation of buildings²⁵. The strategy defines renovation and improvements in the energy efficiency of apartment housing blocks to be among the goals of Latvia's energy and housing policies. The strategy sets actual financing needs assuming renovation costs, the number of buildings, where it is possible to carry out cost-effective renovation and the share of households potentially interested in energy efficiency measures. The total funding gap for residential apartment buildings is estimated to be EUR 4.52 billion, for private houses – EUR 4.62 billion, for central government buildings – EUR 1.04 billion, and for municipal buildings – EUR 4.89 billion. The assessment of the JRC concluded that the proposed policies and measures are appropriate, but it is unclear when they will be started; furthermore, the analysis to guide investment decisions is still missing.²⁶

Energy efficiency policy, including energy efficiency policy in buildings, is set by the Energy Efficiency Law of Latvia²⁷ in compliance with the Directive 2012/27/EU of the European Parliament and of the Council on Energy Efficiency. The Energy Efficiency Law defines a set of policy measures including requirements for energy audits for large companies, energy management system for big companies and big electricity consumers, energy efficiency obligation scheme, voluntary agreements on energy efficiency, and other measures.

Specific requirements for energy efficiency in buildings are set by the Law on the Energy Performance of Buildings of Latvia²⁸ in compliance with the Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings. This Law defines the minimum energy efficiency requirements of in-use buildings as well as buildings in the stages of design, reconstruction and renovation, and the requirements for energy certification of buildings, heating systems, and air conditioning systems. A large share of Latvian building stock has been built

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

²⁴ The strategy is available at: https://ec.europa.eu/energy/sites/ener/files/documents/lv_building_renov_2017_lv.pdf

²⁵ https://ec.europa.eu/energy/sites/default/files/documents/lv_2020_ltrs_official_translation_en.pdf

²⁶ <https://publications.jrc.ec.europa.eu/repository/bitstream/JRC114200/kjna29605enn.pdf>

²⁷ The law is available at: <https://likumi.lv/ta/en/en/id/280932-energy-efficiency-law>

²⁸ The law is available at: <https://likumi.lv/ta/en/en/id/253635-law-on-the-energy-performance-of-buildings>

during the Soviet era (between 1960 and 1990). Minimum energy efficiency requirements are set by Cabinet Regulation No. 339 regarding the Latvian construction standard LBN 002-15 “Heat Engineering of Buildings”. It came into force on 1st July 2015, but should be replaced in 2021. These regulations state procedures for the thermal engineering of building structures for newly constructed, re-constructed and renewable heated buildings.

3.2. Barrier analysis

The main barriers in energy efficiency projects have been identified using desk research and structured interviews. Hafner et al. (2019)²⁹ analyzed 31 practice-based policy reports and 91 academic papers to identify the main barriers to scaling up private sector investment for climate projects. Almost half of these i.e. 55 papers identified policy stability or uncertainty as a key barrier. The key barriers were the short-term nature of investors, policy uncertainty, and the lack of appropriate scale in investment opportunities.

Economidou et al. (2020)³⁰ have looked at 50 years of EU energy efficiency policies in the buildings sector. During the study the authors reviewed EU energy policies with a focus on policy instruments to encourage measures on energy efficiency in the building sector. The main barriers identified in the study are perceived uncertainty about energy efficiency measures, barriers relating to the cost of financing the upfront investments, lack of information, split incentives, complex decision-making processes, and difficulties in accessing capital.

Vogel et al.³¹ identified 38 barriers to energy efficiency in buildings, categorizing them into three categories — project level, sector level and contextual level (institutional framework, regulations, etc). Although several barriers are common to all energy efficiency projects in general, according to the interviews and analysis of literature, we have divided barriers by different sectors – residential buildings, municipal and central government, commerce sector and industry as follows in the next sections.

3.2.1. Residential Buildings

The assessment of projects managed by the Ministry of Economics was carried out in accordance with the regulation (EU) No 1303/2013 of the European Parliament and of the Council. The report “Evaluation of market inadequacies regarding funding accessibility to improve energy efficiency in residential buildings”³² was issued in February 2018, and it provided an analysis of the implementation and progress of the financial instruments for renovation of residential buildings. At the moment, buildings renovation rates remain low, in particular in the residential sector, due to such barriers as split incentives, high upfront capital investment, long payback periods, and behaviour barriers. The report defined the following challenges and barriers:

- Renovation costs of residential apartment buildings are increasing, hence, increasing the total deficit of funding available;

²⁹ <https://www.mdpi.com/2071-1050/11/11/3201/htm>

³⁰ Economidou, M., Todeschi, V., Bertoldi, P., D'Agostino, D., Zangheri, P., Castellazzi, L., Review of 50 years of EU Energy Efficiency Policies for Buildings, Energy and Buildings, Volume 225, 2020, 110322, ISSN 0378-7788

³¹ Vogel, J.A., Lundqvist, P., Arias, J., Categorizing Barriers to Energy Efficiency in Buildings Energy Procedia, 75 (2015), pp. 2839-2845

³² Report is available here: https://komitejas.esfondi.lv/RP/Koplietojamie%20dokumenti/EM_4211_ex-ante_progresas_zin_gala_15112019.docx?ID=1024

- Project preparation is time-consuming and complicated due to the complexity of energy efficiency projects;
- Relatively low energy costs, which impacts the economic feasibility of projects;
- High funding costs (loan interest rates) from banks;
- Flat owners' maintenance payment debts and exiting loans limits homeowners' possibilities to obtain new liabilities and invest in energy efficiency;
- Limited availability of commercial bank loans regarding specific groups of buildings with economically feasible projects (buildings in remote regions, with few flats, building managers with large credit portfolios);
- An insufficient number of energy efficiency experts (building managers, energy auditors, planners, etc.);
- Lack of professional builders in the building construction stage;
- Low-quality construction works and lack of quality control during project implementation.

The housing conditions are poor for a relatively large share of the population. Majority of the housing stock was developed during the Soviet era and has been insufficiently maintained. Over a third of households live in overcrowded dwellings and around a quarter of poor households (those living on less than 50% of the median equivalised disposable income) live in dwellings without basic facilities. Almost three in ten households report housing maintenance expenditures to be a heavy financial burden.³³ The residential sector has experienced a lack of long-term housing renovation policy and clear policy targets how to upgrade the existing building stock. To address the problem, the government plans to develop the private rental market by supporting access to long-term financing and providing support for private project developers accelerating construction of new residential buildings.³⁴

The existing building stock degrades each year and remains energy inefficient. In Latvia, energy efficiency projects are still fully dependent on the availability of EU grants. As pointed out in the OECD Economic survey, many homeowners lack financial resources, the decision-making process for multi-apartment building are rather complicated, and a complicated process of energy efficiency investments hinders a stronger uptake of dedicated EU and other public subsidies³⁵.

Deep renovation projects require large investments and projects have long payback periods (40 and more years) that makes it difficult to finance projects. Our interviews show that there is not enough trust among flat owners and parties involved in the renovation process. Flat owners lack experience to take a common decision and implement rather complex projects. There is a lack of information and knowledge about building renovation among flat owners.

“In the residential sector (multi-apartment buildings), there is not enough demand for building renovation. Apartment owners lack knowledge and understanding about building renovation. Joint decision-making in buildings is one of the big challenges and obstacles. Given that the renovation of buildings is a relatively complex and lengthy process which requires investment and time, residents are reluctant to be involved and take investment decision.”³⁶

³³ OECD (2020), *Policy Actions for Affordable Housing in Latvia*, OECD Publishing, Paris

³⁴ Based on the interview with E. Valgača, Ministry of Economics

³⁵ OECD Economic Surveys Latvia, May 2019

³⁶ Based on the interview with E. Augustins, Saldus City Energy Manager

Since apartment buildings are divided into apartment properties and every decision that is necessary in the process of building renovation requires a decision of the apartment owners, it means that the process is time consuming and complicated.

“Municipalities and private companies could take a more active role and to become facilitators helping residents to organize and manage whole building renovation process (one-shop agency).”³⁴

The majority of households lack access to loans and capital to invest in energy efficiency. Private building management companies and ESCOs could facilitate the renovation process, however, very often they have limited access to financing. Currently, there is no stable and long-term financing available and energy projects mainly depend on the EU funds. Renovation projects should be implemented in a relatively short period that otherwise leads to construction price inflation and lack of construction capacity.³⁷ Apart from financial barriers, there are other widely known obstacles in the construction industry.

“There are some technical barriers to be addressed as well, like a lack of construction supervision, no energy efficiency guarantees from construction companies to flat owners and a lack of qualified workers.”¹¹

Therefore, more long-term planning and private investments could help to accelerate building renovations.

3.2.2. Municipal and Central Government Building

A lot of municipal and state-owned buildings have been renovated, mainly using EU funding and revenues from the emission trading mechanism. Those funds are mostly utilized in a form of grants with a relatively small share of co-financing from the municipal and/or state budgets. Hardly any other sources of funding have been used.

“In the public sector, energy efficiency projects mostly depend on EU funds and possibilities to borrow from the state treasury. Municipalities have difficulties to transform their project ideas and needs into bankable projects. Lack of aggregation of fragmented smaller projects and a conservative approach to project financing are important barriers to project development.”³⁸

Deep renovation of buildings requires significant investments, and municipalities/state institutions are reluctant to invest in the project preparation (feasibilities studies and technical design). Like in the residential sector, building renovation projects also have long payback periods. Energy service companies would want to attract more private investment in the municipal and governmental building sector, however, there are no verified models for energy service contracts and procurement documents. There are no specific energy efficiency performance and monitoring requirements set for the implementation of energy efficiency projects in buildings. Project development and investment in buildings require long-term thinking, which sometimes contradicts with the policy-making cycle and municipal elections.

³⁷ https://sharex.lv/wp-content/uploads/3_Gatis_Bazbauers_RTU.pdf

³⁸ Based on the interview with E. Augustins, Saldus City Energy Manager

“Very often municipalities and state institutions lack human resources and time to develop new projects. State institutions and municipalities have rather conservative approach to financing as well.”³⁷

“Apart from EU funds, there is no extensive experience and examples for other financial instruments, whether international financing institutions or private funding. Many municipalities have difficulties in borrowing.”³⁹

At the moment, legislation is restrictive rather than supportive for the use of private funding. Public budgeting rules discourage savings.⁴⁰ Generally, energy performance contracting suffers from a lack of standardization which would simplify the process of meeting legal and administrative requirements (i.e. there is no “typical” type of contract and no experience in tendering energy service companies in the public sector).²⁴

3.2.3. Commercial Sector and Industry

Quite often private companies face high initial project preparation costs, and they are not ready to take risks related to project preparation knowing the economic feasibility of the project. Likewise, project developers and other intermediaries, such as technology providers, energy auditors, ESCOs, are not willing to take the project preparation risk not knowing whether those projects will be implemented.

“Very often companies lack the time and resources to develop energy efficiency or renewable energy projects. Senior business leaders are used to focus on sales, new markets, development of the existing or new products. The technical staff, in turn, is usually focused on the day-to-day maintenance, and often struggle to find time and resources to analyse the potential to introduce innovation solutions.”⁴¹

To address this barrier, ALTUM has started to provide technical and financial support (grants) for companies to prepare bankable projects using funding from ELENA – the European Local Energy Assistance.

3.3. Typical Financing Structures and Constraints

The main stakeholders involved in the retrofit of residential buildings are the national development bank ALTUM, national commercial banks and flat owners. Other relevant parties are energy auditors, ESCOs, project managers, and building management companies.

Based on the interview with E. Valgača from the Ministry of Economics, most projects in the building sector are implemented using the EU funds. Typical financing structures are grants from ALTUM (using the EU fund financing) linked to a bank loan.

ALTUM managed the EU support programmes for energy efficiency in multi-apartment buildings with the total amount of EUR 201 million (2014–2020). Up to 50% of the eligible project costs were

³⁹ Based on the interview with R. Kass, the Ministry of Environmental Protection and Regional Development

⁴⁰ Accelerate Sunshine projects, <https://sharex.lv/news/>

⁴¹ Based on the interview with E. Kudurs, Finance Institution ALTUM

covered by the grant, and the remaining part issued as a loan from a secondary bank (or by ALTUM in case the secondary bank was not able to finance the project). In most cases, the loan is granted to a houseowner association or sometimes to a building management company. Flat owners' future monthly payments are typically secured as a collateral. Usually, banks require an agreement of at least 75% of apartment owners to take a loan.

In the period from 2009 to September 2019, total investment into renovation projects for residential apartment buildings amounted to EUR 235 million, including EUR 106 million co-funding from the European Structural Funds. Overall, 838 buildings were renovated, achieving the average heating energy consumption of 96 kWh/m² per year.²² Support mechanisms for increasing energy efficiency in buildings had been available in the planning period of European Structural Funds 2007–2013 (from the ERDF) as well as in 2014–2020 (from the ERDF and the Cohesion Fund).

Energy Performance Contracting (EPC) is an alternative financing mechanism where private companies are financing an energy efficiency project and their remuneration is based on the energy efficiency savings achieved. The company will not receive its payment unless the renovation project delivers energy savings as promised in the contract. This approach is based on the transfer of technical risks from the client to the energy service company. Currently, in the Latvian market there are four companies that are preparing building renovation projects based on the EPC approach. These are still too few EPC projects to address market needs. The interest of the existing ESCOs is high, but usually they do not have access to long-term finance.

Public building renovation projects in Latvia are supported by a grant from the European Structural and Investment Funds (usually up to 85% of eligible costs) with small co-financing part from the municipality and sometimes mixed with a loan from the Treasury. In general, Latvian municipalities can borrow loans from the State Treasury. However, due to their existing liabilities, some municipalities are not able to borrow anymore to invest in new projects, hence, they would need off-balance sheet solutions where investments are financed directly from cost savings, or where private sector could support municipalities in finding the most suitable technical and financing solution.

3.4. Financing Sources

3.4.1. Residential Buildings

Most of the energy efficiency projects in the multi-apartment buildings are financed with the help of an EU support programme managed by ALTUM. Grants up to 50% of eligible costs and additional financing sources are provided to flat owners (houseowner association), who usually take a loan for the rest of the amount from a bank. In some cases, ESCOs are involved in the project implementation. Only a small number of projects have been implemented without the EU support and/or using only bank loans. Some banks in Latvia offer loan schemes for the multi-apartment building sector that are specifically developed to finance deep retrofit projects, namely, Swedbank, SEB Bank, Luminor and Banka Citadele.

3.4.2. Single-Family Houses

There are currently no specialized financial products in the market for the private housing sector. Projects are usually financed either from the owner's private funds or by loans from national banks.

Moreover, large electricity utility companies (Latvenergo, Enefit et al.) offer to install renewable energy sources (mainly PV panels) in the form of leasing. On 28 July 2020, the Cabinet of Ministers approved a new support programme for households, which envisages provision of guarantees for commercial bank loans for the implementation of energy efficiency improvement measures for private houses. It is planned that these guarantees will become available from 2021 onwards.⁴²

3.4.3. Public Building Renovation

Most of the projects are financed by means of grants from the EU funds, which are co-financed by municipal/governmental budgets and a loan from the State Treasury. In the case of municipal companies, commercial bank loans are used as well.

3.4.4. Commercial Buildings and Industry

ALTUM can grant a loan for energy efficiency projects in the amount of up to EUR 2.85 million and up to 90% of the total project amount. The loan term is from 5 to 14 years and loan repayment is secured by energy cost savings of the project. It should also be noted that no collateral is needed for this loan.

3.5. De-risking Policy and Financing Instruments Required to Raise Capital

3.5.1. Residential and Single-Family Buildings

The interviews revealed that long-term, low-interest rate financing instruments are needed, especially to finance energy efficiency solutions for residential multi-family and single-family buildings.⁴³ To attract private funding by means of EPC, a refinancing mechanism is also required for the ESCO projects. This is necessary because once the ESCOs have used all their capital in the long-term projects, they do not have enough funds to invest in new projects⁴⁴. As concerns residential buildings, standard technical solutions that can be easily replicated, in the long term would lead to reduced investment costs and improved construction work quality. The OECD suggests tackling the challenges with affordable housing in Latvia by development of a housing refurbishment programme which could provide financial support to conduct technical upgrades (e.g. plumbing, roofing), as well as energy efficiency upgrades. Such support could provide benefit to households across all income spectrum, helping to improve housing quality for a large share of the population.⁴⁵

3.5.2. Public Buildings

Municipalities and public authorities lack skills and capacity to develop, implement and finance energy efficiency projects. Many project developers still face obstacles in raising the necessary up-front costs, attractive financing options, and possibilities to borrow. To accelerate private investments and to develop new energy efficiency projects in the public building sector, ESCOs or other third-party organizations could be involved. According to the Eurostat and EIB guidelines, long-

⁴² <https://em.gov.lv/lv/jaunumi/28561-pirmo-reizi-bus-pieejams-atbalsts-privatmaju-energoefektivitates-uzlabosana>

⁴³ Based on the interview with E. Augustins, Saldus City Energy Manager

⁴⁴ https://ec.europa.eu/energy/sites/ener/files/seif_roundtable_2_riga_10_april_10_2019_proceedings_en.pdf

⁴⁵ OECD, Policy actions for affordable housing in Latvia

term contracts and off-balance sheet solutions are needed to accelerate building renovation⁴⁶. According to the Eurostat guidelines, guaranteed savings must exceed operational payments and government grants, and savings must be derived from a reduction in energy consumption.

At the moment, financial limitations refrain municipalities, governmental institutions, and state-owned companies from engaging in long term contracts. There is no clarity about energy performance contracting, and it is even likely that municipalities may confuse energy performance contracting with private public partnership projects. Clear guidelines should be put in place, separating energy performance contracting projects and public-private partnership projects. This is especially important as massive documentation must be prepared to implement public-private partnership projects, which should not be applicable to relatively small projects.

In case of off-balance sheet projects, energy performance contracting might be employed for municipal or state financing. However, EU grants are still fully applicable. If a specific guideline is prepared to simplify interpretation of EPCs, it must be emphasized that the EU grant financing may be used without limitation to fund energy performance contracting projects. Municipalities should be given practical advice on the principles of structuring procurement procedures to select energy efficiency service companies. It is important because there is a lack of design and building project experience in Latvia. The problem would be partly solved if a pilot project is successfully completed as then there would be a fully documented precedent.

3.5.3. Commercial Buildings and Industry

The technical assistance mechanism can be widened and applied in order to overcome barriers identified in the commercial and industrial sectors. Technical assistance may include preparation of feasibility studies, energy audits, energy modelling and preparation of investment concepts. In order for the technical assistance tool to be fully utilized, potential clients should be well informed. This would require better coordination and marketing activities among governmental institutions managing different support programmes.

⁴⁶ https://ec.europa.eu/eurostat/documents/1015035/8885635/guide_to_statistical_treatment_of_epcs_en.pdf/f74b474b-8778-41a9-9978-8f4fe8548ab1

4. Capital Raising Plan for Renewable Energy Projects

4.1. Policy Framework

Data provided by the Central Statistical Bureau show that in 2019 gross energy consumption in Latvia comprised 196.7 petajoules (PJ), which is by 2.4 % less than in 2018. Over the past five years (from 2015 to 2019), gross energy consumption grew by 7%.⁴⁷ Since the gross consumption of renewable energy is increasing, Latvia has accomplished its strategic objective regarding the use of renewable energy resources aiming at reaching 40% of the energy produced from renewables in the gross final energy consumption until 2020. However, the amount of energy produced from renewable energy depends to a large extent on the amount of water in the river Daugava and the operation of the large hydropower plants.

The use of renewable energy sources in the transport sector remains a challenge as in 2018 the share of renewables in transport constituted 4.7 % and the EU average was 8%. In 2018, the share of energy produced from renewable energy sources in the gross final energy consumption was 39%, in electricity – 54%, in heating and cooling – 55%, but in transport – only 2.5%. In 2018, the total amount of energy produced from renewable energy sources was 3.5 GWh, whereof 2.4 GWh or 70% were produced by hydropower plants, and 570 GWh or 16% of biomass by cogeneration plants. Solar power plants have also been installed in Latvia, but the total amount of energy produced by them is less than one per cent (1 GWh). According to the NECP 2030, the share of renewable energy in the gross final energy consumption should be at least 50%.

Support for the renewable energy development in Latvia has been established since mid-'90s. The national Energy Law entered into force in 1998. On the basis of the Energy Law, Cabinet Regulations were passed in order to regulate procedures for the purchase of surplus electricity produced by cogeneration plants and to determine the requirements for cogeneration plants and procedures for determining the purchase price of surplus electricity produced.

In 2010, like many other EU Member States, Latvia developed an Action Plan to promote and achieve renewable energy goals by 2020. One of the main mechanisms implemented was a feed-in tariff, which also included elements of a quota system and tenders. The present feed-tariff has been suspended due to the lack of transparency and fear of over-subsidisation of individual companies and/or technologies. The existing state support mechanisms for energy production from renewable energy is currently under revision, hence, at the moment no new large-scale renewable energy projects are being developed. Stricter controls and a limited timeframe for the implementation of renewable energy projects have been introduced. For small scale renewable energy in households, renewable electricity is promoted also through net-metering since 2014.⁴⁸ Moreover, thanks to the energy efficiency obligation scheme, energy utility companies get involved in the energy end-use sector by offering energy efficiency services including PV panels. On top of the feed-in tariff, renewable energy projects have been supported by different investment programmes and grants.

⁴⁷ <https://www.csb.gov.lv/lv/statistika/statistikas-temas/vide-energetika/energetika/meklet-tema/2702-energoresursu-paterins-latvija-2019-gada>

⁴⁸ <https://www.em.gov.lv/en/news/27970-conditions-for-net-system-users-have-been-simplified>

These activities belong to two main programmes: the Climate Change Financial Instrument under the Ministry of Environment, and the resources of the EU Cohesion Fund managed by the Ministry of Economics.

4.2. Barrier Analysis

One of the main barriers we identified in the literature analysis and during the interviews is uncertainty about the energy policy and renewable energy policy, in particular. Latvia's energy policy moved from a relatively generous feed-in tariff support mechanism for renewable energy to almost no support. This unstable policy framework hinders new renewable energy investment. Based on the study of the Council of European Energy Regulators (CEER) on the mechanisms used in Europe to support renewable energy, it must be concluded that the support scheme applied in Latvia has proved to be too generous. The weighted average support level in 2016 and 2017 in Latvia was 117 EUR/MWh while in EU weighted average was EUR 96.29/MWh, Estonia – EUR 20.50/MWh and in Lithuania EUR 56.42/MWh. At the same time, it should be noted that a higher average wholesale price will result in lower support levels in systems with feed-in tariffs or variable premiums. Fluctuating full load hours can also result in lower or higher overall support payments.⁴⁹ At the moment Latvia aims to increase its renewable energy share targets from 40% in 2020 to 50% in 2030, yet it is not clear how renewable energy sources will be promoted and supported.

One of the biggest challenges is to continue reducing the cost of renewable energy that can be done by improving research, industrialization of the supply chain, as well as more efficient policies and support schemes. Since the renewables are becoming the central element of the energy mix in Latvia, changes in the policy alongside with their further development are required.

The use of renewable energy must be encouraged in energy production, in heating and cooling, and in transport sectors. District heating has a very high potential for accumulation of excess electricity in the Nord Pool (delivers power trading across Europe) and further integration of renewable heat (particularly from heat pumps and solar energy). In the transport sector, a mix of several alternative fuels must replace oil. New technologies will bring more options for the future, and they form an essential part of the solution to the decarbonisation challenge. For this reason, support should be provided to the research and demonstration at industrial scale.

The lack of examples, information, special planning and a financing framework for wind farm projects causes resistance from some municipalities and citizens. For smaller renewable energy projects regulations prevent self-consumption of solar power from becoming an economically feasible solution. As concerns solar PV projects at the building level, there are no clear guidelines for the required documentation and permits. Self-consumption is limited only to powering the communal areas of an apartment building excluding apartments. Compared to private households, private companies and municipalities do not have support to install renewable energy sources.

4.3. Typical Financing Structures and Constrains

According to our findings, the vast majority of projects are financed by commercial bank loans (*Swedbank*, *SEB Bank*, and *Citadele*) and private equity. However, due to the lack of stable energy

⁴⁹ <https://www.ceer.eu/documents/104400/-/-/80ff3127-8328-52c3-4d01-0acb2d3bed>

policy and regulatory barriers, there is no development of new renewable energy projects.⁵⁰ According to the report on climate investments in Latvia⁵¹, the key investors were energy utility companies (district heating companies and electricity utility company *Latvenergo*). The report does not provide detailed information on the investment made by households and other economic operators, who may have used only their own funds or bank loans. However, considering the information provided by the electricity transmission and distribution system operator *Sadales tīkls*, it was concluded that households and economic operators might have also made around 17% of the total investment. This assessment does not include investments by households in small heating boilers.

4.4. Sources of Financing

Small scale renewable energy technologies are installed in private buildings using private capital, whereas in public buildings – mostly by means of the EU grant programs. As a novelty this year, one of the largest private banks in Latvia – *Swedbank* – has developed a loan for the purchase and installation of solar panels. Those are relatively small loans from EUR 3,000 to EUR 20,000 with a fixed interested rate of 5.9% and maturity of up to 10 years, but no collateral required. Likewise, energy utility companies offer renewable technologies and energy efficiency services within the framework of the energy efficiency obligation scheme, and very often with the possibility of lease.

4.5. De-Risking Policy and Financing Instruments Required to Raise Capital

To make renewables more attractive when fossil fuel is relatively cheap, there is a need for a tax initiative to stimulate the choice of non-emission technologies and promote investments in the renewable energy. The OECD remarked that in Latvia effective tax rates on CO₂ and air pollutants are quite low and recommended to increase energy taxes and align the effective taxation of emissions of CO₂ and other pollutants across different fuels.⁵² Following the recommendation, a significant increase of tax for CO₂ emissions is planned to rise from EUR 4.5/tCO₂ in 2019 to EUR 9/tCO₂ in 2020, EUR 12/tCO₂ in 2021 and EUR 15/tCO₂ in 2022.

In 2020, the Cabinet of Ministers approved amendments to the regulations on electricity trade and use, which simplify the procedure for applying the net electricity settlement system (NETO system) to homeowners. With the approved amendments, the NETO system users are exempted from payments for the variable part of the mandatory procurement component. The same discussion should be continued with an aim to look for possibilities to apply this net electricity settlement system to municipalities, state institutions and companies.

“It is necessary to review the possibility of using NETO (amount of unused energy can be transferred to a common network) systems for municipalities and companies”⁵³

“Very often municipalities and companies lack information about renewable potential. There is also a lack of training and access to information”⁵⁴

⁵⁰ http://www.baltic-course.com/eng/direct_speech/?doc=158125

⁵¹ Kamenders A., Rochas C., Novikova A., “Investments in Energy Efficiency and Renewable Energy Projects in Latvia in 2018”, Riga Technical University (RTU), November 2019.

⁵² OECD Economic Survey, May 2019 <http://www.oecd.org/economy/surveys/latvia-2019-OECD-economic-survey-overview.pdf>

⁵³ Based on the interview with E. Zariņš, Latvian Environmental Investment Fund

Early-stage funding and technical assistance would help municipalities and companies to transform their idea into bankable projects. Very often neither technology developers, not clients themselves are willing to invest in the development of new projects, as they are not sure of the viability of the project.

Wind energy is struggling to get social acceptance⁵⁵ although wind energy has a huge potential. Total installed capacity in Latvia is 66 MW, and even the NECP forecasted an increase in the wind power capacity to at least 800 MW by 2030. The role of municipalities as a tool to develop and implement projects needs to be promoted, meanwhile stimulating collaboration between residents and investors at the municipal level.

⁵⁴ Based on the interview with E. Augustins, Saldus City Energy Manager

⁵⁵ <https://www.windpowermonthly.com/article/1495715/eolus-faces-resistance-local-residents>

5. Policy Recommendations to Overcome Barriers

Based on the literature review and interviews, we identified key barriers to investments in energy efficiency and renewable energy projects. This section provides a summary of and recommendations for overcoming these obstacles.

5.1. Information Barriers

As we illustrated before, the key information barriers hindering the organization and implementation of the energy efficiency projects and renewable energy projects are:

- Low awareness about the possibilities of such projects and subsequent demand for them among potential beneficiaries (residents, municipalities, and others), and
- Low understanding of their non-energy and macro-economic benefits among the policy makers and general public.

Recommendation 1

- Invest in cooperation and exchange of information between universities and policy makers, including the Riga Technical University, the State Construction Control Bureau, LVIF, ALTUM and the Ministry of Economics.
- Together with other stakeholders, form a centralized information hub and convening body. The State Construction Control Bureau of Latvia could assume the leading role. The hub shall collect information about research, projects, and advisory services relevant to the planning and implementation of energy efficiency and renewable energy projects, as well as empirical evidence and performance track record of past projects.⁵⁶
- Disclose information of the building information system⁵⁷. The system stores information about the audits performed for large energy consumers and large companies. The platform collects information on the measures taken and the results achieved. This information can be used to develop benchmarks and energy efficiency indicators that could be used by other companies, funding for R&D to develop appropriate data analyses systems, and benchmarks.
- Share information gathered and analysis of the existing projects among building management companies, municipalities, professional association, and financiers. It also includes information about the achievements of the multi-apartment building programme managed by ALTUM, as well as data regarding costs, energy savings and results achieved.

Recommendation 2

- Stimulate a broader discussion at the political level and in general media about non-energy benefits of energy efficiency and renewable energy projects, including employment, health benefits, comfort, real estate value, safety, urban environment, climate targets, innovation, and energy security. Analyze benefits of long-term investment strategies and needs based on these

⁵⁶ Robyn Clark, James Reed, Terry Sunderland, Bridging funding gaps for climate and sustainable development: Pitfalls, progress and potential of private finance, Land Use Policy, Volume 71, 2018, Pages 335-346, ISSN 0264-8377

⁵⁷ <https://bis.gov.lv/bisp/>

benefits and consider them in strategic decision-making, see the German experience as an example⁵⁸.

- Analyze the motivation of potential project beneficiaries to implement energy efficiency and renewable energy projects. In neighbouring countries, the driving force was the property value increase by up to 25%, visual improvement, possibility to adjust heating levels, and others⁵⁹. Analyze the information about the results of the multi-apartment building programme managed by ALTUM against the benefits related to this motivation and use it to develop an information campaign to raise awareness among the future beneficiaries, in particular, residents and project developers.
- Perform regular assessment of recent investment flows in the project and how they close the investment gap known. To achieve this, rely on the prototypes delivered by from CIC2030 project. Regularly revise subsidy schemes based on the results of this assessment, reorganizing the support from overperforming to underperforming measures. Consider the French experience as an example.⁶⁰

5.2. Lack of Capacity

Next, we see a lack of or insufficient capacity and, hence, the resulting lack of planning and implementation arrangements which might assist project beneficiaries:

- Industry and municipalities lack necessary technical, organizational, legal, and financial capacity for identification, development and implementation of new projects.⁶¹
- Even if apartment owners of multi-residential buildings are interested, they face a complicated decision-making process and logistics of accessing dedicated EU funds and other public subsidies.⁶²
- The Latvian market also lacks enabling market structures such as energy service companies, energy consultancies, and energy auditors.
- The beneficiaries therefore have to assume high transaction costs and fees for the project development.

Recommendation 3

For the industry sector and municipalities:

- Design and implement a Project Development Assistance (PDA) programme which provides funding for the project development for potential beneficiaries of the industry sector and

⁵⁸ Zancanella, P., Bertoldi, P., Boza-Kiss, B., Energy efficiency, the value of buildings and the payment default risk, EUR 29471 EN, Publications Office of the European Union, Luxembourg, 2018. Forschungszentrum Jülich. 2018. Wirkungen der KfW-Programme „Energieeffizient Bauen“, „Energieeffizient Sanieren“, „IKK/IKU – Energieeffizient Bauen und Sanieren“ und „KfW-Energieeffizienzprogramm – Energieeffizient Bauen und Sanieren“ auf öffentliche Haushalte im Förderjahr 2016. URL: <https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-alle-Evaluationen/STE-Research-Report-%E2%80%93-Wirkungen-von-EBS-im-Foerderjahr-2016.pdf>

⁵⁹ Ropaite, G. 2016. Veiksnių Skatinančių ir Stabdančių Daugiabučių Namų Atnaujinimą (Moderniza-vimą) Nustatymas [Determining the Factors Encouraging and Stopping the Renovation (Modernisa-tion) of Apartment Buildings]. Science – Future of Lithuania 8(5): 484–489.

⁶⁰ Novikova, A., Klinge, A., Hainaut, H., Cochran, I., Juergens, I., Emmrich, J. 2019. Tracking investment into energy transition in Germany and France: A comparison of methodologies and selected results. Institute for Climate Protection, Energy and Mobility (IKEM) and the Institute for Climate Economics (I4CE), September 2019

⁶¹ Based on the interview with E. Augustins, Saldus City Energy Manager

⁶² OECD Economic Surveys Latvia, May 2019

municipalities. The latter keep hands-on locally to deliver bankable and scalable climate projects, which should trigger public and private investment. The PDA programme should develop a simple fast-track application process and easy access to a pool of energy efficiency experts and project managers. Project developers should generate good project ideas and bring them to life, as well as help to develop aggregation mechanisms. The PDA programme should be developed together with long-term financing instruments, benchmarks and standardised investment packages for different client needs. Likewise, it should be developed as a part of subsidy programmes, rather than their parallel structure. For more details, see the experiences of Slovakia and Lithuania.⁶³

- The PDA programme shall rely on the first experience of an administrated technical assistance programme for energy efficiency and renewable energy project development from ALTUM⁶⁴. The institutions currently involved in providing support for climate projects, including the Central Finance and Contracting Agency (CFLA), ALTUM, the Latvian Environmental Investment Fund, and the Rural Support Service should organize know-how exchange and agree on common principles for project development. The latter shall cover energy auditing, technical inspection, project financial analysis etc. in order to facilitate common quality standards and understanding between clients, project managers and other involved stakeholders.
- The PDA programme may use the resources of ELENA (strengthening the European Local Energy Assistance), Joint European Support for Sustainable Investment in City Areas (JESSICA), and the Resilience and Recovery Fund.
- Develop more standardized solutions based on the exiting experience and results from other projects. Standardize technical solutions and analytical tools (ready to use excel spreadsheets, benchmarking tools) that could be provided for project developers.
- Involve the Latvian Chamber of Commerce and Industry and the Latvian Association of Local and Regional Governments as “co-owners” of the technical assistance and project development programme that will help to ensure active involvement of project developers and address their needs.

Recommendation 4

For residential and municipal building sectors:

- Assign the leading role of managing projects to building management companies, municipalities, professional project managers and ESCOs.
- Ensure that the Law on Residential Properties enforces the responsibilities of flat owners to ensure compliance with the minimum requirements for the energy efficiency of residential buildings. Allocate the responsibility of monitoring compliance with the existing requirements to the State Construction Control Bureau of Latvia and the Ministry of Economics. In the majority of cases flat owners are not aware of such conditions.²⁶
- Facilitate project administration, transfer the functions of project supervision and quality control to the right institutions, such as the State Construction Bureau.

63 Novikova, A., Olshanskaya, M., Dunkel, M. 2020. Lessons learned for international climate policy from the programming, implementation, and monitoring of the European Structural and Investment Funds in EU Member States. Institut für Klimaschutz, Energie und Mobilität (IKEM): 2020

⁶⁴ <https://www.altum.lv/en/services/enterprises/loans/a-loan-for-the-company-s-energy-efficiency/a-loan-for-the-company-s-energy-efficiency/>

- Create local ‘one-stop-shops’ or dedicated services. A large variety of market operators can be involved in project development assistance activities including local and regional authorities, ESCOs, banks, energy agencies or utilities, usually with a local or regional scope.
- Encourage housing management agencies to initiate and manage energy efficiency investment for a large number of buildings and provide lower-income homeowners with grants covering up to 100% of the costs. Introduce means-tested tax incentives for the refurbishment of basic technologies.
- Introduce off-balance sheet solutions to develop ESCO projects in the municipal and state building sector. The Ministry of Economics is working on the EPC model contract according to the EUROSTAT guidelines. The work should be continued with the development of procurement documentation and guidelines for municipalities and state institutions.
- Include utilities in planning and implementation arrangements. Latvia operates an energy efficiency scheme for electricity retailers since 2016, and according to the NCEP, it would like to expand it to other obliged parties i.a. for the promotion of building renovations. The obliged parties can either directly implement measures at end users, which result in energy savings, or have the option of paying a fee proportional to their obligations to meet the requirements. Parties are not restricted to their own customers when implementing the measures. The funding available through the building renovation programmes can be used by the consumers, where obliged parties should coordinate the implementation of energy efficiency measures. The expected advantage of it is that the obliged parties are motivated to steer residential consumers into these programmes through marketing, sales, and by supporting implementation. It is not expected that OPs will be participating in the public building projects, based on international experience. For details, see the Hungarian planning of the forthcoming scheme.⁶⁵

Recommendation 5

- Establish promotional training and a pool of independent, high-quality technical experts, alongside with the development of the technical assistance as described above. These new competencies are needed for energy experts and other specialists to explain the possibilities and benefits of energy efficiency renewable projects to municipalities and companies.
- Establish training and regular certification systems for energy auditors and project developers.

5.3. Technical Barriers

A typical barrier of the buildings sector projects is that there is a large number of them and most of them are of a very small scale. For this reason, they are too fragmented, relatively small compared to the required feasibility studies.

Recommendation 6

- Provide energy efficiency benchmarks and “quick tools” for project developers for testing project ideas based on the real-world data. Develop energy efficiency benchmarks for companies and buildings using the national building information system. Create guidelines for project implementers using energy audits submitted by energy auditors, monitoring data, and information about the implemented projects (see Recommendation 1).

⁶⁵ Multicontact. 2020. Hungary: Modernisation of Public and Residential Buildings - Identification and Elaboration of Support Programmes. EBRD

- Provide training and upskilling of energy auditors and energy managers, introduce regular certification schemes for the building sector specialists.

The programmes implemented in Latvia in the past and at present mostly scaled-up mature low carbon solutions, such as energy efficiency in particular building types with very low energy performance. Many advanced technologies are expensive, among other reasons, because they are imported. This obstacle will remain, unless Latvia develops own capacities of producing these technologies and up-scaling them. This refers, in particular, to the advanced buildings systems, such as heat pumps, regulations and controls, renewable energy technologies, and others. The current crisis has shown the need for more investment in R&D and increase in the local production capacity to develop more resilient economy and higher industrial competitiveness and innovation in Latvia.

Recommendation 7

- Consider the investment needs and possibilities to develop new projects in the overall economic environment, and the possibilities to develop new technologies in the field of energy efficiency and renewable energy.
- Assess the opportunities of supporting local producers of energy efficiency and renewable energy technologies. Although such support is to a large extent constrained by the EU State Aid legislation, there are still many ways to stimulate local producers, for instance, through public procurements, reduced taxation as a part of the COVID-2019 recovery package, and the like.

5.4. Financial Barriers

Long-term planning horizon is a key success factor for the energy efficiency programmes of buildings. Lessons learned and our analyses allows to learn to utilize the instruments and become more mature, bringing on-board both, the private and financial sectors, and to deal with the myriad of barriers. It also helps to provide a long-term call to the construction and technology market, which will allow to build their capacity in terms of labour and technological availability. In this regard, Latvia's challenges are:

- Lack of long-term financing
- Access only to grant-based support (non-linearity for support)
- Lack of suitable financial vehicles/financial instruments for energy efficiency and renewable energy projects,
- Limited projects with acceptable risk-return profiles, and
- Lack of the institutional and policy reform recognizing the value and benefits of long-term investment strategies

Recommendation 8

- Standardize the investment cycle in energy efficiency so that both, the supply and demand side of the funding scheme, know what to expect.
- Develop loan schemes with a grant component by public financing institutions. Assign the responsibility to develop sustainable financial instruments to the responsible ministries – the Ministry of Economics, the Ministry of Environment and Regional Development, and the Ministry

of Finance. Please see the current experiences of Lithuania and Germany, and the expected results in Hungarian as examples⁶⁶;

- Consider the EU support 2021–2027 and the ETS to attract private capital instead of continuing the same programmes with minor improvements. Please see the Lithuanian experience as an example⁶⁷;
- Target investment grants only at very specific (sub) sectors (e.g. vulnerable households) and measures (e.g. innovative technologies). Alternatively, grants should serve as an additional/accompanying support mechanism rather than a stand-alone measure;
- Take into consideration such fiscal instruments as carbon tax and tax rebates. Tax rebates for the commercial/industry sector may provide much clearer and cleaner incentive with a potentially lower administrative burden. At the same time, supporting instruments to compensate for potential negative distributional effects must accompany any form of fiscal instruments. For examples of best practices in respect of tax incentives, please refer to other countries, for instance, Ireland.⁶⁸

Recommendation 9

- Expand green bonds using national financial institutions like ALTUM, national utility company *LATVENERGO* and other special-purpose private investment funds. The long-term financing instruments need to be combined with technical assistance for project development.
- Expand instruments for the private rental market, including support for accessing the long-term funding and support for private project developers accelerating the construction of new residential buildings, that are currently planned by the Ministry of Economics, as well as for the renovation of the existing building stock.

Recommendation 10

- Provide early-stage funding for long-term and low-interest investment funding schemes with technical assistance for project preparation. National or regional governments should introduce dedicated finance support schemes for energy communities to help them during the planning and project set-up phases. Early-stage funding is essential for conducting feasibility studies and accessing specialist consultancy services that can transform an idea into an easy-to-implement project plan. Provide long-term and low-interest investment funding schemes. Experience from the Public Investment Development Agency of Lithuania on renewable energy financing could be used.

Recommendation 11

66 Multicontact. 2020. Hungary: Modernisation of Public and Residential Buildings - Identification and Elaboration of Support Programmes. EBRD

Novikova, A., Olshanskaya, M., Dunkel, M. 2020. Lessons learned for international climate policy from the programming, implementation, and monitoring of the European Structural and Investment Funds in EU Member States. Institut für Klimaschutz, Energie und Mobilität (IKEM): 2020

Description of German financing for energy efficiency in buildings:

<https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestandsimmobilie/> and <https://www.kfw.de/inlandsfoerderung/Privatpersonen/Neubau/index-2.html>

67 Novikova, A., Olshanskaya, M., Dunkel, M. 2020. Lessons learned for international climate policy from the programming, implementation, and monitoring of the European Structural and Investment Funds in EU Member States. Institut für Klimaschutz, Energie und Mobilität (IKEM): 2020

68 Accelerated Capital Allowance in Ireland <https://www.seai.ie/business-and-public-sector/business-grants-and-supports/accelerated-capital-allowance/>

- Introduce green taxes and tax rebates for energy efficiency and renewable energy projects. Energy is relatively cheap, as compared to the annualized costs of advanced technologies. At present, the VAT on energy sales is 12%, whereas energy efficiency measures are subject to VAT 21%. Apply lower tax on energy efficiency projects. For example, see the UK.⁶⁹

5.5. Regulatory Barriers

Finally, a range of legal barriers hinder the development and implementation of energy efficiency and renewable energy projects. These include:

- Lack of clear allocation of responsibilities to achieve common energy climate goals.
- Lack of stable renewable energy policy frameworks and policy direction. There is a particularly large investment gap in respect of renewable energy projects, which we have identified considering our analysis of the investments made so far and the funding available in the future.

Recommendation 12

- Plan and develop guidelines and legal norms (for example, considering cooperatives as possible project owners) that would allow local municipalities/residents to get involved in wind projects and share benefits;
- Introduce a tax reduction scheme for co-owned energy production (for example, wind cooperatives);
- Remove tax for self-produced electricity consumed within own property (currently there is a limit of the micro-generation volume).

Recommendation 13

- Set sector-specific emission reduction targets. Even though setting targets for different sectors is a politically difficult task, it will allow sectors to mobilize and carry out the necessary reforms—binding targets with a “carrot and stick” approach.

⁶⁹ The UK charges a reduced rate of 5% for controls for central heating and hot water systems, draught stripping, for example insulation fixed around windows and doors to reduce draughts, insulation on walls, floors, ceilings and lofts, solar panels, ground-source heat pumps, air-source heat pumps, micro combined heat and power units, and wood-fueled boilers: <https://www.gov.uk/tax-on-shopping/energy-saving-products> .

Conclusion

The report represented a plan which aims to help to mobilize capital for the projects addressing targets of the Latvian NECP in the areas of energy efficiency and renewable energy. The country's required investment in these projects is ca. EUR 4.45 billion in the period of 2021-2030. Available sources to address the investment need include revenues from selling emissions allowances through the EU ETS, subsidies available from the Modernization Fund and Next Generation EU, and the European Regional Development Fund (ERDF), as well as lending from the Latvian Development Finance Institution ALTUM and the European Investment Bank (EIB). Cumulatively, these sources may provide EUR 1.81 billion for financing energy efficiency and renewable energy projects over the next 10 years. Hence, there is a shortage of approx. EUR 2.63 billion in the next 10 years, which has to be tackled by attracting additional private and national budget investment.

There are, however, several barriers which hinder the development and implementation of energy efficiency and renewable energy projects and, consequently, the likelihood of closing the investment gap. From the literature review and interviews, we identified technical, information, organizational, financial, and regulatory barriers. Households, municipalities and businesses are often not aware of the possibilities of energy efficiency and renewable energy projects; likewise, they have poor understanding of their energy non-energy benefits. Industry operators and municipalities lack the necessary technical, organisational, legal and financial capacity for their identification, development and implementation. Even if apartment owners of multi-residential buildings are interested, they face a complicated decision-making process and logistics of accessing public subsidies. The Latvian market also lacks enabling market structures such as energy service companies, energy consultancies, and energy auditors. It also lacks long-term financing, as well as in general, the institutional and policy reform recognizing the value and benefits of long-term investment strategies. The country provides access only to grant-based support and it does not have sufficient financial vehicles and/or financial instruments for energy efficiency and renewable energy projects. Finally, the legal barriers include a lack of clear allocation of responsibilities to achieve common energy climate goals and, in particular, a lack of a stable renewable energy policy frameworks and policy direction.

To address these barriers, we prepared thirteen sets of recommendations, which are briefly summarized below:

1. Invest in cooperation and exchange of information between universities and policy makers, establish a centralized information hub and convening body, disclose information on the existing building information system, share information about the achievements of the multi-apartment building programme of ALTUM.
2. Stimulate a broader discussion at the political level and in general media about non-energy benefits of projects and take them into consideration during strategic decision-making, analyze the motivation of project beneficiaries to implement the projects in the past and develop an information campaign taking this into account, perform regular assessment of recent investment flows vs the investment gap in order to revise subsidy schemes that way adjusting under-/over-performing measures.
3. For the industry sector and municipalities, design and implement a PDA programme based on the experience of an administrated technical assistance programme of ALTUM, develop more standardized solutions based on the existing experience and results from other projects, standardize technical solutions and analytical tools (ready to use excel spreadsheets,

benchmarking tools) for project developers, involve the Latvian Chamber of Commerce and Industry and the Latvian Association of Local and Regional Governments as “co-owners” of the technical assistance and project development programme.

4. For residential and municipal building sectors, assign the leading role of managing projects to building management companies, municipalities, professional project managers and ESCOs, ensure the enforcement of law to ensure compliance with the minimum requirements for energy efficiency of buildings, transfer the functions of project supervision and quality control to the right institutions, create local ‘one-stop-shops’ or dedicated services, encourage housing management agencies to initiate and manage energy efficiency investment for a large number of buildings, provide lower-income homeowners with grants covering up to 100% of the costs, introduce means-tested tax incentives for the refurbishment of basic technologies, introduce off-balance sheet solutions to develop ESCO projects in the municipal and state building sector, include utilities in planning and implementation arrangements.
5. Provide energy efficiency benchmarks and “quick tools” for project developers for testing project ideas based on the real-world data, develop energy efficiency benchmarks for companies and buildings using the national building information system, create guidelines for project implementers using energy audits submitted by energy auditors, monitoring data, and information about the implemented projects.
6. Establish promotional training and upskilling of energy auditors and energy managers, alongside with the development of the technical assistance as described above, introduce regular certification schemes for the building sector specialists.
7. Assess the opportunities of supporting local producers of energy efficiency and renewable energy technologies, including public procurements, reduced taxation as part of the COVID-2019 recovery package and its implementation, etc.
8. Standardize the investment cycle in energy efficiency so that both, the supply and demand side of the funding scheme, know what to expect, develop loan schemes with a grant component, consider the EU support 2021–2027 and the ETS to attract private capital instead, target investment grants only at very specific (sub) sectors (e.g. vulnerable households) and measures (e.g. innovative technologies), take into consideration such fiscal instruments as carbon tax and tax rebates.
9. Expand green bonds using national financial institutions like ALTUM, national utility company *LATVENERGO* and other special-purpose private investment funds, expand instruments for the private rental market, including support for accessing the long-term funding and support for private project developers accelerating the construction of new residential buildings, that are currently planned by the Ministry of Economics, as well as for the renovation of the existing building stock.
10. Provide early-stage funding for long-term and low-interest investment funding schemes with technical assistance for project preparation. National or regional governments should introduce dedicated finance support schemes for energy communities to help them during the planning and project set-up phases.
11. Introduce green taxes and tax rebates for energy efficiency and renewable energy projects. At present, the VAT on energy sales is 12%, whereas energy efficiency measures are subject to VAT 21%. Apply lower tax on energy efficiency projects.
12. Plan and develop guidelines and legal norms that would allow local municipalities/residents to get involved in wind projects and share benefits, introduce a tax reduction for co-owned energy production (for example, wind cooperatives), remove tax for self-produced electricity consumed within own property (currently there is a limit of the micro-generation volume).
13. Set sector-specific targets in the NECP and allocate clear responsibilities avoiding overlaps, giving commitment, ownership, and direction for the respective sectors.