

Support to the Renovation Wave

Final Report

Technical Support Instrument

Supporting reforms in 27 Member States



Funded by
the European Union



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Abbreviations and concepts

Abbreviation, concept	Explanation
Agreement	Agreement No. REFORM/SC2022/143 between the Client and PwC EU Services EESV signed on 15 Dec 2022
APVA	Environmental Project Management Agency of the Ministry of the Environment of the Republic of Lithuania (Lithuanian: <i>Lietuvos Respublikos aplinkos ministerijos Aplinkos projektų valdymo agentūra</i>)
Client, DG REFORM	Directorate–General for Structural Reform Support of the European Commission
CPMA	Central Project Management Agency
CPO	Central Procurement Organisation
CPO LT	Central Procurement Organisation CPO LT
D1	The first deliverable of the Project – Inception Report
D2	The second deliverable of the Project – Analysis of the Lithuanian Energy Efficiency Programme for Public Buildings, and review of good practices from other European Union Member States
D2 Report	Final Report of Analysis of the Lithuanian Energy Efficiency Programme for Public Buildings, and review of good practices from other European Union Member States
D3	The third deliverable of the Project – Recommendations for setting up a Competence Centre in the Lithuanian Energy Agency
D3 Report	Final Report of Recommendations for Setting Up a Competence Centre in the Lithuanian Energy Agency
D4	The fourth deliverable of the Project – Roadmap for the development of a Project Preparation Facility in the Lithuanian National Promotional Institution
D4 Report	Final Report of Roadmap for the development of a Project Preparation Facility in the Lithuanian National Promotional Institution
D5	The fifth deliverable of the Project – Recommendations, roadmap, and trainings on the improvement of energy audit systems
D5 Report	Final Report of Recommendations and guidelines to improve the energy audit system
D5 Training Report	Report on the trainings for specialists carrying out energy audits in buildings
D6	The sixth deliverable of the Project – Recommendations and trainings on public procurement procedures for energy efficiency in public buildings
D6 Report	Final Report of Analysis on public procurement procedures for energy efficiency in public buildings
D6 Training Report	Report on the trainings for public procurement specialists
D7	The seventh deliverable of the Project – Final report
Energy Audit Methodology	Methodology for Conducting a Comprehensive Energy and Energy Resource Consumption Audit in Buildings
ESCO	Energy Service Company

Abbreviation, concept	Explanation
EU	European Union
LEA	Lithuanian Energy Agency
MoE	Ministry of Energy of the Republic of Lithuania
MoEI	Ministry of Economy and Innovation of the Republic of Lithuania
MoEnv	Ministry of the Environment of the Republic of Lithuania
NPI	National Promotional Institution
PENVA	Energy Consumption Audit in Buildings IT Program
PPO	Public Procurement Office
Programme	Lithuanian Energy Efficiency Programme for Public Buildings
Project	Project "Support to the "Renovation wave""
PwC	UAB "PricewaterhouseCoopers"

Disclaimer

The Final Report was prepared by UAB "PricewaterhouseCoopers" (hereinafter – PwC) for The Directorate–General for Structural Reform Support of the European Commission (hereinafter – Client or DG REFORM), implementing the Agreement No. REFORM/SC2022/143 between the Client and PwC EU Services EESV signed on 15 Dec 2022 (hereinafter – Agreement). The Project activities are carried out in cooperation with the main beneficiaries – Ministry of Energy of the Republic of Lithuania (hereinafter – MoE), Ministry of Environment of the Republic of Lithuania (hereinafter – MoEnv), Lithuanian Energy Agency (hereinafter – LEA), National Promotional Institution (hereinafter – NPI) and Environmental Project Management Agency of the Ministry of the Environment of the Republic of Lithuania (hereinafter – APVA).

Our comments in the Final Report are provided for the exclusive use of the Client and principal beneficiaries, and are governed by the Agreement, unless otherwise agreed in writing by the parties. We assume no responsibility and no duty of care for the use of our comments for any purpose other than that specified in the Agreement or against any third parties.

We base our comments on the evaluation of the information and facts provided to us according to the criteria agreed upon with you in advance. Courts and other authorities may come to different conclusions. We assume that the information provided to us is accurate, complete, and adequately reflects the relevant factual and legal issues related to the content of this Report. We have not researched or verified the information and documents provided to us.

This Report was produced with the financial support of the European Union (hereinafter – EU). Its contents are the sole responsibility of the author(s). The views expressed herein can in no way be taken to reflect the official opinion of the EU.

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Introduction

The Final Report is a concluding part of the Project. The goal of the Project is to contribute to solving the public building renovation barriers in Lithuania, including:

- insufficient pipeline of public building renovation projects;
- long and complicated public procurement procedures;
- inaccurate energy audits.

The Final Report was prepared by implementing the seventh deliverable of the Project – Final report (hereinafter – D7). The objectives of this Report are to:

- summarize the activities carried out throughout the Project and highlight key results achieved;
- provide the action plan for the implementation of prioritised recommendations;
- present the obstacles encountered and share lessons learned.

To prepare the Final Report, the Final Workshop with the Steering Committee and Working Group members was organized to present the draft version of the Final Report and to prepare an action plan for the implementation of the prioritised recommendations.

The Report consists of the following chapters:

- Chapter 1 “Overview of the Project”, in which a brief general overview of the Project activities, as well as Project monitoring indicators achieved are presented;
- Chapter 2 “Summary of Project deliverables”, in which summary of each deliverable produced and key results achieved are presented;
- Chapter 3 “Prioritisation of recommendations for implementation”, in which the results of beneficiary institutions’ evaluation of suggested recommendations during the final workshop are presented;
- Chapter 4 “Action plan for the implementation of the prioritised recommendations”, in which the action plan prepared by and in consensus of all beneficiary institutions during the final workshop is presented;
- Chapter 5 “Project outcome and impact indicators”, in which indicators for the European Commission and the Lithuanian authorities to monitor the outcome and impact of the Project after the conclusion of the Agreement are proposed;
- Chapter 6 “Obstacles encountered, and lessons learned”, in which the key challenges encountered during the Project, as well as key lessons learned are outlined.

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Executive summary

Overview of the Project deliverables

To achieve the outcome of the Project – to form the pipeline of financially viable public building renovation projects for increasing energy efficiency – a total of 7 deliverables have been included within the Project. While the first deliverable of the Project – Inception Report (hereinafter – D1) and D7 serve as the introductory and finalising component of the Project, respectively, the aims of remaining deliverables were to provide practically implementable recommendations and tools that would improve public building renovation in Lithuania. An overview of all Project deliverables is provided in the Figure below.

Deliverable	Deliverable 1: Inception Report	Deliverable 2: Analysis of the Programme, and review of good practices from other EU member states	Deliverable 3: Recommendations for setting up a Competence Centre in LEA	D4: Roadmap for the development of a Project Preparation Facility in the Lithuanian NPI	D5: Recommendations, roadmap and trainings on the improvement of energy audit systems	D6: Recommendations and trainings on public procurement procedures for energy efficiency in public buildings	D7: Final Report
Key outputs	<p>1. Report including the:</p> <ul style="list-style-type: none"> • Project scope • proposed approach and methodology • Project timeline • risk management and quality assurance information <p>2. Kick-off meeting</p>	<p>1. Report including the:</p> <ul style="list-style-type: none"> • analysis of the Programme's implementation between 2014–2020 • analysis of the ESCO model application in Lithuania • analysis of public building renovation goals for 2030 and the prospects to attain them • challenges and roots causes for the implementation of the Programme • analysis of public building renovation practises in foreign countries • recommendations for addressing the identified challenges and their root causes <p>2. Document aimed at mapping out the resources available to project promoters</p>	<p>Report including the:</p> <ul style="list-style-type: none"> • analysis of the current situation of the LEA • analysis of foreign competence centres • basis for the further development of the Centre • recommendations for further development of LEA Competence Centre • overview of the recommendation implementation plan • information on workshops organised within D3 	<p>Report including the:</p> <ul style="list-style-type: none"> • analysis of technical assistance facilities operating in Lithuania • analysis of technical assistance facilities operating in international financial institutions • roadmap for the set-up of the Project Preparation Facility 	<p>1. Report including the:</p> <ul style="list-style-type: none"> • overview and barriers of the energy audits performed in public buildings system • analysis of energy audit systems in foreign countries • recommendations and guidelines for the improvement of the energy audits system • analysis of the Energy Audit Methodology in Lithuania and in foreign countries <p>2. Two full-day trainings for energy auditors performing audits in buildings</p> <p>3. Report on the trainings mentioned above, including recommendations for future trainings</p>	<p>1. Report including the:</p> <ul style="list-style-type: none"> • analysis of the legal context of public procurements • analysis of institutions and organisations operating within public building renovation procurements • analysis of public building renovation, public procurement organisation and contract execution processes • important aspects and barriers of public procurement • statistical analysis of public procurements and available methodological assistance • analysis of public procurement aspects in foreign countries • conclusions on the identified barriers and recommendations for the improvement of the public procurement processes <p>2. Standard document template sets for procurements related to:</p> <ul style="list-style-type: none"> • energy audits performed in buildings • design services (including implementation supervision) • technical maintenance • construction work <p>3. Four half-day trainings for public procurement specialists from organisations overseeing public buildings</p> <p>4. Report on the trainings mentioned above, including recommendations for future trainings</p>	<p>1. Report including the:</p> <ul style="list-style-type: none"> • summary of Project deliverables, • prioritisation of recommendations for implementation • action plan for the implementation of prioritized recommendations • Project outcome and impact indicators <p>2. Final workshop</p>
Beneficiary	<p>Primary: DG REFORM, all beneficiaries</p>	<p>• Primary: MoE, MoEnv</p> <p>• Secondary: LEA, NPI, APVA</p>	<p>• Primary: LEA</p> <p>• Secondary: MoE, APVA</p>	<p>• Primary: NPI</p> <p>• Secondary: MoE, MoEnv, APVA</p>	<p>• Primary: LEA</p> <p>• Secondary: MoE</p>	<p>• Primary: LEA</p> <p>• Secondary: APVA & NPI, MoEnv</p>	<p>Primary: DG REFORM, all beneficiaries</p>

Beginning of the Project

End of the Project

Figure 1. Overview of Project deliverables

Summary of Project deliverables

Summary of Deliverable 2 – Analysis of the Lithuanian Energy Efficiency Programme for Public Buildings (hereinafter – Programme), and review of good practices from other European Union (hereinafter – EU) member states (hereinafter – D2)

The objective of D2 was to identify the challenges to the implementation of the Programme in the period 2014–2020 and determine the ways for further improvement. Subsequently, the key result of D2 is a set of recommendations for overcoming or minimising the effect of the identified challenges and their root causes.

Summary of Deliverable 3 – Recommendations for setting up a Competence Centre in LEA (hereinafter – D3)

The objective of D3 was to develop recommendations for developing a Competence Centre in LEA. Subsequently, the key result of D3 includes a set of recommendations for new functions for LEA Competence Centre, alongside the comprehensive information on preparatory actions, execution of functions, required resources (time and competencies), and timeline.

Summary of Deliverable 4 – Roadmap for the development of a Project Preparation Facility in the Lithuanian NPI (hereinafter – D4)

The objective of D4 was to develop a roadmap for the development of a Project Preparation Facility in Lithuanian NPI, aimed to support public project promoters in designing and preparing renovation projects, thus aiding in the development of a project pipeline. Subsequently, the key result of D4 is a detailed roadmap that includes the proposed 3 activity areas, encompassing a total of 21 functions that the Project Preparation Facility could implement. Also, the following aspects are also included in the roadmap: the facility's cooperation with other institutions operating within public building renovation in Lithuania, required resources (both time and finance), communication and marketing strategy, timeline for the establishment and start of activities.

Note: Considering the consolidation of the Public Investment Development Agency (“VIPA”) within INVEGA that took place during the implementation of D4, the to-be prepared new INVEGA operational strategy and other changes within the aforementioned institutions, during the Final Workshop it was decided to re-evaluate which institution should establish Project Preparation Facility in 2026.

Summary of Deliverable 5 – Recommendations, roadmap, and trainings on the improvement of energy audit systems (hereinafter – D5)

The objective of D5 was to provide recommendations and guidelines for improvement of the energy audit system in public buildings in Lithuania, based on the identified barriers and foreign good practices, and organise trainings for energy auditors. Subsequently, D5 key results include (i) recommendations to improve energy audit system in Lithuania by addressing identified barriers and their root causes, as well as recommendations for improving the Methodology for Conducting a Comprehensive Energy and Energy Resource Consumption Audit in Buildings (hereinafter – Energy Audit Methodology); (ii) the organisation of two full days of trainings for energy auditors; (iii) additional suggestions for future trainings for energy auditors.

Summary of Deliverable 6 – Recommendations and trainings on public procurement procedures for energy efficiency in public buildings (hereinafter – D6)

The objective of D6 was to provide recommendations regarding improvement of public procurement procedures linked to energy efficiency in public buildings and prepare templates for relevant public procurements supported with trainings on their use. Subsequently, D6 key results include: (i) recommendations to improve the public procurement system related to energy efficiency in public buildings in Lithuania; (ii) organisation of four half-days of trainings for public procurement specialists; (iii) suggestions for future trainings of procurement specialists; (iv) guidelines for public procurements related to public building renovation; (v) 4 standard public procurement document template sets.

Prioritisation of recommendations and action plan for their implementation

To facilitate and complement the implementation of the Project's results, recommendations proposed within the scope of the Project were prioritised, and an action plan for the implementation of these prioritised recommendations was developed. To achieve this, two practical exercises were conducted during the Final Workshop with Steering Committee and Working Group members.

In the first exercise, beneficiary institutions assessed recommendations based on their potential impact on the increase of successfully completed public building renovation projects and their ease of implementation.

Compiling all the results of the first exercise, the second exercise involved interactive discussion with all beneficiary institutions to develop an action plan for the implementation of prioritised recommendations. The objective of the prepared action plan is to ensure clarity and accountability, foster stakeholder alignment, and facilitate the monitoring of the implementation process. This plan outlined implementation deadlines, responsible parties, and supporting parties.

Obstacles encountered and lessons learned

Obstacles encountered throughout the Project:

- **lack of ownership of the overall progress of the Project.** The participation of five beneficiary institutions has led to no institution being responsible for the overall Project results as well as assuming a role of moving the Project's progress further or its outcomes into implementation;
- **events between tender launch and the commencement of the Project altered the beneficiaries' perspectives and needs for specific Project outputs outlined in the Request for Services.** Due to the implementation of the Project commencing more than one year after the designation of the Request for Services, several events transpired which influenced changes in the needs for certain Project outputs from the beneficiaries' perspective.
- **lack of involvement of decision-makers from beneficiary institutions.** Irregular participation of the decision-makers of the beneficiary institutions, namely the Steering Committee members, resulted in a lack of inputs from the executive point of view regarding important and uncertain decision-making. This obstacle has also elevated the risk that the proposed recommendations may not be implemented.

Lessons learned throughout the Project:

- **there should be a main beneficiary responsible for the overall project and the implementation of its outcomes, as well as a dedicated project management setup at the beneficiary side.** Ensuring successful project implementation requires a horizontal decision-making institution as the primary beneficiary. For projects involving multiple institutions, appointing a project manager from the start is crucial for effective objectives achievement, providing timely feedback and consulting on stakeholder engagement activities.
- **the specific tasks and expected outcomes indicated in the Request for Services should be clearly re-calibrated and re-agreed, if required, during the Kick-off meeting.** This would facilitate service providers in assessing how to accommodate the evolving needs, aligning with DG REFORM, and ensuring compatibility with the requirements of the Request for Services.
- **practical involvement of the decision-makers from beneficiary institutions is instrumental to the success of the project.** Direct involvement of decision-makers can significantly enhance project effectiveness by providing insights and feedback on prepared results. This could ensure institutional commitment to implementing recommendations, contributing to increased project impact.

1 Overview of the Project

In this Chapter, a brief general overview of the Project is provided.

In the Figure below, the aims of the Project, as well its desired outcomes, and future impact are presented.




Project aim 	Outcome 	Impact 
To address and contribute towards solving the following challenges related to the public buildings renovation in Lithuania: <ol style="list-style-type: none"> 1. Insufficient flow of public building renovation projects 2. Long and complicated public procurement procedures 3. Inaccurate energy audits 	Pipeline of financially viable public building renovation projects for increasing energy efficiency	Increase in public building renovation rates in Lithuania and contribution to the achievement of Lithuania's commitments to the European Union (hereinafter – EU) and national climate transition goals

Figure 2. Project aim, desired outcome, and impact

To achieve the above-mentioned outcomes, a total of 7 deliverables have been included within the Project, namely D1–D7. While D1 and D7 themselves serve as the introductory and finalising components of the Project, respectively, the aims of D2–D6 were to provide practically implementable recommendations and tools that would improve public building renovation in Lithuania. An overview of the Project's deliverables is provided in the Figure below.

Deliverable	D1: Inception Report	D2: Analysis of the Programme, and review of good practices from other EU member states	D3: Recommendations for setting up a Competence Centre in LEA	D4: Roadmap for the development of a Project Preparation Facility in the Lithuanian NPI	D5: Recommendations, roadmap and trainings on the improvement of energy audit systems	D6: Recommendations on the procurement of public buildings
Key outputs	<ol style="list-style-type: none"> Report including the: <ul style="list-style-type: none"> Project scope proposed approach and methodology Project timeline risk management and quality assurance information Kick-off meeting 	<ol style="list-style-type: none"> Report including the: <ul style="list-style-type: none"> analysis of the Programme's implementation between 2014–2020 analysis of the ESCO model application in Lithuania analysis of public building renovation goals for 2030 and the prospects to attain them challenges and roots causes for the implementation of the Programme analysis of public building renovation practises in foreign countries recommendations for addressing the identified challenges and their root causes Document aimed at mapping out the resources available to project promoters 	Report including the: <ul style="list-style-type: none"> analysis of the current situation of the LEA analysis of foreign competence centres basis for the further development of the Centre recommendations for further development of LEA Competence Centre overview of the recommendation implementation plan information on workshops organised within D3 	Report including the: <ul style="list-style-type: none"> analysis of technical assistance facilities operating in Lithuania analysis of technical assistance facilities operating in international financial institutions roadmap for the set-up of the Project Preparation Facility 	<ol style="list-style-type: none"> Report including the: <ul style="list-style-type: none"> overview and barriers of the energy audits performed in public buildings system analysis of energy audit systems in foreign countries recommendations and guidelines for the improvement of the energy audits system analysis of the Energy Audit Methodology in Lithuania and in foreign countries Two full-day trainings for energy auditors performing audits in buildings Report on the trainings mentioned above, including recommendations for future trainings 	<ol style="list-style-type: none"> Report including the: <ul style="list-style-type: none"> analysis of the current situation of the LEA analysis of foreign competence centres basis for the further development of the Centre recommendations for further development of LEA Competence Centre overview of the recommendation implementation plan information on workshops organised within D3 Document aimed at mapping out the resources available to project promoters
Beneficiary	Primary: DG REFORM, all beneficiaries	<ul style="list-style-type: none"> Primary: MoE, MoEnv Secondary: LEA, NPI, APVA 	<ul style="list-style-type: none"> Primary: LEA Secondary: MoE, APVA 	<ul style="list-style-type: none"> Primary: NPI Secondary: MoE, MoEnv, APVA 	<ul style="list-style-type: none"> Primary: LEA Secondary: MoE 	<ul style="list-style-type: none"> Primary: LEA Secondary: MoE

Beginning of the Project

Figure 3. Overview of Project deliverables

The execution of the deliverables leaned heavily on the ‘as-is’ and foreign country analyses. All outputs were aligned with the relevant beneficiaries on an iterative basis, with an aim to address all their comments and feedback. Furthermore, to ensure proper execution of the Project and to track progress throughout its implementation, a list of indicators was proposed in D1. The indicators and their values reached are presented in the Table below.

Table 1. Overview of achieved Project monitoring indicators

#	Deliverable	Indicator
1.	D1	Kick-off meeting held
2.		Approved Inception Report
3.	D2	Approved report which consists of: (i) Review of the implementation of Programme, (ii) Foreign country analysis and Recommendations for the improvement of the Programme
4.		Organised workshops
5.	D3	Approved report which consists of: (i) 'As-is' analysis of the competence centre in LEA, (ii) Foreign country analysis and Recommendations and two options on 'to-be' situation for the set-up of the competence centre in LEA
6.		Organised internal workshop with LEA
7.	D4	Approved report which consists of: (i) 'As-is' analysis of technical assistance facilities in Lithuania, (ii) Foreign country analysis and Recommendations (iii) Practical roadmap to establish the Project Preparation Facility in Lithuania
8.		Organised dissemination / promotional events with decision-making institutions
9.	D5	Approved report which consists of: (i) Recommendations on improvement of the Energy Audit Methodology and Guidelines for energy audit preparation
10.		People trained in the organised training sessions
11.		Approved report (10 to 20 pages) on the trainings, incorporating feedback received & suggestions for future trainings
12.	D6	Approved report which consists of: (i) Existing barriers analysis; (ii) Foreign country analysis; (iii) Recommendations for improvement of the public procurement procedures performance linked to energy efficiency in public buildings
13.		Provided templates for energy audits, technical design, technical maintenance, and construction work
14.		People trained in the organised training sessions
15.		Approved report (10 to 20 pages) on the trainings, incorporating feedback received & suggestions for future trainings
16.	D7	Approved Final Report
17.		Organised workshop on the Final Report

In summary of the Table above all target indicators outlined in the D1 are achieved.

¹ Three internal workshops were organized to discuss the interim results of D3 (on 22 May, 3 July, and 8 August 2023).

² Prior to the trainings organized within the scope of D5 it was mutually acknowledged by DG REFORM and the beneficiary institutions that achieving the target of 150 participants is not feasible. This is primarily due to the limited number of individuals conducting audits in buildings, with only 65 people identified for this role. Among them, only 11 performed at least one audit in 2023. Please refer to the Section 2.4 for more detailed information on the organised trainings.

2 Summary of Project deliverables

In this Chapter, brief summaries of each Project deliverable – except for D1 (as it only outlines Project's implementation plan and activities to be carried out) – are presented, including outlining the activities carried out within their execution and presenting their key results.

2.1 Summary of D2: Analysis of the Lithuanian Energy Efficiency Programme for Public Buildings, and review of good practices from other Member States

The objective of D2 was to identify the challenges to the implementation of the Programme in the period 2014–2020 and determine the ways for further improvement. In this Section, the activities, outputs, and key results of D2 are presented.

2.1.1 Overview of D2 approach, performed activities and content of the report

The approach of and activities carried out within D2, as well as the content of the Final Report of Analysis of the Programme and review of good practices from other EU Member States (hereinafter – D2 Report) is presented in the Table below.

Table 2. Overview of activities carried out within D2 and the content of the D2 Report

Approach and activities carried out	Content of the D2 Report
<p>1. Analysis of the Programme implementation in 2014–2020</p> <ul style="list-style-type: none"> Carried out desk research to fully grasp the context of the implementation of the Programme in the period 2014–2020, incl. attainment of goals for 2020, use of available funding, key actors, and processes within the public building renovation field; Held interviews with beneficiaries, projects promoters and other stakeholders to identify the primary challenges and their root causes related to the mentioned context. <p>2. Energy Service Company (hereinafter – ESCO) model analysis</p> <ul style="list-style-type: none"> Conducted desk research to map out the processes and relationships of participants of ESCO projects; Carried out interviews with (i) an ESCO (ii) ESCO project promoters, (iii) Project beneficiaries and (iv) other related parties to validate the processes and challenges related to public building renovation implemented using ESCO model. <p>3. Analysis of public building renovation goals for 2030 and the prospects of their achievement</p> <ul style="list-style-type: none"> Conducted desk research to map out Lithuania’s obligations toward the EU and national goals for 2030; Carried out interviews with the MoE, NPI and APVA to gain insights on the financing measures planned; Analysed the impact renovation projects finished after 2020 and planned financing measures will have on the achievement of Lithuania’s obligations and goals for 2030. <p>4. Foreign country analysis</p> <p>Performed desk research and conducted interviews with foreign country experts to map out the public building renovation systems in Ireland, Spain, Czechia, Germany, Poland and identify practices that could be applied in Lithuania.</p> <p>5. Formulation of recommendations</p> <p>Developed detailed recommendations and measures (including possible alternatives) to address the challenges and their root causes identified with the help of the activities described above (1–3).</p> <p>6. Organisation of workshops</p> <p>Held two workshops with Project beneficiaries and the Steering Committee and one workshop with decision-making institutions, namely, the Ministry of Finance and the Office of the Government, to validate the proposed recommendations and measures, define the institutions responsible for the implementation of each proposed measure. The obtained feedback was incorporated into the D2 Report.</p>	<p>1. Analysis of the Programme implementation in 2014–2020</p> <ul style="list-style-type: none"> Outline of goals and obligations defined in legal acts; Analysis of financing measures used in the context of public building renovation; Overview of public building renovation governance and processes. <p>2. ESCO model analysis</p> <ul style="list-style-type: none"> Context of the ESCO model; Overview of key actors and processes; Overview of implementation of ESCO projects in the analysed period; Challenges related to the application of ESCO model. <p>3. Public renovation goals for 2030 and the prospects of their achievement</p> <ul style="list-style-type: none"> Overview of EU obligations and national goals for 2030, as well as planned financing measures for public building renovation; Calculation of the impact of public building renovation projects implemented after 2020 for achieving the goals for 2030; Analysis of the potential to achieve the Lithuania’s obligations and goals for 2030; Overview of challenges influenced by the commitments and goals and their impact on the construction sector. <p>4. Challenges related to the implementation of the Programme</p> <p>Overview of challenges and their root causes.</p> <p>5. Foreign country analysis</p> <ul style="list-style-type: none"> Methodology of the foreign country analysis; Summary of the analysis results (full results provided within one of the annexes of the D2 Report). <p>6. Recommendations for the improvement of the Programme</p> <p>Detailed information on recommendations and measures for the improvement of the Programme.</p>

2.1.2 D2 key results

After completing the activities listed above, the key result of D2 is a set of recommendations for overcoming or minimising the effect of the identified challenges and their root causes encountered during the implementation of the Programme between 2014–2020. The overview of these challenges and recommendations is presented in the Table below. The institutions responsible for the implementation of the measures were initially decided during the D2 Workshop with decision-making ministries and were later confirmed (or, in a few highlighted cases (market with *), updated) during the Final Workshop with all Project beneficiaries.

Table 3. Overview of challenges and root causes for the implementation of the Programme in the 2014–2020 period, and recommendations and measures for addressing them

Table legend

 Measures that have been implemented or implemented in some capacity since the completion of D2

 Measures that may not be as relevant at the current time as they had been when completing D2

Root cause	Recommendation	Measure	Responsible institution (–s)
Challenge 1. Public building managers lacked motivation to initiate renovation projects			
Actual energy consumption is not monitored, and public building managers are not obliged to report its consumption. As a result, increasing energy efficiency is not a priority to public building managers.	Recommendation 1. Increase the importance of monitoring of the energy consumption and energy efficiency in general at the governmental and municipal institutions.	Measure 1. Establish a mechanism (process, principles, rules) obliging public building managers to achieve annual energy efficiency targets and to regularly report to the MoE on the progress of achieving the mentioned targets.	<ul style="list-style-type: none"> • MoE – for establishing a mechanism for central government buildings • MoEnv – for establishing a mechanism for municipal buildings* • LEA – for monitoring
		Measure 2. Develop tools and methodology for monitoring of the energy consumption.	<ul style="list-style-type: none"> • LEA – for preparing the methodology • MoEnv*, Construction Sector Development Agency – for developing the IT tool
		Measure 3. Appoint an executive responsible for the energy efficiency in all institutions to be responsible for (i) monitoring of the energy consumption, and (ii) initiating the implementation of energy efficiency measures.	MoE (to incorporate the provision concerning the implementation of this measure into the Law on Increasing Energy Efficiency)
		Measure 4. Collect and analyse information on the public buildings which are planned to be renovated.	MoE

Root cause	Recommendation	Measure	Responsible institution (–s)
		Measure 5. Evaluate the need to centralise specific public buildings into the groups (e.g., schools, hospitals, cultural buildings) to transfer the responsibility for their renovation to a centralised manager.	MoE, MoEnv, Turto Bankas*, with other related ministries involvement
Challenge 2. Project promoters lacked: (i) methodological support and (ii) capacity to implement renovation projects			
Limited methodological support was provided to project promoters – there was a lack of an institution acting as a ‘one-stop-shop’ to assist project promoters on all arising issues.	Recommendation 2. Ensure that throughout all stages of public building renovation (preparation / planning, implementation, and monitoring) project promoters would be provided with sufficient methodological assistance on all arising issues.	Measure 6. Distribute the functions of all the institutions operating in the public building renovation field in a way that would: <ul style="list-style-type: none"> clearly separate institutions’ functions and responsibilities ensure the provision of assistance to project promoters on a “one-stop-shop” basis at all stages of the renovation promote close inter-institutional cooperation. 	The responsibilities are detailed within the outputs of D3, D4, D5 and D6
Project promoters lack (i) dedicated human resources and (ii) administrative capacity and experience to implement renovation projects.	Recommendation 3. Oblige project promoters to dedicate resources for the implementation of renovation projects.	Measure 7. Oblige project promoters to appoint a person who would be responsible for ensuring proper and timely administration of the renovation project – i. e., dedicate resources for public building renovation (internal or external).	MoE or MoEnv (depending on which institution prepares Project Financing Conditions)
	Recommendation 4. Develop the administrative capacity of project promoters to implement public building renovation projects.	Measure 8. Strengthen the dissemination of information targeted at project promoters and increase the number of events aimed at strengthening their administrative capacity to implement renovation projects.	MoE, MoEnv, LEA, NPI, APVA (depending on the purpose and content of the event)
	Recommendation 5. Ensure that project promoters are properly informed about the planned public building renovation financing measures and their conditions.	Measure 9. Assess the need for tools that would improve the quality of energy audits and develop them if needed.	LEA
Challenge 3. Budgets of public building renovation projects are insufficient / rigid			
The budgets calculated at the renovation planning stage are insufficient, because: <ul style="list-style-type: none"> once the construction phase begins, a need for additional funds often arises due to unforeseen work; the time period between the completion of the energy audit (when the budget is first estimated) and the completion of 	Recommendation 6. Implement additional measures that would ensure the financing necessary for the completion of renovation projects and cover unforeseen costs incurred for objective reasons.	Measure 10. Allocate a financial reserve within the public building renovation budget that could only be used after signing the contract with the service provider, if: <ul style="list-style-type: none"> additional construction tasks arise, which were not identified in the energy audit report or technical project; economic conditions change – for example, the prices of materials rise significantly. 	<ul style="list-style-type: none"> At the measure level – MoE / MoEnv, as well as NPI, APVA, Central Project Management Agency (hereinafter – CPMA); Creating a separate measure – Ministry of Finance

Root cause	Recommendation	Measure	Responsible institution (–s)
the renovation project is extensive. Thus, inflation and rising prices cause the need for more funds than initially planned.		Measure 11. Provide a sufficient period of time between publishing the project financing conditions and publishing the call for financing applications.	MoE / MoEnv, as well as NPI, APVA, CPMA
		Measure 12. Oblige or encourage project promoters to submit documents supporting the calculation of budget together with the financing application (e. g., not only the energy audit report, but also the technical project including price estimates).	MoE
The project budget is based on energy audit estimates which do not consider the implementation of measures unrelated to energy efficiency and are often based on outdated prices of work and materials – therefore, the budget is practically inaccurate / insufficient. This problem is revealed at the technical project preparation stage or during construction.	Recommendation 7. Implement additional mechanisms and information sources that would ensure the accuracy of the budget required for the planned measures.	Measure 13. Recalculate the renovation measure prices identified during the energy audit before submitting the financing application to NPI, if the energy audit was performed significantly earlier**.	MoE
		Measure 14. Motivate project promoters to submit the preliminary renovation proposals collected during market consultations to the NPI together with the financing application and the energy audit report.	MoE
		Measure 15. Refine the Energy Audit Methodology***.	LEA and MoE
Challenge 4. Failed public procurement attempts, which either extended the project implementation timeline or resulted in termination of the projects****			
The challenge of failed public procurements and its causes are analysed in more detail within the outputs of D6.			
Challenge 5. Due to the existing institutional structure: (i) the availability of financing measures for the renovation of central government and municipal public buildings differs, (ii) decisions regarding the (un)achieved results or manageable risks in the public building renovation field were not made in aligned and timely manner			
The division of responsibilities between MoEnv and MoE results in: <ul style="list-style-type: none"> financing measures for renovating municipal buildings being available later than for central government buildings: <ul style="list-style-type: none"> soft loans for municipalities were introduced in 2018, while they had been available for central government institutions since 2015; subsidies for municipalities were introduced in 2020, while they had 	Recommendation 8. Establish a horizontal mechanism to effectively plan and monitor the progress of public building renovation.	Measure 16. Ensure collaboration between institutions throughout the planning and implementation phases of the Programme and its measures by scheduling regular meetings among the representatives from the institutions involved in public building renovation.	<ul style="list-style-type: none"> MoE MoEnv, NPI, APVA, LEA, CPMA as needed Ministry of Finance (if needed) for making the “horizontal” decisions
		Measure 17. Ensure the inclusion of the Programme’s implementation within the strategic agenda of the Government (further including it within the prime minister’s portfolio of strategic projects). The Government would evaluate the solutions proposed by the inter–institutional group (see Measure 16), while the Office of the Government would act as a horizontal institution.	<ul style="list-style-type: none"> MoE – for initiating the inclusion process Office of the Government – for the inclusion

Root cause	Recommendation	Measure	Responsible institution (–s)
<p>(practically) been available for central government institutions since 2018;</p> <ul style="list-style-type: none"> the lack of a unified approach and control over public building renovation processes, including monitoring of progress, control of deadlines, and risk management. 			
<p>Challenge 6: Long time period between call for proposals for subsidies for public building renovation projects to the start of project implementation</p>			
<ul style="list-style-type: none"> In the case of the reimbursable subsidy measure No. 04.3.1–VIPA–V–101: “Renovation of state–owned buildings“, the evaluation of applications took a particularly long time; After evaluating the applications provided by project promoters, NPI issues a commitment letter, after which the project promoters fail to fulfil their obligations on time due to various reasons. 	<p>Recommendation 9. Systemise the information relevant to project promoters on the actions that need to be carried out at each stage of the renovation and prepare methodological guidelines for carrying out these steps.</p>	<p>Measure 18. Prepare methodological guidelines for project promoters that would include information on the actions that must be performed at every stage of the renovation, as well as other methodological documents to assist them in carrying out such actions.</p>	<p>LEA</p>
<p>Challenge 7: 20% of the funding that can be allocated to non–energy–efficiency measures is not sufficient to carry out the work mandatory to complete during the renovation</p>			
<p>Some of the public building renovation tasks are not related to increasing energy efficiency but are mandatory to complete by law. The budget that can be allocated to completing these tasks is insufficient.</p>	<p>Recommendation 10. Establish a mechanism for combined financing of public building renovation projects.</p>	<p>Measure 19. Create a combined financing mechanism, within the scope of which investments directly related to energy efficiency (financed with the Programme’ funds) and other necessary investments (financed with the funds of other financing sources) would be financed.</p>	<p>MoE, MoEnv, Ministry of Finance, with participation from APVA, CPMA, NPI, other related ministries*</p>
<p>Challenge 8: Few ESCO projects</p>			
<p>Lack of information about the ESCO model provided to both potential ESCOs and project promoters</p>	<p>Recommendation 11. Disseminate more structured information about the ESCO model and ESCO projects.</p>	<p>Measure 20. Create and actively disseminate a comprehensive and easily accessible information source on the ESCO model and its implementation in Lithuania.</p>	<p>Institution in which the Project Preparation Facility will be established</p>
		<p>Measure 21. Prepare guidelines for the initiation and implementation of ESCO projects that would include all of the information required by project promoters – for example, the steps of initiating ESCO projects, templates of the main documents.</p>	<p>Institution in which the Project Preparation Facility will be established</p>

Root cause	Recommendation	Measure	Responsible institution (–s)
		Measure 22. Organise regular trainings and events for public building managers about the initiation and implementation of ESCO projects (see Measure 8).	Institution in which the Project Preparation Facility will be established
		Measure 23. Publish and regularly update a publication about successfully implemented ESCO projects, in which project promoters would share good practices and lessons learned.	MoE or its authorised institution*
		Measure 24. Disseminate information about the ESCO model and ESCO projects via the Lithuanian Construction Association.	Inter-institutional group (see Measure 16)
Project promoters lack motivation to implement ESCO projects due to: <ul style="list-style-type: none"> • greater costs incurred during the renovation • the difficult process of initiating and implementing ESCO projects 	Recommendation 12. Reduce the costs incurred by project promoters during the implementation of ESCO projects.	Measure 25. Practically apply the possibility to combine the loan and repayable subsidy financing measures (which is allowed within the financing terms) within ESCO projects	MoE / MoEnv, as well as NPI, APVA, CPMA
	Recommendation 13. Ensure that project promoters are provided with sufficient methodological assistance.	Measure 26. Ensure that project promoters can receive methodological advice on all issues and queries related to the initiation and implementation of ESCO projects (see Measures 6–9).	Institution in which the Project Preparation Facility will be established, CPMA
Private sector companies lack motivation to participate in public procurements and implement ESCO projects due to: <ul style="list-style-type: none"> • insufficient budgets provided for projects; • significant initial investments required; • long payback period; • high financial and operational risks caused by (i) the incompletely determined scope of work during the energy audit, (ii) additional tasks unrelated to energy efficiency which have to be carried out, and (iii) no way to control the energy consumption habits of project promoters after the implementation of the renovation. 	Recommendation 14. Ensure that sufficient budgets are allocated for the renovation projects.	Measure 27. Ensure accurate and competitive investment budgets (see Measures 10–15).	See Measures 10–15
	Recommendation 15. Reduce the initial investment burden of ESCOs.	Measure 28. Ensure a smooth and simple process of advance payments during the implementation of ESCO projects.	NPI, APVA, CPMA
	Recommendation 16. Create favourable conditions for a shorter payback period for ESCOs.	Measure 29. Shorten the investment payback period, which is not attractive to ESCOs, and apply fixed interest rates.	NPI
	Recommendation 17. Reduce the financial burden of unforeseen construction work.	Measure 30. After the implementation of the ESCO project, make it possible for ESCOs to sell part of the monthly payments received from project promoters during the investment repayment period – i.e., future income – to another financial institution.	NPI

* Updated as a result of discussions during the Final Workshop.

** This requirement has been included within the Project Financing Conditions of the Modernisation Fund reimbursable subsidy published at the end of 2022 and is planned to be included within the Project Financing Conditions of the reimbursable subsidy planned to be published in 2024.

*** During the implementation of D2, the Energy Audit Methodology that had been introduced in 2008 had still been valid. It was updated and came into force on 1 July 2023. This measure is only relevant to the extent that was identified within the scope of D5.

**** While this challenge was defined within the scope of D2, recommendations corresponding to this challenge and its root causes were not elaborated in further detail within the D2 Report as it is the main topic of D6.

In addition to the recommendations which are aimed at addressing the specific challenges for the implementation of the Programme in the 2014–2020 period, additional recommendations aimed at addressing challenges related to the construction sector and the need for additional financing to achieve Lithuania’s commitments to the EU and national goals for 2030 were proposed. An overview of these recommendations is provided in the Table below.

Table 4. Overview of D2 recommendations for improving the public building renovation system at the general level

Area	Recommendation	Measure	Responsible institution (–s)
Cooperation with the construction sector	Recommendation 18. Increase cooperation with construction sector businesses, with an aim to increase interest in public building renovation projects.	Measure 31. Re–establish cooperation with the institutions representing construction sector firms and maintain consistent communication.	Inter–institutional group (see Measure 16)
		Measure 32. Proactively publish information about public building renovation processes and planned or implemented changes.	MoE, MoEnv, APVA, CPMA, NPI, LEA*
Need for additional funding	Recommendation 19. Allocate additional funding for the implementation of public building renovation projects.	Measure 33. Identify additional sources of funding and, as needed, create financing measures for public building renovation during the 2021–2030 period (after 2024).	MoE, MoEnv, Ministry of Finance*

* Updated as a result of discussions during the Final Workshop.

Together with the D2 Report, a document aimed at mapping out the resources available to project promoters was prepared at the request of the beneficiary institutions. The following aspects are included in the document:

- key details of the planned financing measures for public building renovation projects, including information on the functions of the institutions involved in public building renovation field;
- the detailed steps of both central government and municipal public building renovation projects, including information sources relevant at the different stages;
- examples of successfully completed renovation projects;
- contacts of the main institutions involved in public building renovation.

2.2 Summary of D3: Recommendations for setting up a Competence Centre in the Lithuanian Energy Agency

The objective of D3 was to develop recommendations for developing a Competence Centre in LEA. In this Section, the activities, and key results of D3 are presented.

2.2.1 Overview of D3 approach, performed activities and content of the report

The approach of and activities carried out within D3, as well as the content of the Recommendations for Setting Up a Competence Centre in LEA (hereinafter – D3 Report) are presented in the Table below.

Table 5. Overview of activities carried out within D3 and the content of the D3 Report

Approach and activities carried out	Content of the D3 Report
<p>1. Analysis of the current situation</p> <ul style="list-style-type: none"> Carried out desk research on to understand the context in which LEA Competence Centre is operating (basis for the establishment, objectives, and functions); Conducted desk research and interviews to the define the gaps in which public building managers lack support (analysed what interactions LEA Competence Centre, NPI, APVA and CPMA have with the public building managers); Conducted a survey and analysed its results on competencies of the Centre's employees and distribution of time allocated to perform its functions; Carried out interviews with LEA and MoE to define the directions for future development of the Centre. <p>2. Analysis of competence centres operating in foreign countries</p> <ul style="list-style-type: none"> Performed desk research as well as conducted surveys and interviews with foreign country experts to gather information about and identify good practices of the competence centres operating in Ireland, Poland, Sweden, Germany, Slovakia; Carried out a further analysis of identified good practices, categorised them and ranked their relative importance. <p>3. Development of recommendations for further development of LEA Competence Centre</p> <p>Developed comprehensive descriptions of functions (including the required resources and competencies for the implementation of each function, as well as the timeline for their implementation) in line with: (i) the future development directions emphasised during prior interviews; (ii) results of the foreign country analysis; (iii) results of the survey on competencies of the Centre's employees and distribution of time allocated to perform its functions; (iv) results of other Project deliverables.</p> <p>4. Organisation of workshops</p> <p>Organised three internal workshops with the beneficiary institutions (two workshops with LEA and MoE; one – with all beneficiary institutions) to discuss and align the interim results of the D3 (e.g., the results of performed analyses, as well as proposed recommendations). The feedback gathered was integrated in the D3 Report.</p>	<p>1. Overview of the current situation</p> <ul style="list-style-type: none"> Overview of objectives and activities of the LEA Competence Centre and its human resources; Presentation of the inter-institutional context; Directions for future development, based on the discussions with representatives from LEA and MoE. <p>2. Analysis of competence centres operating in foreign countries</p> <ul style="list-style-type: none"> Overview of the analysed competence centres; Development of the long-list of practices that could be applied in the Centre; Development of the short-list of practices that could be practically implemented and should be further elaborated when formulating recommendations for the Centre's further development. <p>3. Basis for further development of LEA Competence Centre</p> <p>Overview of the basis for further development of the LEA competence centre based on prior chapters of the D3 Report and discussions with LEA and MoE.</p> <p>4. Recommendations for further development of LEA Competence Centre</p> <ul style="list-style-type: none"> Comprehensive descriptions of each proposed new function, namely, preparatory actions, execution of function, required resources (time & competencies); Recommendations & required resources related to partnerships, communication and visibility, monitoring and reporting. <p>5. Overview of the recommendation implementation plan</p> <ul style="list-style-type: none"> Summary of the competencies currently available and those required in the future to implement recommendations, including suggestions on acquiring any needed competencies; Summary of internal and external resources needed (time- & finance-wise); Timeline for implementing recommendations in 2024–2025 (incl. resources needed for each quarter). <p>6. Workshops</p> <p>Information on workshops implemented in the scope of D3 – their content, participants, and use of the results.</p>

2.2.2 D3 key results

After completing the activities listed above, the key result of D3 is a set of recommendations for new functions for LEA Competence Centre, alongside the comprehensive information on preparatory actions, execution of function, required resources (time and competencies) and timeline.

First of all, considering that public building managers currently lack methodological support for preparing and implementing renovation projects, the LEA Competence Centre should dedicate more attention and resources to fulfilling consulting and support functions. Additionally, it should contribute to increasing the capacity of other stakeholders, particularly auditors. Secondly, recognizing the LEA Competence Centre's previous involvement in analytical functions on an ad-hoc basis and the identified need for more in-depth analysis, the Centre should further develop its analytical activities. Furthermore, in addressing issues related to inaccurate energy audits, the Centre should initiate changes to improve the overall energy audit system. The general overview of all proposed new functions is provided in the Table below.

Table 6. Overview of new LEA Competence Centre functions proposed within the D3 Report

Purpose of the function	Essence of the function
1. Provision of information and consultations at all stages of public building renovation	
To deepen the public building managers' knowledge and develop their competencies to successfully implement public building renovation projects.	LEA Competence Centre should act as the "first-contact-point" for public building managers to help them solving any public building renovation related queries related to (i) public building renovation process, responsible institutions & functions; (ii) financing & preparation of relevant documentation; (iii) energy audit, energy efficiency measures, implementation of public building renovation projects.
2. Provision of information and consultations on financing options for public building renovation projects	
To increase and improve the availability of information on financing opportunities for public building renovation in one place.	LEA Competence Centre should provide information and advice on financing measures (incl. conditions of financing) available in Lithuania for public building renovation and, if needed, direct public building managers to the NPI, APVA, CPMA for more detailed information on specific financing measures.
3. Provision of consulting services for the project promoters implementing selected public building renovation projects	
To help project promoters to successfully implement public building renovation projects.	LEA Competence Centre should provide personalised consultations to project promoters throughout the full renovation project cycle (exemplary topics: required actions, risks and challenges, success factors). If chosen, LEA Competence Centre could also consult public building managers on energy efficiency matters, e. g. when choosing which energy efficiency measures should be implemented.
4. Provision of trainings for public building managers and auditors	
To increase the capacity of organizations operating in public building renovation field, namely, for: <ul style="list-style-type: none"> public building managers – to strengthen their capacity to apply energy efficiency principles and to actively initiate and successfully implement energy efficiency measures auditors – to gain and strengthen their competencies in preparation of energy audits and contribute toward the increase of energy audit quality 	LEA Competence Centre will be responsible for the set-up and organisation of regular trainings for both public building managers and auditors (this may include integrating professional development activities with the auditors' qualification update process) as well as updating of the to-be auditors training programme.
5. Participation in the monitoring of actual energy consumption in public buildings (as per requirements of the amended Energy Efficiency Directive)	
To contribute toward the implementation of the obligation of the amended Energy Efficiency Directive to reduce the amount of final energy consumed by public bodies	LEA Competence Centre should engage in analytical type of activities, such as: <ul style="list-style-type: none"> collection and analysis of actual energy consumption data provided by public building managers;

Purpose of the function	Essence of the function
by at least 1.9% compared to previous years.	<ul style="list-style-type: none"> • preparation of the reports to monitor and account for the progress towards achieving the energy efficiency target to the European Commission and relevant stakeholders; • preparation of the potential solutions or actions required stemming from the results of the analysis of actual energy consumption data; • provision of advice to public building managers on how to prepare required information on actual energy consumption.
6. Identification of challenges related to public building renovation in Lithuania and proposition of the solutions to help combatting them within the competencies of LEA Competence Centre	
To contribute toward a smooth public building renovation process in Lithuania.	<p>LEA Competence Centre will monitor and analyse the processes related to public building renovation, the achievement of the goals and indicators and prepare proposals and recommendations for the necessary actions according to the situation. For example, LEA Competence Centre would be responsible for:</p> <ul style="list-style-type: none"> • presenting and initiating discussions on the identified challenges and potential solutions during the inter-institutional group meetings; • implementation of recommendations related to public procurement in the area of public building renovation, as recommended in the scope of D6.
7. Collection of information on planned future use of public buildings and renovation needs / plans	
To contribute toward the implementation of obligation of the amended Energy Efficiency Directive to ensure that at least 3% of the total floor area of heated and/or cooled buildings owned by public bodies would be renovated each year at least to be transformed into nearly zero-energy buildings.	<p>LEA Competence Centre will provide support to the MoE in compilation of the list of public buildings owned by central government and municipalities. If decided to put more emphasis on public building renovation planning, LEA Competence Centre should provide agreed scope of support to MoE with the public building renovation or transfer to Turto bankas plans (e. g. support with data gathering and systemizing, preparation of proposals for required corrective actions).</p>
8. Further improvement of energy audit system quality	
<p>To continue to improve the quality of the energy system in Lithuania by giving increased attention to:</p> <ul style="list-style-type: none"> • providing methodological assistance to auditors; • ensuring quality control of energy audit; • optimizing review process of energy audit reports; • engaging in proactive communication with auditors. 	<p>LEA Competence Centre will be responsible for implementing recommendations formulated in D5, namely:</p> <ul style="list-style-type: none"> • Recommendation 3: Update, regularly renew and disseminate the Set of Recommendations for Auditors Performing Energy Audits in Buildings; • Recommendation 4: Enforce the energy audit quality control mechanism outlined in the Description of the Procedure for the Training and Certification of Auditors, and define the cases (types of mistakes) for issuing warnings to auditors; • Recommendation 5: Proactively communicate with auditors and disseminate information and news related to energy audit preparation, verification, and methodological assistance; • Recommendation 6: Shorten the time for issuance of conclusion on energy audit report quality by improving energy audit verification process and allocating required time for the verification during peak periods; • Recommendation 7: Publish the energy audit report verification deadlines and the communication procedures during the verification process.

In addition to the descriptions of the new functions, D3 Report also contains other details related to their implementation, including:

- a list of available training courses for staff;
- recommendations for visibility and communication;
- a summary of the competencies currently available and those required in the future;
- the required internal and external resources (both time- and finance-wise);
- the functions implementation timeline for 2024–2025 (including the resources required for each activity every quarter).

The estimated timeline of execution of the new functions is provided in the Figure below.

2.3 Summary of D4: Roadmap for the development of a Project Preparation Facility in the Lithuanian National Promotional Institution

The objective of D4 was to develop a roadmap for the development of a Project Preparation Facility in Lithuania, aimed to support public project promoters in designing and preparing renovation projects, thus aiding in the development of a project pipeline. In this Section, the activities, and key results of D4 are presented.

Note: During the preparation of the Final Report of Roadmap for the development of a Project Preparation Facility in the Lithuanian NPI (hereinafter – D4 Report), the consolidation of Lithuanian NPIs took place. As a result, the Public Investment Development Agency (“VIPA”) was consolidated within INVEGA. Accordingly, INVEGA started preparing a new operational strategy, and other changes took place within the two aforementioned institutions. Therefore, it will be important to re-evaluate and decide which institution would be the most appropriate to establish the Project Preparation Facility in.

During the final workshop it was decided to re-evaluate the establishment of the facility in 2026.

2.3.1 Overview of D4 approach, performed activities and content of the report

The approach of and activities carried out within D4, as well as the content of the D4 Report is presented in the Table below.

Table 7. Overview of activities carried out within D4 and the content of the D4 Report

Approach and activities carried out	Content of the D4 Report
<p>1. Analysis of existing technical assistance facilities in Lithuania</p> <ul style="list-style-type: none"> Carried out desk research, analysing available information sources to define institutions that help project promoters in the public building renovation field and to map identified institutions' functions and scope of assistance; Carried out meetings with NPI, APVA, and LEA to redefine and supplement analysis and findings of above-described desk research. <p>2. Analysis of technical assistance facilities established in international financial institutions</p> <ul style="list-style-type: none"> Analysed technical assistance facilities operating in five institutions (InvestEU Advisory Hub, European Local Energy Assistance, KfW Development Bank, European Bank for Reconstruction and Development, European Energy Efficiency Fund) to identify functions and good practices of the said facilities. Within this analysis we conducted desk research, sent out information requests, and interviewed representatives of above listed institutions; Prepared the long-list of identified functions performed by analysed technical assistance facilities to form a basis for possible functions of Project Preparation Facility. <p>3. Development of the roadmap for the development of the Project Preparation Facility in the NPI</p> <p>Developed a detailed roadmap for the development of the Project Preparation Facility, including area of activities and functions, cooperation with other institutions operating within public building renovation in Lithuania, required resources, communication and marketing strategy, timeline for the establishment and start of activities.</p> <p>4. Organisation of dissemination / promotional events with decision-making institutions</p> <p>Carried out two meetings with beneficiary institutions to discuss the proposed functions and obtain additional insights regarding the recommended functions. The feedback gathered was integrated in the D4 Report.</p>	<p>1. Overview and gap analysis of existing technical assistance facilities in Lithuania</p> <ul style="list-style-type: none"> As-is analysis of VIPA's functions, organizational model, and resources related to activities in public building renovation field Inter-institutional context and division of functions between institutions consulting project promoters Definition of the basis for the establishment of the Project Preparation Facility <p>2. Results of the international financial institution technical assistance facility analysis</p> <ul style="list-style-type: none"> Methodology of the foreign country analysis; Summary of the analysis results (full results provided in the annexes of the D4 Report); Long-list of functions performed by the analysed technical assistance facilities. <p>3. Roadmap for the development of the Project Preparation Facility in the NPI</p> <ul style="list-style-type: none"> Principles for the Project Preparation Facility establishment roadmap development Description of the roadmap elements: <ul style="list-style-type: none"> areas of activity and functions; cooperation with other institutions operating within public building renovation in Lithuania required resources; communication and marketing strategy; timeline for the establishment and start of activities; Other circumstances relevant for the establishment of the facility.

2.3.2 D4 key results

After completing the activities listed above, the key result of D4 is a detailed roadmap for the development of a Project Preparation Facility in the Lithuanian NPI. Roadmap includes the proposed 3 activity areas, encompassing a total of 21 functions that the Project Preparation Facility could implement. An overview of the mentioned activity areas and their respective functions is provided in the Table below.

Table 8. Overview of Project Preparation Facility activity areas and functions proposed within the D4 Report

Areas of activity and functions
I. Development of financially viable project pipeline
<p>I.1. Develop a financially viable project pipeline, including:</p> <ul style="list-style-type: none"> • identify public building managers whose managed public buildings: (i) have the highest energy saving potential after renovation and (ii) whose renovation could be implemented as financially viable projects; • advise identified public building managers on renovation financing and Project Preparation Facility assistance possibilities.
<p>I.2. When project promoters contact the Project Preparation Facility, select the renovation projects that could receive its technical assistance and financing from the NPI.</p>
<p>I.3. Collect feedback from project promoters regarding their needs for investments in renovation projects and, together with the NPI unit responsible for financing public building renovation projects, make proposals to the MoE and MoEnv regarding opportunities to improve the availability of financing for the implementation of public building renovation projects.</p>
<p>I.4. Together with the LEA Competence Centre, APVA, CPMA and separately organize events on the topics of preparing public building renovation projects, to present the Project Preparation Facility's services and develop project promoters' abilities to prepare public building renovation projects.</p>
<p>I.5. Prepare and publish information on the topics of preparation of public building renovation projects and together with LEA competence centre, APVA and CPMA carry out joint communication campaigns in order to present the Project Preparation Facility's services and develop project promoters' abilities to prepare public building renovation projects.</p>
II. Provision of technical assistance to project promoters seeking to prepare and obtain financing for renovation project implementation
<p>II.1. When project promoters contact the Project Preparation Facility, advise on available financial instruments.</p>
<p>II.2. Based on the available expertise, advise the project promoters on which technical assistance facility can offer the most suitable technical assistance for their needs. Furthermore, facilitate the connection between the project promoter and the recommended facility.</p>
<p>II.3. Assist in formulating the concept for the renovation project, encompassing tasks such as preparing feasibility studies and evaluating alternatives for enhancing energy efficiency in terms of their economic viability and feasibility. This applies specifically when such requirements fall under the ministry's purview or involve a broader array of buildings.</p>
<p>II.4. Advise project promoters on financial matters, including financial instruments administered by NPI, business model, funding sources, financing and capital structuring, risk and debt management, in order to improve project promoter's access to financing.</p>
<p>II.5. When necessary, prior to carrying out the energy audits, advise project promoters and auditors on eligible measures to increase the energy efficiency to obtain financing from the NPI.</p>
<p>II.6. When project promoters contact the Project Preparation Facility, advise on filling out application for financing, eligibility of expenses, submission of documents and other administrative matters.</p>
<p>II.7. Prior application for financing submission, review the applications and provide recommendations for its improvement.</p>
<p>II.8. <i>[If a nationally applicable sustainability standard were to be adopted, the function could be carried out in the future by coordinating the scope of its implementation with the Green Finance Institute of the NPI]</i> Advise project promoters on the implementation of measures to comply with the requirements of the nationally adopted sustainability standard.</p>
<p>II.9. <i>[The function could be performed in the future, if the relevant requirement arises]</i> Aid project promoters in conducting life cycle analyses of buildings planned for renovation.</p>

Areas of activity and functions

II.10. *[The function could be performed in the future, if the relevant requirement arises]* Assist project promoters to develop a plan to avoid environmental and health risks due to materials used in construction.

III. Consultation of project promoters on the application of ESCO model and promoting it for renovation

III.1. Prepare and, when needed, update the guidelines for the initiation and implementation of ESCO projects. Guidelines could specify the information needed for project promoters, including steps of the ESCO project initiation and other relevant information regarding ESCO model.

III.2. When project promoters contact the Project Preparation Facility, advise on available financial instruments.

III.3. Prepare and publish information on the topics of the ESCO model, including topics on the initiation and implementation of ESCO projects, the financing mechanism of the ESCO model, companies implementing ESCO projects, and presentations of good practices, to create a larger ESCO market in Lithuania and encourage project promoters to choose renovation implemented on the basis of this model.

III.4. Together with CPMA, carry out joint communication campaigns on the topics of the ESCO model and share the necessary information for the preparation of communication messages to create a larger ESCO market in Lithuania and to encourage project promoters to choose public building renovation implemented on the basis of this model.

III.5. Advise project promoters on the application of ESCO model.

III.6. Prepare and update standard ESCO model documents, including forms of typical contracts for energy saving services, and approve them in coordination with the Ministry of Finance and the CPMA. Subsequently, incorporate these documents into the guidelines for initiating and executing ESCO projects.

In addition to the activity areas and functions, the following aspects of the roadmap are also included in the D4 Report:

- cooperation with other institutions operating within public building renovation in Lithuania;
- required resources for implementation (both time– and finance–wise);
- communication and marketing strategy;
- timeline for the establishment and start of activities.

It is estimated that about ~3.4 full–time equivalents and ~€189.000 per year could be required for the Project Preparation Facility to operate in the full proposed scope. Based on the necessary steps to be taken before the start of its operations, the facility could begin operating within ~4 months after the decision to establish it is made.

2.4 Summary of D5: Recommendations, roadmap, and trainings on the improvement of energy audit systems

The objective of D5 was to provide recommendations and guidelines for improvement of the energy audit system in public buildings in Lithuania, based on the identified barriers and foreign good practices. In this Section, the activities, outputs, and key results of D5 are presented.

2.4.1 Overview of D5 approach, performed activities and content of the report

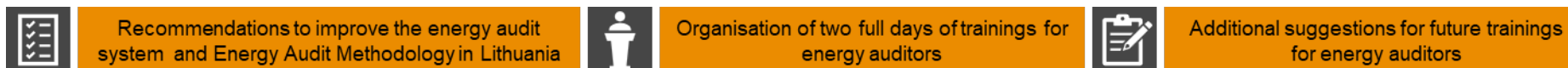
The approach of and activities carried out within D5, as well as the content (i) of the Final Report of Recommendations and guidelines to improve the energy audit system (hereinafter – D5 Report), and (ii) the Report on the trainings for specialists carrying out energy audits in buildings (hereinafter – D5 Training Report) is presented in the Table below.

Table 9. Overview of activities carried out within D5, and the content of reports prepared within D5

Approach and activities carried out	Content of the D5 Report
<p>1. Assessment of energy audit barriers</p> <ul style="list-style-type: none"> Carried out desk research to map out the context of the energy audit system relevant to identify and justify the barriers and their root causes; Carried out interviews with auditors, Vilnius Tech, Turto bankas, LEA and MoE to obtain information about potential energy audit system barriers & their root causes; Analysed the data provided by LEA on the process of energy audit report verification to identify and justify the barriers related to the insufficient quality of energy audits and long time to align and confirm energy audit reports Analysed information gathered as indicated above and compiled barrier and root causes tree. <p>2. Analysis of the energy audit systems in foreign countries</p> <p>Performed desk research as well as conducted surveys and interviews with foreign country experts to gather information on how energy audits are prepared and their quality is ensured in Czechia, Finland, Germany, Poland, Sweden.</p> <p>3. Development of recommendations and guidelines</p> <ul style="list-style-type: none"> With the involvement of energy audit experts, summarised the basis for formulating recommendations and, accordingly, developed a list of recommendations; Aligned the list of recommendations with LEA and MoE and gathered feedback for further elaboration of the recommendations. <p>4. Analysis of Energy Audit Methodology in Lithuania and in foreign countries</p> <ul style="list-style-type: none"> Assessed Energy Audit Methodology valid since 1st of July of 2023 to identify key changes introduced as well as to determine whether updated methodology responds to building renovation trends in EU, related to sustainability indicators and life cycle analysis in energy consumption efficiency measures assessment; Reviewed energy audit methodologies in five foreign countries (Czechia, Finland, Germany, Poland, Sweden) to determine possible improvements for Energy Audit Methodology in Lithuania; Developed recommendations for Energy Audit Methodology improvements; Carried out meetings with LEA and MoE to gather feedback on completed analysis. 	<p>1. Overview of the energy audit system and identification of related barriers</p> <ul style="list-style-type: none"> Context and overview of the Lithuanian energy audit system; Barriers and their root causes related to the energy audit system. <p>2. Foreign country analysis</p> <p>Summary of the results of the analysis of the energy audit system in foreign countries (full results provided in the annexes of the D5 Report).</p> <p>3. Recommendations and guidelines for carrying out energy audit and improvement of the energy audits system</p> <ul style="list-style-type: none"> Summary of the basis for formulating each recommendation; Detailed descriptions (incl. context, essence, and conditions for implementation) of the recommendations for addressing identified root causes. <p>4. Analysis of the Energy Audit Methodology in Lithuania and in foreign countries</p> <ul style="list-style-type: none"> Key updates and changes in Energy Audit Methodology in Lithuania; Energy audit methodologies in foreign countries and their comparison to Energy Audit Methodology in Lithuania; Recommendations for the improvement of Energy Audit Methodology in Lithuania.
<p>5. Organisation of trainings for energy auditors and preparation of the D5 Training Report</p> <ul style="list-style-type: none"> Conducted a survey of energy auditors to assess their needs related to professional development trainings, the results of which were later used for setting-up the training concept; Developed the training concept and aligned it with the beneficiaries (Working Group and Steering Committee members); Organised two training sessions for auditors and other public building renovation stakeholders. 	<p>Content of the D5 Training Report</p> <p>1. Information on the conducted trainings</p> <ul style="list-style-type: none"> Description of training participants Training curriculum and schedule; Introduction of training lecturers. <p>2. Received feedback</p> <p>Presentation and analysis of feedback for the trainings provided by the participants.</p> <p>3. Recommendations for future trainings</p> <ul style="list-style-type: none"> The main aspects of the recommendation regarding the organisation of future trainings proposed in the D5 Report; Additional recommendations, proposed on the basis of the feedback received from training participants.

2.4.2 D5 key results

After completing the activities listed above, D5 key results include:



Recommendations proposed in the D5 Report

Recommendations to improve energy audit system

Two main barriers related to the energy audit system in Lithuania were identified within the scope of D5. The third barrier was identified within the scope of D2 – while it is not directly related to the energy audit system, it has a significant impact on the implementation of renovation projects (part of the projects were not completed due to insufficient budgets, which were based on EA reports). 10 recommendations were proposed to solve these barriers, each aimed at addressing different root causes, including: (i) improving auditors’ competences, (ii) enforcing the energy audit quality control mechanism (iii) shortening the time for issuance of conclusions on energy audit report quality, and (iv) enhancing the accuracy of budgets for public building renovation. The barriers, their root causes, and recommendations proposed for addressing them, are provided in the Table below.

Table 10. Overview of barriers and root causes for carrying out energy audits in Lithuania, and recommendations for addressing them proposed within the D5 Report

Root cause (–s)		Recommendations
Barrier 1. The quality of energy audit reports does not always meet the requirements outlined in the Energy Audit Methodology or Project Financing Conditions, which may result in a greater workload for both LEA and auditors		
Auditors sometimes lack competence to conduct required quality energy audits	Auditors’ professional development trainings are rarely organised.	Recommendation 1. Organise professional development trainings for auditors regularly.
	Auditors currently encounter difficulties in calculating the necessary investments, particularly those which are unrelated to energy efficiency.	
According to LEA’s information, auditors repeat same mistakes in energy audit reports.	The auditors’ qualification training programme, developed in 2012, has not been updated, potentially not meeting the current and future auditors’ needs.	Recommendation 2. Update the auditors’ qualification training programme.
	According to LEA’s information, auditors do not take into account the Set of Recommendations for Auditors Performing Energy Audits in Buildings, and the most common mistakes made in energy audit reports, as included in the set.	Recommendation 3. Update, regularly renew and disseminate the Set of Recommendations for Auditors Performing Energy Audits in Buildings.
	The energy audit quality assurance mechanism which should be used for holding auditors accountable for inadequately prepared energy audit reports is not being implemented.	Recommendation 4. Enforce the energy audit quality control mechanism outlined in the Description of the Procedure for the Training and Certification of Auditors and define the cases when warnings to auditors should be issued.

Root cause (–s)		Recommendations
	The current communication between LEA and auditors lacks regularity in presenting the news related to the preparation and verification of energy audit reports and introducing the prepared methodological support material.	Recommendation 5. Proactively communicate with auditors and disseminate information and news related to energy audit preparation, verification, and methodological assistance.
Barrier 2. It takes a long time to align and confirm energy audit reports which may delay the start of implementation of public building renovation projects		
The process of aligning energy audit reports takes a long time. On average, the first review cycle of an energy audit report takes 73 days.	–	Recommendation 6. Shorten the time for issuance of conclusion on energy audit report quality by improving energy audit verification process and allocating required time for the verification during peak periods.
According to LEA’s information, LEA lacks resources to carry out the energy audit reports’ review.	–	
Communication between auditors and LEA employees during the energy audit reports’ review is ineffective.	Direct communication between the auditor and the employee reviewing the energy audit report is not currently possible. Responses to auditor inquiries by phone or email may experience delays.	Recommendation 7. Publish the energy audit report verification deadlines and the communication procedures during the verification process.
	Auditors lack information about the processes and deadlines when energy audit reports are being reviewed.	
Barrier 3. In the 2014–2020 period, some of the budgets for public building renovation projects, based on energy audits, were insufficient, which was one of the reasons why some public building renovation projects were not implemented		
Due to the long period between the execution of the energy audit and the actual implementation of the renovation project, as well as the economic changes that have occurred in that time (e.g., inflation, etc.), the rates used for calculating the budget of the project change.	–	Recommendation 8. [short-term perspective] Ensure that public building managers, when applying for funding, submit the applications with the up-to-date project budgets. Recommendation 9. [long-term perspective] When planning the investments for the forthcoming period, assess whether the short-term measures helped to resolve budget relevance barrier. If not, initiate larger-scale changes.
Some investments (both related and unrelated to energy efficiency) may not be accurately calculated when conducting the energy audit, potentially leading to increased costs after the project is started.	–	
* Recommendation 10 is related to the 3 rd barrier as it is aimed at solving the financing-related rather than energy audit system-related matters.		Recommendation 10. [additional] During the call for funding application submission, consider reorganising the energy audit report verification process so that LEA starts review only after the financing institution approves the applicant’s eligibility.

Recommendations to improve the Energy Audit Methodology

While no fundamental flaws were found in the Energy Audit Methodology, certain improvements might be done clarifying the mandatory measurements and further facilitating the use of dedicated tools (PENVA) within the preparation and verification of energy audit reports. All proposed recommendations are listed in the Table below.

Table 11. Recommendations for the improvement of the Energy Audit Methodology proposed within the D5 Report

Methodical recommendations
Recommendation 1. Clarify which measurements specified in the Energy Audit Methodology are mandatory.
Recommendation 2. Specify how to perform the measurements related to (i) lighting and (ii) temperature of hot water supplied by the hot water system.
Recommendations enabling simpler preparation and verification of energy audit reports
Recommendation 3. Require the use of the PENVA program during the preparation of the energy audit report and the submission of calculation files performed in the PENVA program together with the energy audit report.
Recommendation 4. Update PENVA program to enable the possibility of converting the annex tables in the program directly into the energy audit report.
Editorial recommendations
Recommendation 5. Link the annexes of the Energy Audit Methodology with the specific sections of the methodology.
Recommendation 6. Refine the wording of the energy parameter measurement definition.
Additional recommendations supplementing the Energy Audit Methodology
Recommendation 7. Publish the sources that auditors could use for determining the assumptions applied for calculating economic efficiency of energy efficiency measures.
Recommendation 8. Prepare guidelines for choosing energy efficiency measure combinations.

The need for additional updates should be assessed after verification of sufficient number of energy audit reports prepared using the updated methodology.

Key aspects of trainings for energy auditors and the subsequent D5 Training Report

To improve energy auditors and their assistants' competencies, two training sessions for energy auditors were organised on 9–10 January 2024. In accordance with the provisions of the Request for Services, the target audience for the trainings included:

- auditors performing energy audits in buildings;
- representatives from LEA, APVA, CPMA, and NPI.

However, as mentioned in Chapter 1 above, only 65 energy auditors with the right to perform to conduct energy audits in buildings have been identified, among which only 11 performed at least one audit during the period from 2021 to the first half of 2023. Due to this, the following target groups were also invited to participate in the trainings:

- assistants of the auditors performing energy audits in buildings;
- members of Lithuanian Association of Engineering Consulting Companies;
- building energy performance certification experts.

In total, 34 people participated in the training sessions. The main aspects related to the trainings and the received feedback are presented in the Figure below.

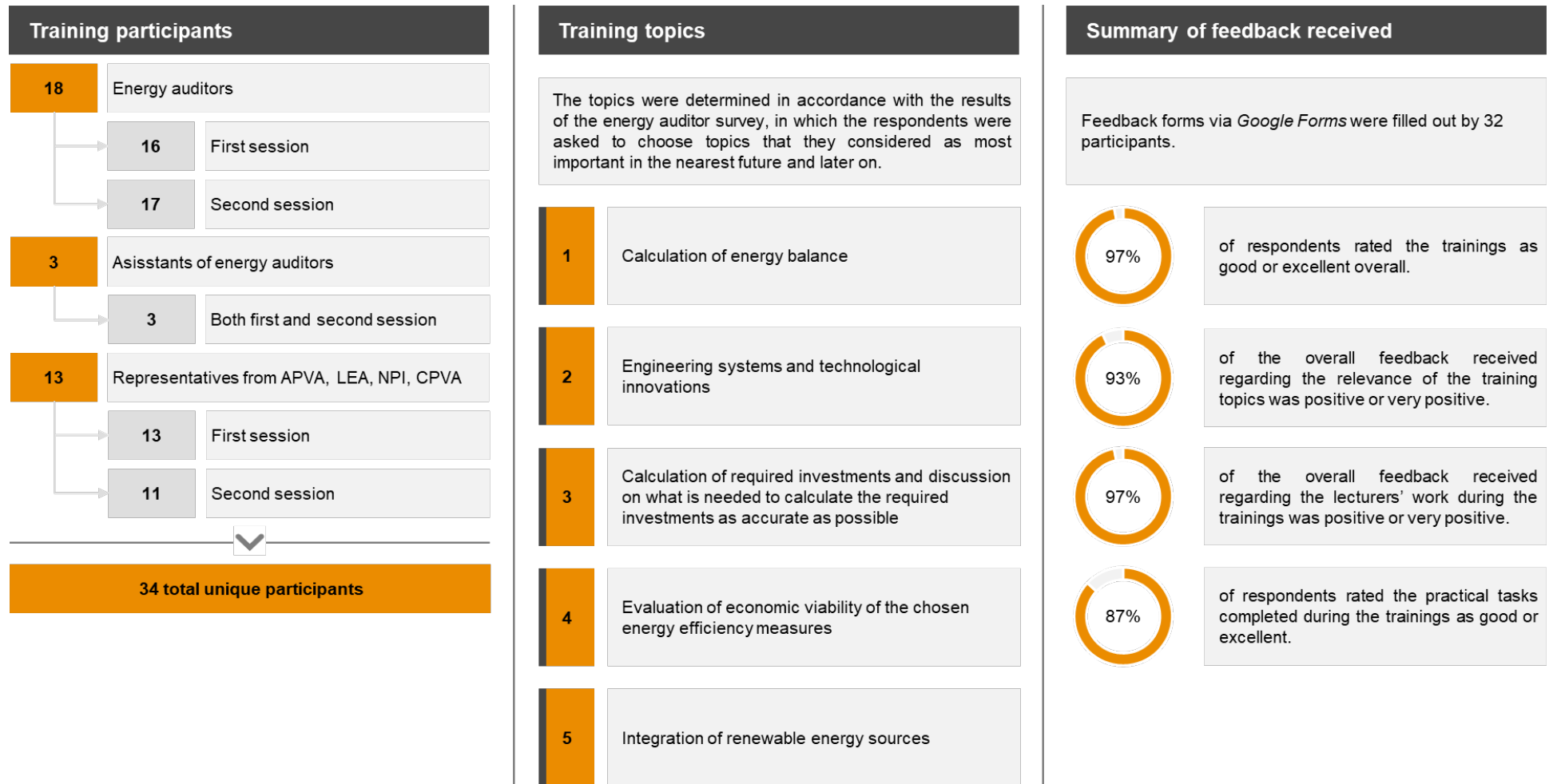


Figure 5. Summary of information related to the trainings carried out within D5 and the feedback received from participants

In addition to Recommendation 1 in the D5 Report, which focuses on aspects related to future trainings for auditors, additional suggestions for future trainings were proposed based on feedback received from trainings participants. These suggestions are presented in the Table below.

Table 12. Additional suggestions for future energy auditor trainings, proposed on the basis of feedback received for the trainings conducted within D5

Recommendation	Elaboration of the recommendation
<p>Recommendation 1. Organise trainings on the use of the PENVA program</p>	<p>During a discussion at the training sessions, a few auditors mentioned that they already use the PENVA program, stating that they have encountered difficulties with its usage. In the feedback questionnaire, 5 participants indicated the need for training on the use of the PENVA program. Additionally, one auditor suggested that training on this topic could enhance the efficiency of auditors' work.</p>
<p>Recommendation 2. Requirements for training programmes</p>	<p>Among the most frequently mentioned suggestions in the feedback from training participants were aspects related to practical tasks. Taking this into account, when organizing trainings or selecting training organizers, it is recommended to include the following requirements for the training programs:</p> <ul style="list-style-type: none"> • practical tasks should be incorporated within the programs; • after participants have completed the practical tasks, their solutions and correct answers should be analysed in detail together with the lecturers.

2.5 Summary of D6: Recommendations and trainings on public procurement procedures for energy efficiency in public buildings

The objective of D6 was to provide recommendations regarding improvement of public procurement procedures linked to energy efficiency in public buildings and prepare templates for relevant public procurements supported with trainings on their use. In this Section, the activities, outputs, and key results of D6 are presented.

2.5.1 Overview of D6 approach, performed actions and content of the report






The approach of and activities carried out within D6, as well as the content of (i) the Final Report of Analysis on public procurement procedures for energy efficiency in public buildings (hereinafter – D6 Report), (ii) the Report on the trainings for public procurement specialists (hereinafter – D6 Training Report) are presented in the Table below.

Table 13. Overview of activities carried out within D6, and the content of reports prepared within D6

Approach and activities carried out	Content of the D6 Report
<p>1. Preparation of D6 Report:</p> <ul style="list-style-type: none"> • Current situation analysis <ul style="list-style-type: none"> - Carried out desk research, analysing the relevant sources, such as the main acts regulating public building renovation, to define public procurement system barriers, typical public procurement mistakes and other relevant aspects related to public procurement; - Carried out meetings with Project beneficiaries and public building renovation stakeholders (construction sector firms, project promoters, other) to further define and assess barriers; - Completed a quantitative analysis of completed public procurements to evaluate how the identified barriers manifest in practice. The methodological assistance measures, challenges of their application and existing standard contracts were also evaluated. • Foreign country analysis Performed desk research, sent out information requests and conducted interviews with foreign country experts to gather information and identify good practices in the field of public procurement in five countries (Germany, Ireland, Italy, Poland, Slovakia). • Development of recommendations Developed a list of recommendations for improvement of the public procurement system in line with the previously performed analyses, and information obtained during interviews and meetings. • Preparation of the final Report Held meetings with Project beneficiaries to gather feedback on the proposed recommendations and the draft report and integrated their input to prepare the final D6 Report. <p>2. Preparation of public procurement document templates</p> <ul style="list-style-type: none"> • Prepared public procurement document templates for: <ul style="list-style-type: none"> - energy audit; - technical project preparation; - construction work; - technical maintenance services, • Organised meetings with Project beneficiaries to align the document templates. <p>3. Organisation of trainings for public procurement specialists and preparation of the D6 Training Report</p> <p>Organised 4 training sessions for public procurement specialists, during which the most relevant topics related to public procurement were covered, followed by preparation of the D6 Training Report.</p>	<p>1. Analysis of the regulatory context</p> <ul style="list-style-type: none"> • Management of public buildings and their renovation; • Public procurement; • Construction process within public building renovation; • Energy audits. <p>2. Analysis of the institutions and organisations operating within the public building renovation procurements</p> <ul style="list-style-type: none"> • Overview of the institutional system; • Identification of responsibilities and systemic deficiencies and competences. <p>3. Process analysis</p> <ul style="list-style-type: none"> • Detailed information on the organisation of public building renovation processes; • Organisation of the public procurement procedure and implementation of contracts. <p>4. Public procurement features</p> <ul style="list-style-type: none"> • Features of EU investments and possible challenges; • Information on green procurements and possible challenges; • Centralised procurements and possible challenges. <p>5. Practice and methodological assistance</p> <ul style="list-style-type: none"> • Statistical analysis of chosen public procurements; • Overview of methodological assistance measures currently available to project promoters. <p>6. Foreign country analysis results</p> <ul style="list-style-type: none"> • Structure of the analysis of foreign country practices and its methodology; • Summary of good practices identified within the analysis and detailed analysis thereof. <p>7. Conclusions and recommendations</p> <ul style="list-style-type: none"> • Overview of the current public procurement situation and identified challenges; • Detailed recommendations for improvement of the public procurement process.
	<p>Content of the D6 Training Report</p> <p>1. Preparatory actions for the trainings</p> <p>Overview of the training concept, presentation of the creation process of the training programme and the material of the programme itself, and information on the selection of participants and organisation of registration processes.</p> <p>2. Training results</p> <p>Overview of the organisational aspects of the trainings, their participants, feedback collection process and results.</p>

2.5.2 D6 key results

After completing the activities listed above, D6 key results include:

	Recommendations to improve the public procurement system related to energy efficiency in public buildings in Lithuania		4 standard public procurement document template sets
	Organisation of four half-days of trainings for public procurement specialists		Suggestions for future trainings of procurement specialists
	Guidelines for public procurements related to public building renovation		

Barriers defined and recommendations proposed in D6 Report

12 barriers limiting successful completion of public procurement procedures and the contracts implementation were identified, with the lack of specific competences within the contracting authorities being the key issue. These barriers result in disturbances or even termination of renovation project implementation. All identified barriers are listed in the Table below.

Table 14. Overview of barriers related to the public procurement system identified within the D6 Report

No.	Barrier	Prominence and impact
1.	Lack of competence of contracting authorities	High
2.	Challenges of CPO LT catalogue: (i) Central Procurement Organisation CPO LT (hereinafter – CPO LT) procurement modules are not used / are inflexible, (ii) services / work quality of the suppliers from the CPO LT catalogue is not satisfactory.	
3.	Low interest of suppliers to participate in the public procurement tenders for public building renovation services.	
4.	Lack of competence / involvement of the suppliers participating in public procurement (winning by offering the lowest price).	
5.	Avoidance of taking effective defence measures by public buildings managers responding to improper performance of contracts.	
6.	The lowest price criteria and minimum qualification requirements for determining the winner of the tenders.	
7.	Long statutory terms of payment for services / works, lack of interim payments.	Medium
8.	Green public procurement requirements make the organization / execution / control of procurement more complex.	
9.	Limited funds or unclear identification of funding needs, and a lack of opportunities to reassess funding needs create obstacles for successful public procurement and renovation projects.	Low
10.	Lack of funding for renovation and adaptation to modern needs (i.e., for activities not related to energy efficiency).	
11.	Unequal competitive conditions between suppliers that are VAT and non-VAT payers in participation in public procurement.	
12.	Orientation to the procurement process, not the result.	

To address identified barriers and improve the quality of public procurement procedures for renovating public buildings, 5 directions of recommendations consisting of 18 prioritised measures were suggested. Proposed recommendations and measures are listed in the Table below.

Table 15. Recommendations and measures for the improvement of public procurement procedures proposed within the D6 Report

Recommendation		1. Improve competence and abilities of public buildings managers to implement renovation projects	2. Increase the quality of services and works related to renovation of public buildings	3. Increase the interest of suppliers in participating in public procurement tenders for the renovation of public buildings	4. Promote and improve the use of CPO LT electronic catalogue	5. Improve abilities of public buildings managers to apply green public procurement criteria when implementing renovation of public buildings
Measures	1 st priority	1.1. Execution of public procurement through CPO LT or other Central Procurement Organisation (hereinafter – CPO) / dynamic procurement system of public building managers.	2.1. External support for public buildings managers implementing renovation projects; 2.5. Strengthening safeguards against improper performance of contracts.	3.4. Balancing the rights, obligations, and responsibilities of the parties in renovation project implementation contracts.	4.1. Creation of specialized modules for the renovation of public buildings in the catalogue of CPO LT.	5.1. Integration of green public procurement criteria into public procurement documents.
	2 nd priority	1.2. Methodological support for public buildings managers.	2.3. Strengthening of minimum requirements for suppliers participating in public procurements for renovation of public buildings; 2.4. Strengthening the evaluation criteria and technical requirements for proposals.	3.1. Development of dialogue between central government institutions and other business stakeholders (including suppliers, relevant business association, other).	4.2. Increasing the dissemination of information regarding the possibilities using catalogue of CPO LT.	5.3. Trainings for public procurement specialists on the practical application of green public procurement criteria.
	3 rd priority	–	2.2. Strengthening state supervision of the activities of construction and construction participants.	3.2. Market consultations of institutions and public buildings managers on issues related to the implementation of public buildings renovation projects; 3.3. Aggregation of demand for renovation of public buildings.	4.3. Strengthening control of decisions regarding implementation of public procurement not through the CPO adopted by contracting authorities.	5.2. Preparation of methodological tools (guidelines) for green public procurement criteria 5.4. Methodological assistance in the field of green public procurement criteria application.

Key aspects of trainings for public procurement specialists and the D6 Training Report

Four half-day training sessions for public procurement specialists were organised between 22 November 2023 – 01 December 2023:

- two sessions were held live, in a conference centre in Vilnius;
- two sessions were held virtually on *MS Teams*.

The main aspects related to the trainings and the received feedback are presented in the Figure below.

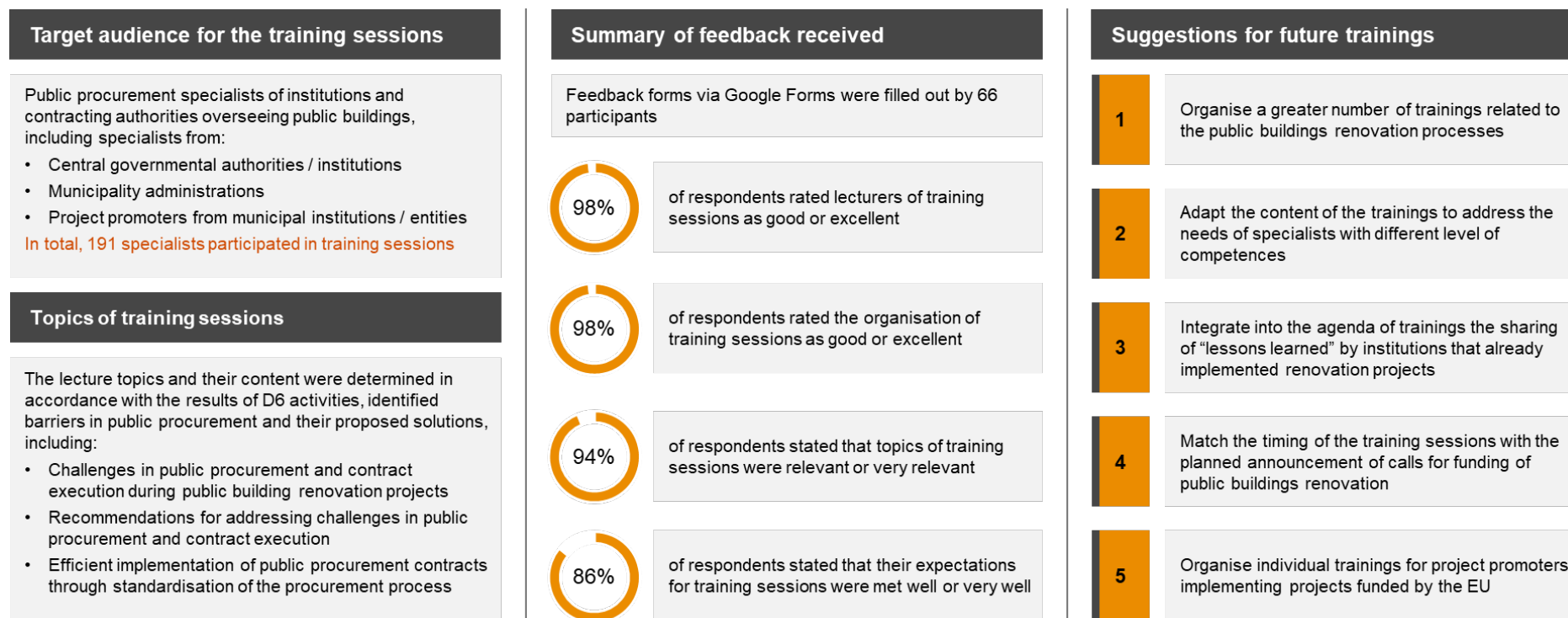


Figure 6. Summary of information related to the trainings carried out within D6 and the feedback received from participants

Standard public procurement documentation templates

Within the scope of D6, 4 sets of standard public procurement document templates have been developed for the following procurement objects:

- energy audit services;
- design services (including implementation supervision);
- construction technical maintenance services;
- construction work.

Each document template set includes:

- technical specification;
- contract for services / work;
- minimum qualification requirements for suppliers;
- methodology for evaluating the economic efficiency of proposals.

Public procurement guidelines

After the preparation of the D6 Report, templates and organized trainings, public procurement guidelines were prepared. The guidelines include:

- detailed information on the barriers and recommendations proposed within the D6 Report;
- links to other institutions' methodological assistance resources and other relevant information.

3 Prioritisation of recommendations for implementation

In this Chapter, the results of the recommendation prioritisation exercise held during the Final Workshop are showcased.

Objective of the exercise and recommendation included in the assessment

On 11 January 2024, the Final Workshop was held, in participation of the Steering Committee and Working Group members representing all beneficiary institutions. To prioritise the proposed recommendations for implementation a practical exercise to assess recommendations was carried out to:

- gather inputs from all beneficiaries on recommendations relevant for all beneficiary institutions;
- determine which of those recommendations are expected to bring the highest impact and value.

Considering the objectives of the exercise, some of the recommendations were excluded from the assessment:

- those proposed within D3, as they were mostly only relevant for LEA;
- those proposed within D4, as the decision on the establishment of Project Preparation Facility is needed first.

Therefore, only the relevant recommendations from D2, and D6 were included in the assessment. Additionally, recommendations from D5, important for a broader scope of institutions in public building renovation, were also included.

Due to a different structure of the reports, during the exercise the following were assessed: (i) *measures* prepared in the scope of D2, (ii) *recommendations* prepared in the scope of D5, (iii) *implementation method* prepared in the scope of D6.

Instructions for practical exercise

The general instructions of the exercise were as follows:

- all participants from the same organisation were formed into groups (e.g., all participants from LEA formed group 1, participants from MoE – group 2, and so on);
- each group filled out a form, in which they assessed each recommendation / measure / implementation method's:
 - impact on the increase of successfully completed public building renovation projects, on a scale between 1 (very little impact) and 5 (very big impact);
 - ease of implementation, on a scale between 1 (easy) to 3 (difficult);
- the results of each group were added together, and the average impact and ease of implementation scores were calculated for each recommendation / measure / implementation method.

4 Action plan for the implementation of the prioritised recommendations

In this Chapter, the results of the exercise to prepare the action plan for the implementation of the prioritised recommendations held during the Final Workshop are showcased.

The objectives of this exercise were:

- following the assessment of recommendations / measures / implementation methods, define deadlines, responsible parties, and supporting parties for each prioritised recommendation / measure / implementation method;
- decide on the deadline for the decision regarding the establishment of the Project Preparation Facility.

Steps of the exercise

The steps of the exercise were as follows:

- following the assessment of recommendations / measures / implementation methods, all of them were categorised in accordance with their average impact score and ease of implementation rating. The categories are presented in the Table below;

Table 16. Recommendation / measure / implementation method categories

Impact rating (scale: 1–5)	Ease of implementation (scale: easy–medium difficulty–difficult)	Category
Between 1 and 2.4	Any	Low impact
Between 2.5 and 3.4	Any	Medium impact
Between 3.4 and 5	Any	High impact
Between 2.5 and 5	Easy	High or medium impact, “quick win”

- the recommendations / measures / implementation methods which were determined to fit into the last 2 categories showcased in the Table above (either high impact or a “quick win”) were discussed further with all participants of the Final Workshop and were included in the prepared action plan.

The result of the exercise was the preparation of an action plan for the implementation of prioritised recommendations / measures / implementation methods, including implementation deadlines, responsible party, and supporting party⁴. Action plan is presented in the Table below.

⁴ Responsible and supporting parties were pre-filled as indicated in the scope of D2 and D6. However, some of them were updated as a result of discussions during the Final Workshop.

Table 17. Action plan for the implementation of prioritised recommendations / measures / implementation methods

Recommendation	Measures (if applicable)	Measure implementation methods (if applicable)	Deadline	Responsible institution	Participating / supporting institution
D2: Analysis of the Lithuanian Energy Efficiency Programme for Public Buildings, and review of good practices from other Member States					
Recommendation 1. Increase the importance of monitoring of the energy consumption and energy efficiency in general at the governmental and municipal institutions	Measure 1. Establish a mechanism (process, principles, rules) obliging public building managers to achieve annual energy efficiency targets and to regularly report to the MoE on the progress of achieving the mentioned targets NOTE: Compliance with the obligations could be ensured by: (i) including the energy efficiency goals within the key performance indicators (KPIs) of ministry / municipality / public sector institution managers; or (ii) imposing sanctions for not achieving the targets / fulfilling the obligations by, for example, reducing appropriations of funds for operating public buildings.	N/A	2025 Q1	<ul style="list-style-type: none"> MoE – for establishing a mechanism for central government buildings MoEnv – for establishing a mechanism for municipal buildings* 	LEA – for monitoring
	Measure 2. Develop tools and methodology for monitoring of the energy consumption.		End of June 2025	<ul style="list-style-type: none"> LEA – for preparing the methodology MoEnv, Construction Sector Development Agency – for developing the IT tool* 	–
	Measure 3. Appoint an executive responsible for the energy efficiency in all institutions to be responsible for (i) monitoring of the energy consumption, and (ii) initiating the implementation of energy efficiency measures.		2025 Q1	MoE – for including the provision within the Law on Energy Efficiency Increasing	–
	Measure 5. Evaluate the need to centralise specific public buildings into the groups (e.g., schools, hospitals, cultural buildings) to transfer the responsibility for their renovation to a centralised manager.		2025 Q4	MoE, MoEnv, Turto Bankas*.	Other related ministries

Recommendation	Measures (if applicable)	Measure implementation methods (if applicable)	Deadline	Responsible institution	Participating / supporting institution
Recommendation 10. Establish a mechanism for combined financing of public building renovation projects.	Measure 19. Create a combined financing mechanism, within the scope of which investments directly related to energy efficiency (financed with the Programme' funds) and other necessary investments (financed with the funds of other financing sources) would be financed.		End of 2024 ⁵	MoE, MoEnv, Ministry of Finance*	APVA, CPMA, NPI, other related ministries
Recommendation 18. Increase cooperation with construction sector businesses, with an aim to increase interest in public building renovation projects.	Measure 32. Proactively publish information about public building renovation processes and planned or implemented changes.		2024 Q1 ⁶	MoE, MoEnv, APVA, CPMA, NPI, LEA	–
Recommendation 19. Allocate additional funding for the implementation of public building renovation projects.	Measure 33. Identify additional sources of funding and, as needed, create financing measures for public building renovation during the 2021–2030 period (after 2024).		End of 2026	MoE, MoEnv, Ministry of Finance*	–
D5: Recommendations, roadmap, and trainings on the improvement of energy audit systems					
<i>[short-term perspective]</i> Ensure that public building managers, when applying for funding, submit the applications with the up-to-date project budgets	N/A		2024 Q2	MoE, MoEnv	–
D6: Recommendations and trainings on public procurement procedures for energy efficiency in public buildings					
Recommendation 2. Increase the quality of services and works related to renovation of public buildings	Measure 2.5. Strengthening safeguards against improper performance of contracts	Prepare standard documents for public procurement contracts proposing solutions regarding possible safeguards to be incorporated in procurement documents. NOTE: the standard contract templates were prepared within D6	2024 Q1	MoE (for informing the institutions participating in the implementation of public renovation projects (not limited to APVA, NPI, LEA, CPO LT, and CPMA) in	Supporting – APVA, NPI, LEA, CPO LT, CPMA*

⁵ Although the deadline, responsible party, and supporting party for the implementation of the measure were not discussed during the Final Workshop, this information was prepared by PwC based on the functions of institutions in public building renovation field and the anticipated call for proposals to receive financing for the renovation projects planned in June 2024.

⁶ Although the deadline, responsible party, and supporting party for the implementation of the measure were not discussed during the Final Workshop, this information was prepared by PwC based on the functions of institutions in public building renovation field.

Recommendation	Measures (if applicable)	Measure implementation methods (if applicable)	Deadline	Responsible institution	Participating / supporting institution
				writing about the prepared standard public procurement documents in the scope of D6 and recommend their use as methodological assistance measures)	
<p>Recommendation 3. Increase the interest of suppliers in participating in public procurements for the renovation of public buildings</p>	<p>Measure 3.1. Development of dialogue between central government institutions and other business stakeholders (including suppliers, relevant business association, other)</p>	<p>Coordinate standard public procurement documents and guidelines in the field of public building renovation with business representatives.</p>	<p>End of 2025</p>	<p>MoE and MoEnv (initiate orders to MoEI and other participating / supporting institutions)*</p>	<ul style="list-style-type: none"> • Coordinating – Ministry of Economy and Innovation of the Republic of Lithuania (hereinafter – MoEI) • Implementing – PPO • Supporting – APVA, NPI, LEA, CPO LT, CPMA
	<p>Measure 3.3. Aggregation of demand for renovation of public buildings</p>	<p>Recommendation for public building managers to carry out a self-evaluation of the managed portfolio of real estate to be renovated and after identifying the links between the real estate to be renovated – encourage the organization of renovation public procurement procedures at the same time. NOTE: the proposed practice should be included into the public procurement guidelines</p>	<p>2024 Q1</p>	<p>MoE and MoEnv (incorporate suggested practices into public procurement guidelines)*</p>	<p>–</p>
<p>Recommendation 4. Promote and improve the use of CPO LT electronic catalogue</p>	<p>Measure 4.1. Creation of specialized modules for renovation of public building in the CPO LT catalogue</p>	<p>Create subtypes of CPO LT modules adapted for public buildings renovation (improve existing modules) according to the recommendation / feedback provided by the contracting authorities and supporting institutions (i. e. APVA, NPI, LEA, CPO LT and PPO)**</p>	<p>2025 Q1</p>	<p>MoE (initiate order to CPO LT)</p>	<ul style="list-style-type: none"> • Coordinating – CPO LT • Implementing – CPO LT • Supporting – APVA, NPI, LEA, CPO LT, PPO
		<p>Coordinate newly developed CPO LT modules with interested institutions and business representatives according to the recommendation / feedback provided by the contracting authorities and supporting institutions (i. e. APVA, NPI, LEA, CPO LT and PPO).</p>		<p>MoE (initiate order to MoEI)</p>	

Recommendation	Measures (if applicable)	Measure implementation methods (if applicable)	Deadline	Responsible institution	Participating / supporting institution
	<p>Measure 4.2. Increasing the dissemination of information regarding the possibilities of the CPO LT catalogue</p>	<p>Dissemination of information to public building managers. Dissemination of information through various communication channels and means: (i) trainings and informational events for public buildings managers; (ii) press releases, articles, and separate sections on the websites of institutions participating in public buildings renovation and associations uniting business entities.</p> <p>Strengthening cooperation with business entities. Wide presentation of CPO LT to suppliers and associations uniting them, paying special attention to the regions of Lithuania.</p>	End of 2024	MoE, MoEnv	Coordinating and implementing – CPO LT
<p>Recommendation 5. Improve abilities of public buildings managers to apply green public procurement criteria when implementing renovation of public buildings</p>	<p>Measure 5.4. Methodological assistance in the field of green public procurement criteria application</p>	<p>Ensure the dissemination of information regarding the Green Public Procurement Competence Centre (in all institutions operating in the field of public building renovation) and directly refer purchasing entity specialists to the responsible contacts of the Green Public Procurement Competence Centre once necessary.</p> <p>Organize regular discussions with green public procurement policy-making institutions (MoEnv and MoEI) and business representatives in a working group format to discuss proposals for improving the regulation of green public procurement, adjustments of green public procurement criteria and application of good practices.</p>	End of 2024	MoEnv	<ul style="list-style-type: none"> • Coordinating – MoEI • Implementing – PPO <ul style="list-style-type: none"> • Coordinating – MoEI • Implementing – PPO • Supporting – APVA, CPO LT, NPI, LEA, CPMA*
<p>D4: Roadmap for the development of a Project Preparation Facility in the Lithuanian National Promotional Institution</p>					
Decision regarding the establishment of the Project Preparation Facility			End of 2026	MoE, MoEnv, Ministry of Finance	NPI, LEA, APVA, CPMA

* Updated as a result of discussions during the Final Workshop.

** Although the first implementation method for measure 4.1 did not meet the criteria mentioned above to be included in the action plan, it was decided during the discussion at the Final Workshop to include it in the action plan as well.

IMPORTANT: MoE should acquaint the institutions mentioned in the action plan with the plan, inform them of their roles in its implementation, and foster cooperation to achieve successful implementation.

A tracker for the implementation of recommendations, containing the roles of institutions responsible for implementation and other essential information about the proposed recommendations, measures, and implementation methods, has been prepared.

5 Project outcome and impact indicators

In this Chapter, the proposed indicators for monitoring the outcome and impact of the Project after the conclusion of the Agreement are showcased. Indicators have been presented and discussed with Steering Committee and Working Group members during the Final Workshop and have been update according to the received feedback.

Key indicators to monitor Project outcome, as well as their target values, relevant data sources and responsible parties are presented in the Table below.

Table 18. Key Project monitoring indicators

No.	Indicator	Units	Target value	Data source	Deadline	Responsible party
1.	Share of prioritised recommendations implemented	Percentage	100	Recommendation implementation tracker	By the end of 2026	MoE
2.	Share of remaining recommendations implemented	Percentage	60			
3.	Share of the LEA competence centre functions proposed within the D3 that are implemented	Percentage	85 (base or extended alternatives) ⁷	LEA data	By the end of 2025	LEA, MoE
4.	Share of public building renovation projects completed within the budget planned	Percentage	85	Information provided by institutions providing financing for public building renovation projects	By the end of 2030	MoE and MoEnv
5.	Average review cycles before the issuance of a positive conclusion on the quality of energy audit reports	Number	1.5 ⁸	LEA data	By the end of 2025	LEA
6.	Average duration for the issuance of a conclusion on the quality of energy audit reports submitted for the first time	Workdays	20 ⁹		By the end of 2024	
7.	Share of public procurement tenders in the public building renovation sector funded from EU funds performed via centralized public procurement measures	Percentage	75	Data from institutions providing funding (to be filled / marked by project promoters within project administration documents (e.g.,	By the end of 2025, then yearly	MoE and MoEnv together with NPI, APVA, and CPMA

⁷ Acknowledging that implementation of the new functions is largely dependent on designated human and financial resources.

⁸ Ibid.

⁹ As per the analysis completed within the scope of D5, a target of 20 business days is deemed feasible given the number of hours required to review energy audit reports during peak periods. The final decision on the shortened deadline should be made by LEA and MoE, depending on the allocated human resources.

				payment request from project promoter to institution providing funding)		
8.	Established inter-institutional working group, comprising representatives from MoE, MoEnv, NPI, APVA and LEA, with the inclusion of the Ministry of Finance and CPMA if necessary, to discuss and resolve matters related to the implementation of the Programme	Number	1	Order of the Minister of Energy	2024 Q1	MoE

In addition to the key Project monitoring indicators, an additional Project impact indicator is proposed and presented in the table below.

Table 19. Key Project impact indicator

No.	Indicator	Units	Desired value	Data source	Timeline	Responsible party
1.	Share of successfully completed public building renovation projects of all projects which received funding	Percentage	90	Information provided by institutions providing financing for public building renovation projects	By the end of 2030	MoE, MoEnv



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