

Recommendations and Conclusions for the BEEF Model Implementation Process



Work Package: 5

Work Package Leader: Austrian Energy Agency

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ABBREVIATIONS

BEEF	Building Energy Efficiency Facility
BULBEEF	Bulgarian Building Energy Efficiency Facility
COMA	Condominium Ownership Management Act
D&C	Dissemination and communication
dEEp	Energy Efficiency prioritised/focused renovation
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EE	Energy efficiency
EERSF	Energy Efficiency and Renewable Sources Fund
EIB	European Investment Bank
ELENA	European Local ENergy Assistance
EnPC	Energy Performance Contracting
EPC	Energy Performance Contract
ESCO	Energy Service (saving) Contracting
EUCF	European City Facility
EURIBOR	Euro Interbank Offered Rate
FI	Financial institutions
HVAC	Heating, Ventilation and Air Conditioning
KAPE	Krajowa Agencja Poszanowania Energii Spolka Akcyjna (Polish National Energy Conservation Agency)
LABEEF	Latvian Baltic Energy Efficiency Facility
MFH	Multi-family houses
M&V	Measurement and verification
NFOŚiGW	The National Fund of Environmental Protection and Water Management

NECP	National energy and climate plans
ÖBEEF	Austrian Building Energy Efficiency Facility
OSS	One stop shop
POLBEEF	Polish Energy Efficiency Facility
ROMBEEF	Romanian Energy Efficiency Facility
RRF	Resilience and Recovery Facility
TPF	Third party financing
VAT	Value Added Tax
WEG	Wohnungseigentum-Gesetz (Austrian Condominium Act)
EU	European Union
EC	European Commission

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1. Introduction

Lorem ipsum The FinEERGo-Dom project's goal was to replicate the successful implementation of the Latvian Building Energy Efficiency Facility (LABEEF). Project partners were to refine and replicate financial schemes to secure deep renovations (dEEp) of buildings for energy efficiency. The core of the project was to establish a pipeline of renovation projects with guaranteed savings. The projects were to be carried out in collaboration with Energy Service Companies (ESCOs), using LABEEF's Energy Savings Performance Contracts or Energy Performance Contracts (EPC + or EPC+) for renovation. Historically, Energy Performance Contracts (EPC)s have been used to optimise the energy system (energy generation and consumption), where energy savings are contractually guaranteed within a set period of time. Annual energy cost savings refinance upfront investment as well as maintenance costs. Preferably, the building owner experiences an increase in the value of the property, the contractor successfully refinances the initial investment and the tenants have lower energy costs.

In the case of EPC+, the renovation includes an additional 25% investment, covering approximately civil works such as accessibility improvements, restoration of common areas including the surroundings, as well as investments in renewables.

The results:

- The life of the building is extended, maintenance costs are decreased and the environmental impact is reduced;
- Preferably, the building owner experiences a significant increase in the value of the property (20–30%);
- The contractor successfully refinances the initial investment;
- And the residents have increased comfort, improved indoor climate and lower energy costs.

The National Fund of Environmental Protection and Water Management “NFOSiGW” supported by the Polish National Energy Conservation Agency (KAPE) created a priority programme “Renovation with guaranteed savings EPC Plus” based on the financing scheme, systems and procedures developed by the Latvian Baltic Building Energy Efficiency Facility’ “LABEEF” for the public and private sector. The role of the Fund was to structure the demand and establish the financing scheme in order to implement a pilot project – renovation of one or more buildings via energy contracting – supported by the online platform SUNSHINE. Other partner organisations in Austria, Slovakia, Romania and Bulgaria replicated the

concept of the financing scheme in their countries according to their national juridical framework.

In 2014, Funding for Future “F3”, a Dutch company, created LABEEF to scale up the deep renovation of residential and public buildings in Eastern Europe. It identified the main barriers to large-scale investments in building renovation: cost of transaction, lack of systematisation of procedures, lack of standardisation of documentation, processes and measures. LABEEF in turn has implemented the necessary legal documentation and refinanced six existing projects with private and co-financing. This has freed up the Service Company’s cash for further investments. Simultaneously, partner organisations have structured demand through the online platform SUNSHINE, which captures core information on building characteristics, legal and technical documentation, project design and costing, and the contract terms and its implementation, including monitoring.

The implementation of such a financial scheme has an enormous potential for energy efficiency savings and renewable energy across Eastern Europe. Eastern Europe today faces an unavoidable process: the multi-family apartment building stock is deteriorating, but apartment owners do not have sufficient access to resources and know-how to deal with the issue. Almost all multi-family apartment buildings currently occupied by Eastern Europeans were built during the Soviet era. In the 1990s, these apartments were privatised, but new owners did not (and still do not) have the financial resources and management skills to take proper care of the building, therefore, the conditions of these buildings, built when energy was “free”, continue. They were designed for durability, but not for energy efficiency. The situation of these buildings has slowly worsened, posing a threat to their inhabitants. There are over 26 million households living in multi-family houses (MFH) or single-family houses (SFH).

To a lesser extent, the same is true of buildings in the rest of Europe. Nearly 85% of existing buildings in Spain are rated below energy class E. The annual renovation rate is eight to ten times lower than the average in neighbouring countries and is insufficient to meet Spain's national energy and climate plans’ (NECP) objectives¹. According to the National Recovery and Resilience Plan, key challenges are the creation of an enabling environment for the growth of the sector, including adequate fiscal support, training and specialised workforce development. In France, the stock of existing buildings far outweighs that of newly

¹ Source: <https://www.renovate-europe.eu/wp-content/uploads/2018/09/Renovate2Recover-SPAIN.pdf>

constructed properties. There are seven million dwellings that are poorly insulated and almost four million households that struggle to pay their bills or go without heating. Interest-free eco-loans are the main funding mechanism for energy renovation works offered by the government. In spite of an encouraging start in 2009, when the initial target of 50,000 loans was exceeded, take-up of the scheme is low today, which can chiefly be explained by the fact that borrowing rates have been particularly low in recent years and the number of credit institutions issuing these loans has been in constant decline.² However, a standardised operation sheet for services under an energy performance contract was created at the end of 2018 to encourage the use of Energy Performance Contracts for the execution of installation works.

Despite the potential for energy savings and secure financing, such projects remain largely untouched. Lessons from the Sunshine project and Accelerate Sunshine projects (the previous similar EU-funded projects based on the same content as FinEERGo-Dom project) show that there is a gap between leadership and implementation, with a variety of factors stalling project success. Often, energy service companies do not have funding for their projects. Stakeholders or beneficiaries in the private sector, such as, industry, commerce or homeowners, may not yet understand the value of such financial mechanisms to guarantee better products with increased sales and better homes. The public sector still needs reassurance that the project implementation process will not be burdensome or lead to debt.

Successful implementation and uptake of energy efficiency financial instruments outcomes depends on the knowledge, skills, and practices of stakeholders at all levels – local to national. The FinEERGo-Dom project sees stakeholder engagement as critical to building ecosystem that supports successful project implementation. To do this, the aim was to involve and support different types of stakeholders directly in the project from the very beginning.

This report summarises the results of the partners (AT, BG, SK, RO) in replicating the LABEEF model and their efforts to implement pilot (renovation) projects through multi-stakeholder engagement, adaptation to the regulatory environment of each partner country and the use of the SUNSHINE online platform. The results and recommendations based on the Polish

² Source: https://energy.ec.europa.eu/system/files/2020-07/fr_ltrs_2020_en_0.pdf

experience are described in details in D5.4 “Recommendations for EPC+ investments on the basis of the Priority Programme implementation”.

2. Implementation in partner countries

This section introduces the context of each partner country with respect to energy efficiency. It then describes the key topics: energy contracting, stakeholder engagement, evaluation and conclusions from the stakeholder action plan implementation, use of the platform, replication of the LABEEF model and contracts, and finally market barriers in Austria, Bulgaria, Poland, Romania and Slovakia. Trends across our countries conclude the section.

2.1 Austria

2.1.1 Energy Performance contracting – situation and relevant stakeholders

Energy contracting has a long tradition in Austria. As early as 2005, Austria’s renowned contracting providers came together within the ÖGUT (Austrian Society for Environment and Technology) to form the umbrella organisation [DECA](#) (Dachverband Energie Contracting Austria). At the end of 2012, the corporate platform was also established as a separate legal entity (association) under the new name "Dienstleister Energieeffizienz und Contracting Austria" (Service Provider Energy Efficiency and Contracting Austria). This addresses all companies offering high-quality services for increasing energy efficiency and the increased use of renewable energy in Austria.

In Austria, there are several initiatives to establish quality criteria in the market:

- Since 2003, the Austrian Eco-label for Energy Contracting has been in force.
- In 2013, the DECA (Service Provider Energy Efficiency and Contracting Austria) become a legal entity with the aim of quality assurance in the Austrian energy service market.
- The Graz Energy Agency has developed the “Thermoprofit” brand, which is offered together with its business partners in the Austrian provinces

Contracting providers mostly come from the fields of building technology and automation, control and regulation technology, energy supply and civil engineering. They must have the necessary planning, energy technology and interdisciplinary expertise to act as general

contractors and ensure comprehensive energy (and, if necessary, structural) refurbishment of the building to a high standard of quality. The most common measures that have been carried out are replacement of boilers and optimisation of heating control systems, energy-efficient lighting, optimisation of ventilation and cooling, heat recovery, optimisation of room temperature, tariff optimisation, (thermal) insulation of facades, top and basement ceilings, and use of renewable energies (e.g. solar power or solar heat). Many public buildings, such as schools and kindergartens, have been optimised and renovated through energy contracting. While energy contracting has been implemented in many public buildings, the number of renovated residential buildings through energy contracting is quite low. These buildings are mainly social residential buildings owned by the provinces.

In the private sector, the situation is different because of the ownership structure. All the measures carried out on the building envelope (such as windows, external walls and roof) have to be accepted by the majority (sometimes 100%) of the owners. In the case of the buildings in need of renovation – mainly built in the 50s, 60s and 70s – the majority of the owners have moved out and rented the apartments. This means that they are not very interested in investing in renovation measures because they cannot charge more rent. The tenants cannot carry out thermal renovations because they do not own the apartment. In these cases, the renovation is generally only done when there is a “danger in delay” (e.g. water ingress or new legal requirements, such as barrier-free buildings) and there is usually a special repair budget to carry out these kinds of renovation.

The Austrian Condominium Act (WEG) has recently been amended. Prior to the 2022 amendment to the Austrian Condominium Act, many planned projects failed because no majority was reached at the owners' meeting when the necessary resolution was passed, unless all the owners of a property had the opportunity to express their views and vote on planned projects (even the owners not present at the meetings). The simple majority required for resolutions, measured in terms of the share of the apartment, was thus rarely achieved. Under the new law, a co-owner loses his or her right to vote if he or she does not attend the owners' meeting. Thanks to the WEG Amendment 2022, the owners' association has been able to pass resolutions more easily since 1. July 2022. As a result, fewer projects will fail to obtain the necessary majority in the future. The creation of a statutory minimum reserve has also become mandatory since then. The amendment has already made it easier for owners to make certain changes to their apartments. In particular, it has become much easier to install solar systems, charging systems for electronically operated vehicles and shading systems. Thus, the thermal renovation of the building can be implemented more easily if the budget is available.

There are funding schemes by the government for the thermal renovation of buildings or the replacement of heating systems. These subsidies are mostly used for single-family houses for the above-mentioned reasons. For families facing energy poverty, these subsidies cover up to 100% of the costs (for the replacement of the heating system).

In order to reach the climate change goals, and after the recent energy crisis, there are initiatives to raise the renovation of buildings, especially the replacement of heating systems (ban on fossil-fuelled systems by 2030). Nevertheless, this law has come to a halt because of the political situation (energy crisis started with the political situation in Europe in 2022).

During the implementation of the project, it was observed that the market situation for energy saving contractors and third party financing (TPF) is not so easy due to low interest rates and high subsidy levels (different subsidies for different measures at local or national level). At the beginning of the project, it was not clear that the low interest policy would last this long. For example, one of the main stakeholders in the ESCO business in Austria – the Energy Agency of the City of Graz – dropped out halfway through the FinEERGo-Dom project and is no longer providing any services in this regard.

2.1.1.1 Energy contracting for public buildings

The Austrian Federal Real Estate Company (Bundesimmobilien-Gesellschaft – BIG) is one of the largest real estate owners and managers in Austria. Its portfolio comprises around 2,000 properties with a fair value of about €15 billion. It consists mainly of educational buildings such as schools, universities and special purpose buildings, but also office and residential buildings. Since the BIG Group holds most of its properties in its own portfolio, there is great interest in the longevity of these properties, which have an occupancy rate of around 99.1%.

BIG manages properties throughout their entire life cycle, from project conception, planning support and construction to comprehensive management, maintenance, operational management and exploitation of the property.

Following a structured tendering process, the building owner (BIG and ARE³) and the building tenants (usually ministries) commission an external service company (contractor) to implement energy-saving measures in the buildings and to ensure the operational management of selected energy technology systems. The contractor implements measures

³ Austrian Real Estate Company, BIG's affiliate

that refinance themselves during the contract period (usually 10 years) through the saved energy costs and guarantees an energy cost saving according to which the payment is made.

According to the latest BIG Sustainability Report, 39% of ARE's and BIG's rental space (excluding universities, as they are not covered by contracting) is under contracting agreements. Since the start of contracting in 1999, around 205,000 tonnes of CO₂ and around €53 million in energy costs have been saved by 2021.

The evaluation of measures is done in cooperation with the stakeholders of the individual object (building or building complex). Subsequently, professional control of the operation is assumed by using energy saving contracting. BIG develops a tailor-made energy management service for the building tenants or users.

The FinEERGo-Dom project was presented to them at the beginning of the project and a representative of BIG was involved as a member of the Advisory Board of the project. The goal was to share the experiences of energy saving contracting in the public building sector with the countries participating in the project.

2.1.2 Financial support schemes in Austria

Austria has a long tradition of providing subsidies and financial support especially for residential buildings. Financial and technical support for thermal renovations and the installation of renewable heating systems is provided through several instruments. The Austrian provinces provide investment grants for energy-efficient improvements of the building envelope and the heating system, primarily in the residential sector. The level of subsidy depends on the thermal quality achieved and the efficiency of the heating system. Almost 50% of the energy savings generated in the residential building sector in recent years has been obtained through renovation and modernisation of heating and domestic hot water systems. Investments in thermal renovation of the building envelope accounted for 28% of the total savings⁴. In 2019, the domestic energy and environmental subsidy programme made €62.7 million available as subsidies for the phasing-out of oil heating systems and for thermal renovation of buildings. In 2021, this amount was raised to €650 million.

⁴ Source: Monitoringstelle Energieeffizienz, 2018

Despite all this financial support, the renovation rate (regarding deep renovations) is still around 1.4%, which is lower than the policy goals of >2.6%.⁵ According to the Environmental Report 2021, the average space heating demand of residential buildings in 2020 has decreased by 75%⁶ due to subsidy schemes for deep renovations.

2.1.3 Stakeholder engagement

In Austria, different types of stakeholders were identified, including ESCO companies, policy makers, financial institutions, housing associations, project developers, facility managers, public institutions and energy consultants.

Stakeholders were divided into these groups: Advisory Board, authorities (policy makers), ESCOs, financial institutions, building owners/facility managers/project developers and the public.

The first five stakeholder groups were contacted early and throughout the duration of the project and invited to meetings and workshops, such as round tables. Personalised emails, telephone calls, press releases and face-to-face meetings were used to promote the project, achieve its objectives and initiate a pilot renovation project. Out of more than 160 entities identified, about 22 stakeholders expressed interest in face-to-face meetings. Due to the pandemic, most of these meetings took place online. During these meetings and discussions, the aim of the project, the financing scheme and the role of ESCO companies were presented and discussed. Once the SUNShINE platform was completed (in the third year of the project), its structure and use became an important agenda item in the discussions.

The outcomes of the project at different stages were communicated to the public through social media and newsletters.

Advisory Board

Members included representatives of the Ministry for Environment, the klima**aktiv** management (the climate protection initiative of the Ministry), the Federal Real Estate Company (BIG), the manager of the Real Estate course at the University for Continuing Education, the CEO of the umbrella organisation of energy service companies (DECA), several

⁵ Source: IIBW und Umweltbundesamt, 2021

⁶ Source: <https://www.umweltbundesamt.at/fileadmin/site/publikationen/rep0821.pdf>

banks, energy consulting companies, energy service companies and the Austrian Environment Agency.

The aim of setting up an advisory board was to gain support for the market launch of the BEEF scheme, but also to pinpoint weaknesses in the project. After the energy saving contracts were translated and adapted to the Austrian law, a few members of the Advisory Board had the chance to give their opinion and feedback in meetings. The following topics were identified as most relevant during these meetings:

- 1) Monitoring after the ÖBEEF buy-in
- 2) Quality of the renovation and its quality assurance
- 3) Quality management and data security of the SUNShINE platform
- 4) Maintenance of the SUNShINE platform after the project's lifetime
- 5) User cooperation and user behaviour after the renovation
- 6) Tendering process and definition of the quality of measures
- 7) Long-term savings contracts in the building sector should have the possibility that necessary changes to the framework conditions can be made by mutual agreement. This will make it easier for all contracting parties to conclude long-term contracts.

The outcomes of these meetings were discussed during the project meetings to address any concerns that the Advisory Board might have.

Authorities (policy makers)

Stakeholder engagement included communication and meetings (in person and by phone) with four representatives of the **Ministry of Environment** (BMK). The main objective of these meetings was to present the project and its goals and get feedback from the Ministry, especially regarding the obstacles that an ESCO might face.

As insufficient financing is often an obstacle to the realisation of small-scale, climate-friendly projects, the **Austrian Green Investment Pioneers Programme** was brought to life to support projects in the fields of renewable energy, climate-friendly mobility and buildings, as well as industry that contribute to achieving Austria's climate and energy targets. Starting

in 2022, applications could be submitted to the Austrian Green Investment Pioneers Programme. The Austrian project team joined this effort to motivate interested parties and stakeholders to renovate buildings. This programme has been extended until 2023.

Another stakeholder in this category was the **Energy Agency of Graz** (GEA). GEA is the institution that supports communities and municipalities in integrating energy saving contracting into the tendering process for the renovation of municipality buildings.

ESCO companies

The Austrian project team met with representatives of the two main ESCO companies in Austria. The ESCOs mentioned that supporting measures and regulations should be in place to consider the residential sector for ESCO projects.

Financial institutions

Among the financial institutions, two showed interest in the idea of the project. They have not yet given loans to ESCOs under the FinEERGo-Dom project idea, but their representatives stated that they could consider the provision of loans once a pilot project is in place.

Building owners/facility managers/project developers

After initial email discussions, it was not possible to organise meetings with facility managers or project developers due to lack of time or interest. However, several meetings were held with representatives of building associations (online due to Covid-19). According to the GBV⁷, the umbrella organisation of non-profit building associations, there are 185 non-profit building associations in Austria. In total, they manage more than 938,400 apartments. In 2018, investments in renovation activities amounted to €975 million. Almost all non-profit rental housing built before 1980 has already been renovated thermally and energetically⁸. In the most intensive refurbishment years (around 2005 to 2013), the refurbishment output of non-profit organisations exceeded 12,000 apartments per year. Since then it has declined. Altogether, the majority of buildings are in good condition due to regular maintenance.

⁷ <https://www.gbv.at/>

⁸ https://www.gbv.at/Fakten_Analysen/Sanierung/

Therefore, there has been little interest in deep renovation based on the FinEERGo-Dom approach.

All the stakeholders mentioned above believe that monitoring of energy consumption plays an important role in large renovation projects and that a standardised calculation method is essential.

2.1.4 Evaluation and conclusions from the stakeholder action plan implementation

More than 160 stakeholders identified throughout the project were contacted by email, telephone and events. A wider audience was reached through articles and interviews in relevant journals. Only 22 of them were persuaded to have a face-to-face meeting to learn about the objective of the project.

The Ministry of Environment (BMK) being responsible for the implementation of the Sustainable Energy Action Plans is keen to implement new instruments for financing energy efficiency and green finance projects, as well as the new scheme introduced within the project.

Furthermore, the financial institutions – Oberbank and KommunalKredit (KPC), were both supportive of the idea at the meetings. Generally, the financial institutions provide loans after checking the background and examining the creditworthiness of the client. The monitoring result of a renovation project in terms of energy does not play an important role because it is assumed that the retrofit activity will reduce energy consumption.

The Federal Real Estate Company (BIG) supported the project with its experience in public buildings. During the meetings with BIG, the project team gained insight into the implementation of energy saving contracting in real life. Unfortunately, they do not have expertise in residential buildings and energy contracting.

Stakeholders operating as ESCOs were interested in joining the FinEERGo-Dom project to expand their business areas and business opportunities as they already have successfully implemented EPC projects in the private building sector (non-residential sector). They stated that the implementation of energy saving contracting in the residential sector is very difficult due to the Austrian ownership structure (changes to the building envelope and replacement of the heating system need to be accepted by all owners). This is one of the reasons why energy saving contracting works better in the non-residential sector in Austria.

Both ESCO companies were not interested in using the platform for monitoring the energy performance of the renovated building because they usually have their own monitoring tools and techniques.

Final beneficiaries, such as building owners and building associations, have lack of trust in the benefits of implementing energy efficiency measures regarding savings due to limited knowledge and technical assistance of building managers. Furthermore, facility managers stated that they had limited capacity and resources to start a renovation project with monitoring activities as in an EPC project. The challenge in engaging building owners and facility managers was to convince them into joining knowledge-sharing workshops and discussion rounds. Even though many were contacted and a few meetings took place, a pilot project could not be initiated.

Unfortunately, the lack of a compelling project in the residential sector in recent years has meant that stakeholders have not been motivated to start discussions on a possible pilot project.

The identified barriers are summarised in the following chapters.

Conclusions from interaction with stakeholders

The renovation of a multi-family building is a complex undertaking. Usually, older buildings have undergone several refurbishments during their lifetime. Often, windows have been replaced or energy systems modernised. These measures can be carried out gradually, as part of maintenance, or when the need arises (danger in delay).

Deep thermal renovation (including insulation of exterior walls, roof, basement ceiling, replacement of windows and modernisation of technical building systems) needs a long planning, tendering and construction period, relatively high costs and administrative issues such as agreement of all building owners and sometimes resettlement of residents (in case internal works are to be carried out).

Discussions with cooperatives indicate that the need for deep renovation is relatively low. Necessary repairs are continuously carried out.

Reaching building owners in the private sector is generally a difficult task. It was a challenge for the project team to identify a suitable building and convince the facility manager to present the objectives and aims of the project at the owners' meetings (which is held every two years). Building owners in the private sector complain about the rent cap that does not

allow undertaking deep renovation because the cost of measures does not pay off. At present, there is a shortage of skilled workers and high material prices make construction more costly.

Therefore, the implementation of a pilot project within FinEERGo-Dom was a difficult task. This was clear even before the beginning of the project. In order to start a project in the private residential sector, it is mostly the motivated owners (one or two in the beginning) who initiate the need for refurbishment. The promotion of the work and negotiation with other stakeholders, including facility manager, ESCO and construction companies, can only started once all the owners are on board.

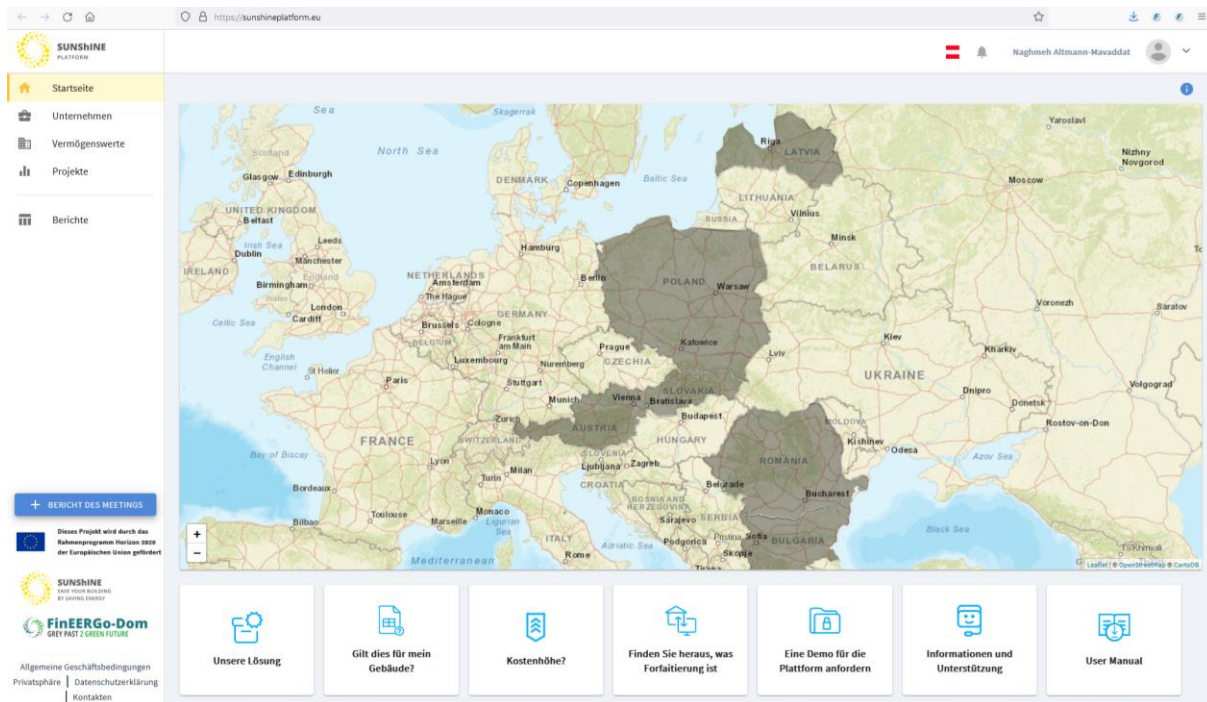
The barriers and challenges of the renovation market are further discussed in following chapters.

2.1.5 Use of the platform

The SUNSHINE platform, which was developed in previous projects, was continuously adapted during the course of the project. Different contents were translated into German so that Austrian stakeholders have better access to the information available on the platform.

Austrian organisations and stakeholders can register, check the information available and upload documents if they want to start a pilot project. The template for the energy saving contracts including its annexes in German language can be found under this [LINK](#).

Figure 1: SUNShINE platform in German language [Source: SUNShINE Platform]



During the project lifetime, unfortunately, it was not possible to start a pilot renovation project (see next chapters); therefore, the platform was only demonstrated during the meetings with stakeholders from the third year of the project onwards. The partners had to organise training sessions for interested stakeholders with the aim to increase stakeholder awareness and develop stakeholder competences, using the training materials and courses developed under the project SUNSHiNE (funded by the Horizon 2020 programme of the European Commission).

2.1.6 Replication of the LABEEF model and contracts

One of the main ideas in the project was to replicate and establish a Building Energy Efficiency Facility (BEEF) in each partner country, based on the Latvian Building Energy Efficiency Facility (LABEEF). Furthermore, the energy saving contracts and guidelines that were prepared in Latvia (within previous projects) had to be translated into the national language and checked according to the existing national legal situation. The overall objective

was to maintain the structure of the investment policy guidelines and adapt the documentation only where required by national law or regulations.

LABEEF contracts and guidelines were developed and reviewed by different stakeholders to make a foundation for transparent financing of deep renovations in Latvia.

In Austria, AEA used the services of a law firm to check the contents of the contract and its annexes according to Austrian laws and regulations. Austria has assessed the possibilities of adapting the EPC+ contract and other contracts included in the LABEEF Guidelines. A legal basis for the implementation of the LABEEF financing model in Austria (ÖBEEF) was created, adapted to the local regulatory framework.

A pilot project in the multi-family housing sector in Austria using EPC could not be established, although a small number of projects were carried out some years back according to the “Contracting Portal”⁹. Unfortunately, the financing mechanism (ÖBEEF) could not be examined. However, the implementation of the LABEEF mechanism in Austria (as ÖBEEF) is possible when it comes to energy performance contracting by ESCOs to monitor the quality of work.

The quality of the renovation in Austrian EPC and EPC+ is based on the klima**aktiv** criteria. Klima**aktiv** – the climate protection initiative of the Austrian Environment Ministry – provides information on energy-saving projects and promotes energy efficiency in its quality standards.

Using the LABEEF EPC+ agreement as a basis, an EPC+ agreement in line with Austrian legislation has been developed within the FinEERGo-Dom project. Compared to the LABEEF EPC+ agreement, there are no significant changes in terms of content. There are more changes in the wording and the introduction of additional concepts in order to make the contract compatible with the Austrian regulatory framework, case law and condominium ownership. These include a number of reformulations such as the replacement of “assignment of claims” by “assignment of receivables” and clarifications of definitions

Similarly, the dispute resolution procedure between the parties under the EPC+ has been revised to adapt it to the Austrian situation regarding apartment buildings and their ownership. The provisions on how the mediation process is to be carried out have been

⁹ <http://www.contracting-portal.at/>

supplemented, as have the institutions to which the consumer and the entrepreneur can turn to defend their interests in case of disputes.

With regard to the forfeiting agreement, different practices have been established for the calculation of compensation for the non-fulfilment of the guaranteed energy savings. Austria has determined this according to local regulations and case law. Force majeure circumstances are described in more detail, including a provision for Covid-19.

In addition, the forfeiting agreement sets a 30-day time limit for reaching an agreement (no time limit in the LABEEF agreement) for dispute resolution and describes in detail the steps to be taken. It also sets out the procedure to be followed to resolve disputes in the event of complaints from customers.

Therefore, it can be concluded that there are no significant legal obstacles for Austria to use the solution and framework offered by the LABEEF model for the renovation of its apartment buildings. Funding for Future (F3) is interested in managing the fund (ÖBEEF) in Austria. This could facilitate the replication of LABEEF in Austria. F3 has experience from its previous activities in Latvia and therefore, renovation projects can be carried out more efficiently based on these experiences.

Some members of the Advisory Board provided feedback on the developed ESC (energy saving contracts). They suggested that cooling and energy from waste energy be included in the renovation as well. This is because the number of hot days is growing and tenants will install cooling devices in their apartments, increasing the energy consumption of the building. Regarding energy gained via waste heat, there are some plans, especially in Vienna, to use waste heat where possible to reduce energy consumption in residential buildings.

Other members of the Advisory Board expressed their concern about the complexity of the renovation, especially regarding the EPC+ (renovation beyond thermal and energy performance), e.g. including bicycle parking or infrastructure for electric vehicles.

2.1.7 Establishment of pilot projects

Most energy demand in buildings is used for heating purposes. In the residential sector, space heating accounted for 71% of total energy demand in 2017, with water heating

accounting for another 14%.¹⁰ The rest is used for electrical appliances, space cooling, lighting and cooking. The potential for energy efficiency savings in the building sector is substantial.

There are almost 50,000 apartment buildings in Austria built before 1980. Many of these buildings have undergone renovations such as replacement of windows and modernisation of heating systems. However, with a renovation rate of below 1.5%, there is still work to be done

Table 1: Number and floor space of Austrian apartment buildings built before the 1980s

Age band		Apartment buildings	
from	to	number	useful area [m ²]
-	1918	15,203	16,947,540
1919	1944	5,020	4,326,033
1945	1960	7,771	7,367,726
1961	1980	21,732	28,868,193

According to the micro-census of Statistics Austria (2004–2018), the renovation market is stable. From 30,000 to 35,000 deep renovations and between 110,000 and 120,000 single component renovations per year are carried out in Austria. A look at the renovation market of the past 10–12 years (until 2021) shows that retrofitting with the help of grants is declining.¹¹ The reason could be the low interest rate and/or the fact that saving has largely lost its appeal, with freed-up capital being willingly invested in smaller-scale home renovation projects. The various subsidy schemes (housing subsidy, renovation check) haven't obviously failed to capture the willingness to invest and steer it in the direction of deep renovation measures.

¹⁰ Source: IEA: Austria Report 2020

¹¹ Source: Monitoring-System zu Sanierungsmaßnahmen in Österreich IIBW & UBA, 2021

The Austrian team spoke with many stakeholders (project developers, building owners, etc.), but no pilot project could be initiated within the project term. The obstacles to renovating a building are many, especially when there are various stakeholders involved in a project.

The responses from stakeholders were varied. The main argument was that in many cases the deep renovation was not necessary because some measures (replacement of windows or modernisation of the heating system) had already been carried out. Since the interest rate was low (see EURIBOR), the money was used to finance the remodelling or modernising of the building, pushing the subsidy scheme to the side due to the non-transparent subsidy landscape. The added complexity of monitoring and energy saving contracting does not motivate building owners.

Furthermore, the concept of BEEF is difficult to communicate and subsequently to implement. Stakeholders were sceptical about the interest of BEEF in the Austrian market and also about the simplification of the renovation work (with or without subsidies).

Other existing barriers and challenges in Austria that hinder the implementation of a pilot project are listed in the following.

2.1.8 Market barriers

Real estate financing in Austria is generally based on the Euro Interbank Offered Rate (EURIBOR). This reference interest rate was at a historically low level until the end of 2022. Even though it is the ideal time to increase the value of a property, modernise it professionally and improve its comfort and security with a low-interest modernisation loan and renovation loan, the renovation market is still weak.

Various barriers are known to hinder the renovation market, making it a challenge to contribute to improving the thermal quality of buildings. According to the report “Monitoring System for Renovation Measures in Austria”, carried out by Environmental Agency Austria and the Institute for Real Estate, Construction and Housing in 2021, the barriers can be seen in the construction industry itself, in policy making and in property owners. Some examples of these barriers are summarised below.

Barriers on the part of the construction industry

- Renovation projects have much lower value added per employee than new construction.

- Renovation projects carry a much higher risk than new construction. New buildings are easy to standardise and can therefore be calculated accurately (regarding construction costs). In the case of refurbishments, complications in the construction process have a strong influence on the price.
- Refurbishments require a higher qualification of employees. In new construction, a trend towards pure assembly work on the construction site can be observed. Craftsmanship is of decreasing value. In contrast, refurbishments continue to require construction skills.
- The existing shortage of personnel and skilled workers has a greater impact on refurbishment than on new construction.

Barriers on the side of policy makers

- Housing policy responsibilities are fragmented.
- A massive increase in the refurbishment rate can only be achieved through a bundle of measures differentiated by stock segments. These can consist of financial incentives, improved legal and regulatory frameworks, and awareness raising.
- The existing range of subsidies is extensive and has recently been greatly expanded. Subsidies from different sources require mutual coordination, continuous optimisation towards efficient leverage effects, and precise communication with potential subsidy applicants.

Barriers on the part of building owners

- The motivations of property owners are many and varied. In many cases, the need for renovation is simply not seen. Owners have grown old with their homes and have become accustomed to its inadequacies.
- In many cases, the economic viability of renovations cannot be demonstrated, especially in relation to comprehensive thermal-energetic renovations. The current sharp rise in costs exacerbates this problem.
- Homeowners are often overwhelmed by the investment required for comprehensive renovations. Taking loans is often undesirable, and older homeowners are confronted with lending restrictions. Subsidies are more attractive than loans and reduce the amount of the loan.

- In the past, there was a promise that the refurbishment could be financed by reduced heating costs. Such a promise is usually impossible to keep. There might be a change nowadays due to rising energy costs. However, the disappointed expectations may have had a lasting negative influence on the willingness to renovate.
- Comprehensive renovations are complex construction processes. While individual measures (window and heating system replacement) are well accepted in the case of owner-occupied apartments, comprehensive refurbishments are stalled to a large extent because the typical owner is overwhelmed by the developer's task of coordinating the various trades. Typical owners have to be supported through the entire process, from assessing the building, designing the renovation concept, applying for and handling funding, awarding the construction services, and finally coordinating the work through to checking the performance of services and invoicing.

The Austrian team also identified barriers on the side of ESCOs and project developers.

Barriers on the part of ESCOs

The majority of buildings renovated through energy saving contracting are non-residential buildings (mainly schools). The renovation activity is limited to the modernising and fine-tuning of the heating system (HVAC). The contracting period is under 10 years. Therefore, ESCO companies are not interested to undergo a contract with a long monitoring phase, such as 25 years or more.

Further, forecasting energy savings for non-residential buildings is easier due to the available energy bills. Regarding residential buildings, the owners may have different energy providers and it is therefore more difficult to calculate the energy reduction. In addition, there is a risk of unpredictable user behaviour changes due to different situations such as energy poverty. In this regard, the outcomes could be lower than expected in comparison to non-residential buildings.

Barriers on the part of project developers

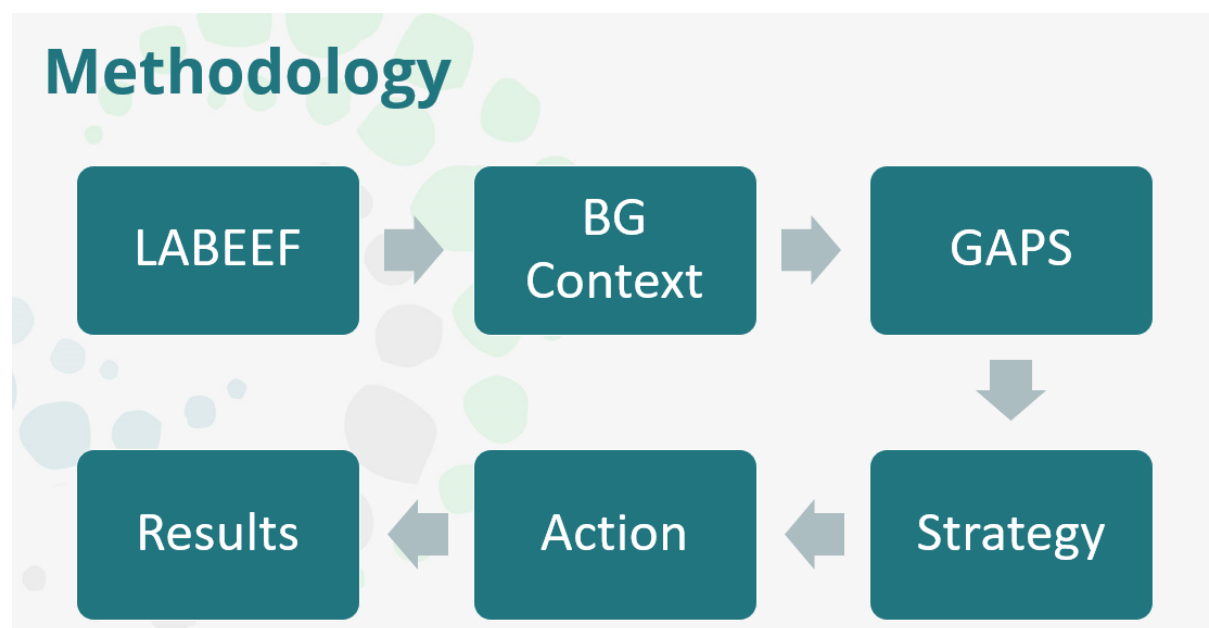
There are some issues identified as challenging during discussions with project developers. One of them is the rental price cap, especially for buildings constructed before the 1950s. The rents do not cover the cost of (thermal) renovation of the building. Furthermore, in the larger cities (where older buildings are located), the coverage of district heating is low. Due to this, replacement of the fossil heating system is not easy, especially if there are restrictions

regarding biomass or heat pumps. In addition, there are no laws requiring tenants to connect to the new heating system.

2.2 Bulgaria

The FinEERGo-Dom team in Bulgaria, represented by Econoler, implemented the FinEERGo-Dom project by following a series of steps that can be seen in the figure below. Each step is briefly discussed in the following paragraphs of this section, with the objective to outline key moments and achievements of the FinEERGo-Dom activities that took place in Bulgaria.

Figure 2: Applied FinEERGo-Dom implementation methodology in Bulgaria (BG)



As a first step, the experience of the Latvian Building Energy Efficiency Facility (LABEEF) was studied in great depth, as well as the H2020 SUNShINE and Accelerate SUNShINE projects, on which the FinEERGo-Dom project is based. From the perspective of the Bulgarian context, the LABEEF provides a forfaiting facility that caters to the needs of ESCO companies, a model that has been working well in Bulgaria for quite some time due to the Bulgarian Energy Efficiency and Renewable Sources Fund (EERSF). Nevertheless, no considerable demand for this kind of product was reported by the EERSF, and none from the multi-family housing (MFH) sector.

Looking at the broader picture of the success story of LABEEF in Latvia, the Bulgarian team identified some key elements that would be pivotal for the success of a potential LABEEF-based model in Bulgaria:

- EU subsidies of 30% of the investment costs were made available to homeowners in Latvia, consequently driving demand for renovation of MFHs;
- Performance contracting was recognised as an eligible instrument for the renovation of MFH by the managing authority (Altum) responsible for the disbursement of EU subsidies in this field;
- A high-capacity non-government organisation (ESEB) supported and coordinated homeowners, energy service providers and other interested parties along the MFH renovation process in Latvia.

It became clear that the FinEERGo-Dom project in Bulgaria would not only have to adapt the already existing EERSF forfeiting facility and/or introduce another one to the needs of MFH renovation, but also to incentivise a market demand for it. Replicating and adapting the Latvian experience on a large scale, i.e. blending EU programmes with performance contracting, establishing a one-stop shop similar to the ESEB, etc., was considered crucial for the success of the FinEERGo-Dom project in Bulgaria. As a consequence, the ambition of the local FinEERGo-Dom team grew significantly. The project's objectives were to a large extent pursued in the light of an enabling renovation concept that integrates: (i) facilitating the design of EU performance contracting programmes, (ii) creating an ESCO model that is widely accepted by authorities and building owners, as well as (iii) orchestrating the renovation process through one-stop shops.

Of great help for the detailed understanding of the Latvian framework was the cooperation that Econoler managed to establish with Altum – the Latvian state-owned development institution – and the support provided by the consortium partners F3 and ESEB in the form of various LABEEF and SUNSHINE tools, such as: (i) a set of contracts developed and used in Latvia, e.g. EPC+ contract, forfeiting contract, maintenance contract, etc.; (ii) marketing materials illustrating the sales process and value proposition for homeowners of a multi-family building that is a candidate for deep renovation; (iii) studies and results from pilots conducted in Latvia; (iv) the SUNSHINE online platform; and many others.

As a next step, the specifics of the Bulgarian context were examined through the lens of the requirements for replication and implementation of the FinEERGo-Dom project. Some major advantages and disadvantages that worked against or in favour of the implementation process in Bulgaria were identified:

- Key advantages working in favour of the FinEERGo-Dom implementation process in Bulgaria:
 - 2,000 multi-family buildings had already been renovated under two programmes managed by the government, providing numerous good examples of the benefits of energy efficiency projects.
 - The Bulgarian EERSF had already developed a stable, albeit small, ESCO market, a key component of the FinEERGo-Dom model. During the FinEERGo-Dom implementation period, EERSF was a rich source of knowledge and accumulated experience in reference to performance contracting (EnPC).
 - ESCO legislation and regulatory framework were already in place.
- Main disadvantages working against the FinEERGo-Dom implementation process in Bulgaria:
 - Market demand for energy efficiency had been predominantly driven by grants. Especially in the multi-family housing (MFHs) and public sector, grant intensity was at 100%, leaving no room for market-oriented models like FinEERGo-Dom and/or other types of financial instruments and solutions.
 - The ESCO legislation and regulatory framework still posed significant barriers to the widespread adoption of the FinEERGo-Dom model.
 - A caretaker government was in charge most of the time during the FinEERGo-Dom project implementation. As a result, only short-term issues and policies were addressed during this period. Strategic actions required to unlock integrated models such as FinEERGo-Dom were postponed until a regular government was elected.

Considering country specifics, i.e. an energy efficiency market strongly dependent on EU grants and national budget subsidies, the Bulgarian FinEERGo-Dom team decided to adopt a top-down strategy for popularisation and integration of the FinEERGo-Dom approach. Taking into account that the ESCO model lies at the heart of the FinEERGo-Dom project, Econoler incorporated it in Bulgarian strategic supporting programmes and mechanisms in the course of the project. The actions taken in this direction led to a number of key achievements:

- The ESCO legislation was amended to allow, among other improvements, the blending of performance contracting with EU grants and subsidies.
- The ESCO model was introduced and recognised as an effective approach to achieving national energy efficiency targets in the Bulgarian Long-Term Renovation Strategy (2050).

- The ESCO model was programmed as an eligible option under the Bulgarian Resilience and Recovery Plan, unlocking up to €175 million in subsidies for homeowners in MFHs. Homeowners have the option to declare that they wish to take advantage of a performance contracting arrangement. In this case, an ESCO company can provide the required contribution of 20% of the renovation investment cost for them.
- The ESCO approach will be strongly supported by the Bulgarian Decarbonisation Fund, planned to start in late 2023/early 2024. Close cooperation between Econoler and designers of the fund led to programming a segment dedicated to MFH, based on the FinEERGo-Dom philosophy, i.e. providing opportunities to ESCO companies to finance and sell receivables from their renovation projects in this area.

2.2.1 Energy saving contracting

The legal analysis conducted for Bulgaria under the FinEERGo-Dom project outlined three critical limitations in the Energy Efficiency Act (EEA) for the application of performance contracting and one non-critical in the Condominium Ownership Management Act (COMA).

Energy Performance Contracts (EnPC) are regulated in the EEA. For the needs of the implementation of the FinEERGo-Dom scheme in Bulgaria, i.e. MFH renovation using the ESCO model, which creates demand for forfeiting services, the following obstacles were detected and subsequently remedied in the EEA owing to the fruitful cooperation between SEDA¹² and Econoler.

Amendments in the EEA

- Expansion of sources for recovery of investments made and payment of due remuneration to the contractor under the EnPC¹³.

According to Art. 72 para. 1 of the Energy Efficiency Act, the only source for recovering the investment made and paying the remuneration due to the contractor is energy savings. The EnPC definition under the Energy Efficiency Directive (EED) allows for two groups of sources of investment payback – by 1) valuing a contractually performed

¹² SEDA: Sustainable Energy Development Agency in Bulgaria

¹³ EnPC is the same as EPC (the adaptation occurred during the project implementation phase)

level of energy efficiency improvement, or 2) using another contractual criterion related to energy performance (e.g. financial savings).

A new revision of Art. 72 para. 1 of the EEA has been successfully introduced:

Art. 72. (1) The EnPC shall be aimed at implementing energy efficiency measures in buildings, enterprises, industrial plants and systems for external artificial lighting, whereby the investments made by the contractor shall be repaid, and the remuneration due to the contractor shall be paid in the form of a contractually guaranteed level of energy efficiency improvement or another contractual criterion related to energy performance, e.g. financial savings.

- Option for the assignor to contribute to the financing of the service – Art. 73 para. 4 of the EEA. In this way, the following will be achieved:
 - Expanding the opportunities for the assignor to use their own and/or attracted financial resources, e.g. EU/national grants, when concluding an energy performance contract;
 - Achieving a multiplier effect when using free/specialised low-interest EU financial instruments by the assignor and private financial resources. According to Art. 73 para. 4 of the EEA, the contractors shall provide the service, in whole or in part, with their own funds and/or undertake to secure its financing by a third party.

An amendment in Art. 73 para. 4 of the EEA has been successfully introduced:

The contractors and/or assignors under Art. 72 para. 2 provide the service with their own funds and/or undertake to secure its financing by a third party.

- Foreseeing the possibility for the ESCO to carry out an energy efficiency audit when implementing the measures proposed under the ESCO contract.

According to the provisions of the EEA, the audit is carried out by a third party, namely, a company registered with the Sustainable Energy Development Agency (SEDA). The ESCO contracting assignor shall provide the contractor with a summary of the report of the energy efficiency audit carried out. This means that before concluding an ESCO contract, the assignor must have entered into a contract for conducting an energy audit with a company registered with the SEDA, which in turn provides it with the

audit. Contractors may not carry out energy efficiency audits at the site of the contract.

As part of the content of the ESCO contract, the EEA states:

1. the normalised energy consumption as determined by an energy efficiency audit;
2. a list of the performance measures to be implemented, including the steps to be taken to implement the measures and, where appropriate, the costs involved.

Normalised energy consumption and a list of energy efficiency measures are included in the audit. The subject of the ESCO contract is precisely the measures proposed in the audit. The audits carried out in this manner by a company external to the ESCO company often include incorrectly selected or over-ambitious indicators in terms of energy performance and evaluation methodologies, leading to subsequent disputes in monitoring and reporting; underestimating or overestimating the energy savings and/or the additional benefits of ESCO projects; a total inability to achieve the pre-estimated performance savings. According to the current legal requirements, the ESCO has no opportunity to pre-control and verify the technical and economic parameters of the measures specified in the audit, **but it carries all the risk under the contract and must guarantee the achievement of savings resulting from the implementation of the measures recommended in the audit.**

The amendment introduced in the EEA was fully consistent with the requirements of the EED, according to which, when energy audits are carried out by **internal experts**, the need for independence would require **these experts not to participate directly in the audited activity**. The amendment provided an opportunity for the ESCO to perform energy efficiency audits as part of the implementation of an energy performance contract. In order to comply with the applicable regulatory framework, the ESCO must be entered in the registers managed by SEDA under Art. 44 or Art. 60 of the EEA, depending on the scope of the energy performance contract.

Amendments in the COMA

- Expanding the scope of activity of the associations under Art. 25 of the COMA and providing for an explicit possibility for them to conclude commercial contracts and absorb funds from various sources of financing for the repair and/or renovation of the building.

The amendment is necessary to avoid disputes as to whether the associations can be a party to the EnPC with respect to buildings in condominium ownership, in view of the restricted scope of activity under Art. 25 para. 1, para. 2 and para. 5 of the COMA.

Proposal for a new revision of Art. 25

Art. 25 (1) For the absorption of funds from the European Union and/or from the state or municipal budget, grants and subsidies, other sources of financing and/or use of their own funds for major repairs and/or major renovations of buildings in a condominium ownership regime, owners may establish an association. The association is a legal entity established by the order of this Law.

It is clear from the above that the regulatory framework and the case laws formed so far pose a number of challenges and problems for the ESCO model, including for buildings in condominium ownership (CO). One possible reason for this is the fact that the EnPC is not well known as a financial instrument in CO buildings, which is largely due to grants from national and European programmes.

Some of the challenges can be addressed through appropriate legislative changes, and others through the accumulation of new case law based on a thorough knowledge of the ESCO mechanism.

2.2.2 Stakeholder engagement

Adopting a stakeholder engagement strategy by the local Econoler team around building a number of strategic partnerships proved to be instrumental in: (i) opening communication and dissemination channels that helped the FinEERGo-Dom project to increase its visibility and impact; (ii) strengthening the FinEERGo-Dom value proposition to policy makers, energy efficiency service providers, homeowners, and financial institutions; (iii) putting pressure on decision makers to act; and (iv) achieving the targets set by the FinEERGo-Dom project.

The following are some of the key partnerships established during the project, along with the outcomes they produced:

- **SEDA**

The agency supported the FinEERGo-Dom team from the beginning in many ways: (i) changes in the EEA were introduced with the help of SEDA; (ii) the FinEERGo-Dom team participated in public events on energy efficiency across the country organised by SEDA; and (iii) SEDA's management provided constant guidance and advice to the

FinEERGo-Dom team. Another evidence for the excellent collaboration with SEDA was the choice of location for FinEERGo-Dom's Advisory Committee meetings. All of them took place at SEDA's headquarters.

- Bulgarian ESCO Association¹⁴ – the Alliance for Energy Efficiency (AEE)
The FinEERGo-Dom project provided the necessary tools and materials for the ESCO companies to expand their portfolio of services to the MFH segment. In this context, the AEE became one of the main sales channel and platforms for FinEERGo-Dom solutions.
- Bulgarian Energy Efficiency and Renewable Sources Fund (EERSF)
The EERSF was in the position to provide the necessary financial support to the FinEERGo-Dom model. With the help of the Econoler team, the necessary adaptation of existing financial products of the fund to the needs of MFH homeowners was made.
- SHEERenov H2020 project¹⁵
Being responsible for the design and implementation of one-stop shops for MFH homeowners under the National Recovery and Resilience Plan, the FinEERGo-Dom model was introduced as one of the instruments at the disposal of homeowners during their renovation journey.
- SHAREs H2020 project¹⁶
The FinEERGo-Dom solution was considered to be made available on the SHAREs platform as one of the financial instruments at the disposal of energy communities wishing to renovate their buildings and use independent renewable energy sources for heating, electricity generation, renewable natural gas, etc. For the latter, the FinEERGo-Dom team¹⁷ closely cooperated with the DanuP-2-Gas project¹⁸ under the Interreg programme.

¹⁴ <http://www.alliance-ee.bg/служби/еско-за-жилищни-сгради/>

¹⁵ <https://sheerenov.eu/>

¹⁶ <https://shares-project.eu/>

¹⁷ <https://fineergodom.eu/fineergo-dom-blending-with-innovative-energy-supply/>

¹⁸ <https://www.interreg-danube.eu/approved-projects/danup-2-gas>

- BeSmart H2020 project¹⁹

The FinEERGo-Dom concepts and messages were an integral part of the roundtables organised under the BeSmart project. One of the key achievements of the Econoler team – the introduction of the FinEERGo-Dom mechanism in the National Resilience and Recovery Plan – was realised through the BeSmart platform. A group of renowned experts and organisations, actively involved in BeSmart activities, joined forces and issued a series of public declarations and addresses that urged public authorities to adopt and incentivise market-based approaches when designing the Bulgarian Resilience and Recovery Facility (RRF).

- ELENA Technical Assistance from the European Investment Bank (EIB)²⁰

The Econoler team closely studied and discussed with the EIB team the possibilities of integrating the FinEERGo-Dom mechanism into the ELENA Technical Assistance programme. As a result, ELENA was made part of the value proposition for beneficiaries of the Bulgarian FinEERGo-Dom project outputs.

- European City Facility (EUCF)²¹

By following the same steps as for ELENA, and after researching the opportunities provided by the EUCF and discussions with the national EUCF coordinator, the EUCF was also included in the value proposition for beneficiaries of the Bulgarian FinEERGo-Dom project outputs.

- Municipality of Burgas

The FinEERGo-Dom team in Bulgaria started a long-term cooperation with the Municipality of Burgas. As a first step, an application for ELENA Technical Assistance will be jointly prepared and submitted, paving the way for the renovation of MFHs in the region after the end of the RRF. All contracts and tools that were adapted and developed for Bulgaria under the FinEERGo-Dom projects will be utilised by the municipality and incorporated in its strategy.

¹⁹ <https://www.besmartproject.net/>

²⁰ <https://www.eib.org/en/products/advisory-services/elena/index.htm>

²¹ <https://www.eucityfacility.eu/home.html>

- Municipality of Blagoevgrad
With the support of the Bulgarian FinEERGo-Dom team, the Municipality of Blagoevgrad was awarded a grant by the EUCF²². Homeowners of more than 120 MFH will be engaged and supported during their renovation journey by using the results of the FinEERGo-Dom project, e.g. contract templates, brochures, leaflets, tools, trainings, etc.
- Ministry of Regional Development and Public Works (MRDPW)
Econoler established a fruitful cooperation with the MRDPW with the objective of adapting the FinEERGo-Dom outputs, e.g. contracts and templates, to the needs of public procurement of MFH renovation projects under the Bulgarian RRF.

2.2.3 Evaluation and conclusions from the stakeholder action plan implementation

Dissemination and communication (D&C) activities were an essential part of the success of the FinEERGo-Dom project in Bulgaria. Meetings with over 1,200 stakeholders were conducted in the course of more than 70 events.²³ Additionally, over 20 interviews and articles were created and disseminated.

In terms of social media, FinEERGo-Dom tops the ranking among H2020 projects with over 420 posts published separately on LinkedIn, X (formerly Twitter), and Facebook. In addition, YouTube content was regularly published, e.g. trainings, interviews, explanatory videos, etc. A substantial part of the content was related to activities and achievements in Bulgaria and Poland.

Some of the main conclusions and recommendations that can be shared by the Econoler team include:

- D&C activities play a central role for market acceptance and local community support. Communication channels should be constantly kept open and supplied with

²² <https://blagoevgrad.eu/obshhina-blagoevgrad-s-odobren-proekt-po-evropejskiya-mehanizm-za-gradsko-razvitie-v-podkrepa-na-proczesa-na-energijna-transformacziya-na-mestnata-ikonomika.html>

²³ Full list available in the FinEERGo-Dom Communication Report

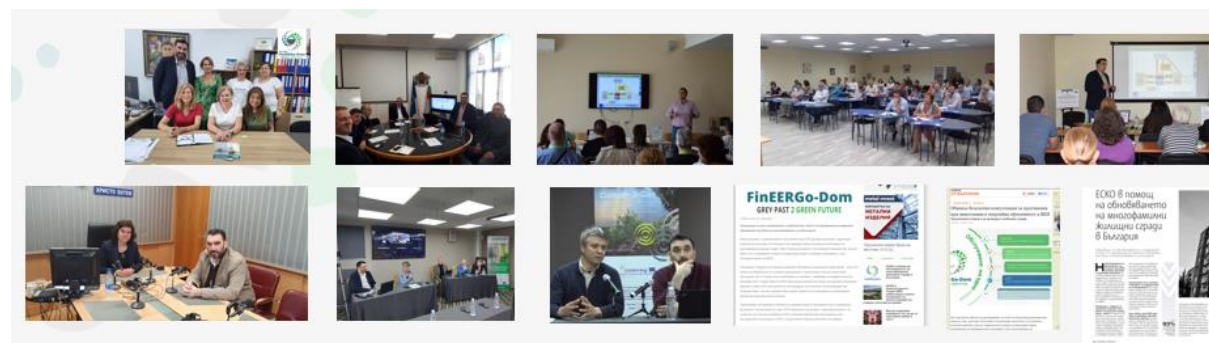
information so that stakeholders get used to one's project activities and outputs, e.g. the Bulgarian FinEERGo-Dom concept.

- Besides a balanced intensity, D&C activities should use a variety of means to reach relevant stakeholders, e.g. social media, articles and interviews, radio channels, participation in workshops, roundtables and meetings, among others.
- Through continuous D&C activities, stakeholders become well acquainted with one's value proposition, e.g. FinEERGo-Dom, and start perceiving it as part of the national energy efficiency instruments.
- It takes a long time for D&C activities to gain traction. Lack of results in the beginning should not decrease the intensity of D&C efforts and/or stop them. Such an approach sends a general message to stakeholders that the subject of one's D&C activities is here to stay.
- Building strategic partnerships is very helpful in achieving the objectives of D&C activities.

The overall engagement strategy adopted by Econoler proved quite successful. First, the FinEERGo-Dom team in Bulgaria joined forces with other peers in order to introduce improvements in the Bulgarian framework, e.g. legislation, EU programme design. In parallel, the team conducted regular meetings with local high-ranking policy makers to gain additional support for the FinEERGo-Dom concept. At one point, the intervention of an EU-level body was also sought in order to finalise the introduction of performance contracting in the RRF. Second, Econoler engaged with a number of municipalities to popularise opportunities for financing the renovation of MFH under the RRF. This quickly transformed into long-term partnerships. MRDPW was also successfully involved by Econoler with the objective to adapt the FinEERGo-Dom tools to the needs of public procurement (a key requirement to realise renovations of MFHs under the RRF), as well as to popularise the ESCO model across other municipalities in Bulgaria. Finally, MFH owners started to approach the Bulgarian FinEERGo-Dom team directly for help and support in the last few months of the FinEERGo-Dom project. This result was in line with the top-down approach followed by Econoler and quite expected.

A small part of the D&C activities of the FinEERGo-Dom project can be seen on the pictures below:

Figure 3: Dissemination and communication activities in Bulgaria



Top row from left to right: (1) regular meeting with the Municipality of Burgas, (2) Advisory Committee at SEDA headquarters, (3), (4), (5) trainings in Plovdiv, Varna and Sofia; bottom row from left to right: (6) after an interview at the Bulgarian National Radio, (7) FinEERGo-Dom roundtable in Sofia, (8) joint workshop with the DanuP-2-Gas project, (9), (10), (11) FinEERGo-Dom articles in renowned magazines and online media.

2.2.4 Use of the platform

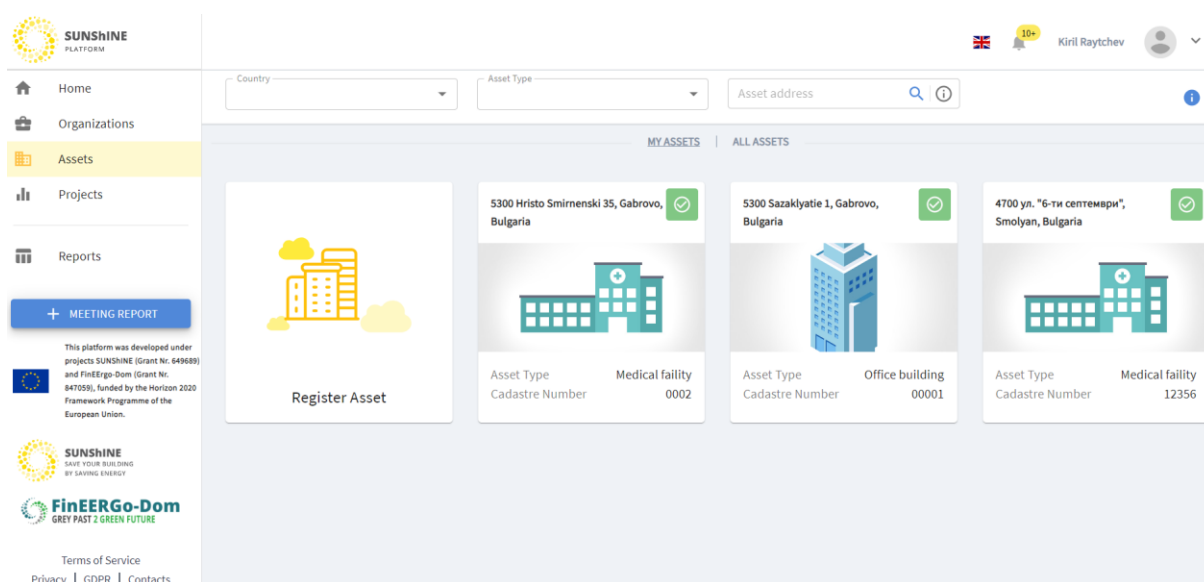
Unfortunately, the SUNShINE platform did not gain much traction in Bulgaria despite the fact that some D&C activities were designed with the specific objective of supporting its usage. For example, SUNShINE was made part of the trainings under the FinEERGo-Dom project. Representatives from Stage AI, the developer of the platform, took part in several meetings with ESCOs, municipalities, homeowners, policy makers and the like. A few dedicated social marketing campaigns were designed and conducted by the Econoler team. Training content created by Stage AI was also included in that effort. In addition, SUNShINE was presented to SEDA, the H2020 SHEERenov project, and the AEE, and it was referenced in most of the FinEERGo-Dom presentation conducted in Bulgaria.

Nevertheless, the Econoler team consistently provided the necessary support and collaborated with Stage AI (project partner responsible for the development of the platform) to ensure that the SUNShINE platform became a useful tool for all stakeholders involved in MFH the renovation process. The local FinEERGo-Dom team prepared a full set of materials, e.g. contract templates, translations, etc., to be published on and accessible to stakeholders through the platform. Additionally, during the platform's test phase, the Econoler team suggested improvements and identified functional issues. Some of them were successfully resolved, whereas others, e.g. simplified user experience, were more complex and require further analysis.

After the launch of the SUNSHINE platform in Bulgaria, Econoler started using it by recording potential projects from its pipeline, as shown in the figure below, and by entering brief notes from meetings conducted in Bulgaria. Furthermore, Stage AI was invited to some of the stakeholders' trainings, organised in Bulgaria, to present the platform and assess potential future interest. A presentation was also organised for the SEDA, main supporter of the FinEERGo-Dom project in Bulgaria. Valuable feedback and ideas for additional functionalities were provided to Stage AI during the events held in Bulgaria at that time.

Currently, the Bulgarian FinEERGo-Dom one-stop shop (see next section for more details) offers the SUNSHINE platform as part of its value proposition. The local team anticipates a rise in demand for the SUNSHINE platform, as a consequence from the already evident increase in demand for MFH renovations based on the ESCO model.

Figure 4: Registered Bulgarian assets on the SUNSHINE platform [Source: SUNSHINE Platform]



2.2.5 Replication of the LABEEF model and contracts

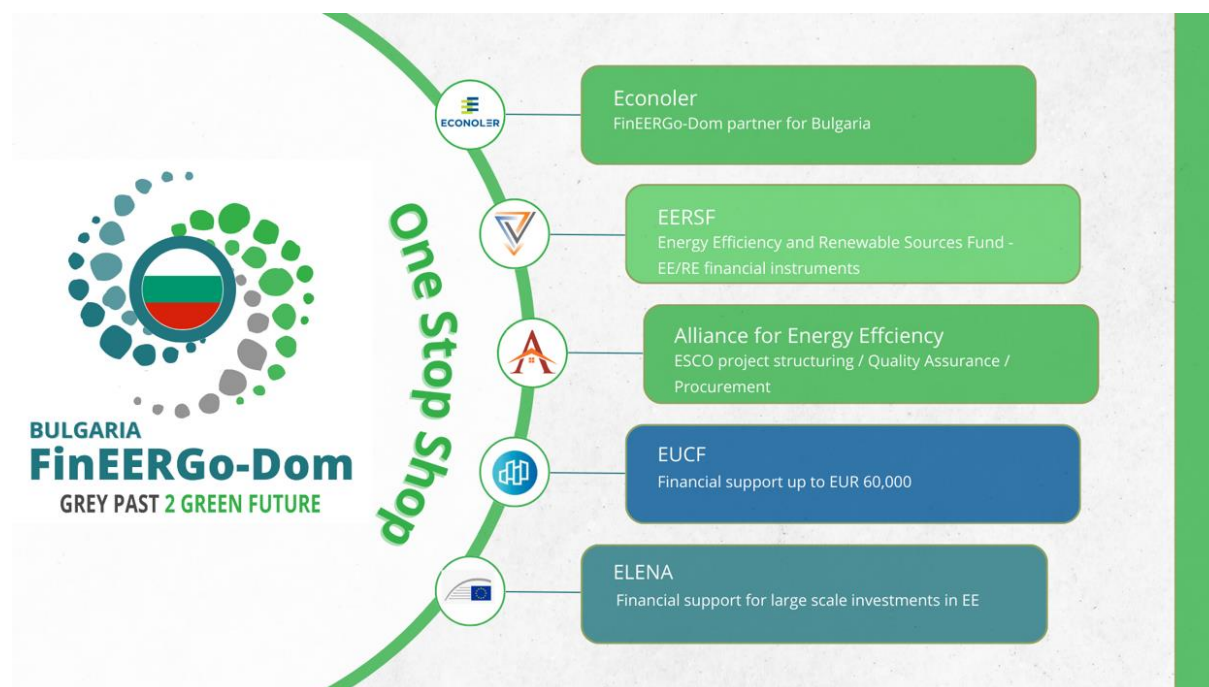
The LABEEF model was implemented in Bulgaria in the form of a one-stop shop (OSS) in order to facilitate increased demand for deep renovation services based on the ESCO model. The Bulgarian FinEERGo-Dom team identified as a bottleneck the lack of capacity among

homeowners and municipalities to structure and procure ESCO projects under the RRF and forthcoming national building renovation initiatives. Building upon the strategic partnerships developed throughout the project, the Bulgarian FinEERGo-Dom one-stop shop has been established, comprised of the following partners and technical assistance services:

- Econoler
All tools and know-how developed under the FinEERGo-Dom project, e.g. contract templates, marketing and training materials, supporting tools, case studies from Poland, Latvia, Austria and Romania, etc.
- EERS
Bridge financing, forfaiting services, etc.
- AEE
Feasibility studies, quality assurance, measurement and verification services (M&V), dispute resolution, project structuring/pooling, etc.
- EUCF
Technical assistance up to €60,000
- ELENA
Technical assistance up to €3 million
- BULBEEF
Forfaiting services, etc.

The structure of the Bulgarian FinEERGo-Dom one-stop-shop (OSS) is visible in the figure below:

Figure 5: Bulgarian FinEERGo-Dom one-stop shop



The main idea behind the OSS was to offer a portfolio of services to interested parties, e.g. municipalities and homeowners, which would guide them through their renovation “journeys”. As ESEB’s experience shows, there are numerous steps involved in the process, from initial interest to generation of energy savings, leaving many opportunities for errors and failures. To address this challenge, the FinEERGo-Dom OSS services in Bulgaria encompass a variety of activities that can be customised depending on the project and stakeholder types. For example:

- Access to technical assistance/subsidies;
- Awareness raising and capacity building;
- Process orchestration and facilitation;
- Energy-saving measures design and implementation;
- Feasibility studies;
- Procurement advisory;
- Quality assurance schemes and methodologies;
- Measurement and verification;

- Refinancing services;
- And others.

Some of the major building blocks of the Bulgarian FinEERGo-Dom OSS are illustrated in the figure below. They can be combined in different ways to cater to the specific needs of beneficiaries and enable all involved stakeholders to follow a predefined and fool-proof renovation “journey”.

Figure 6: Building blocks of Bulgarian one-stop shop services



At the current stage of development, the Bulgarian FinEERGo-Dom one-stop shop offers three service packages (“journeys”):

- The “80% subsidy” journey – based on the National Resilience and Recovery Plan
- The “Small pool plus technical assistance” journey – based on the EUCF technical assistance programme
- The “Large pool plus technical assistance” journey – based on the ELENA technical assistance programme
- A combination of the above, e.g. 80% subsidy & Large pool plus technical assistance

Potential future EU replicators of the Bulgarian FinEERGo-Dom project can easily build upon aforementioned product packages (“journeys”) since ELENA, EUCF, and the RRF are available and/or being developed across the EU. The design and implementation process of each journey are briefly described in the sections below.

“80% subsidy” journey

That type of renovation journey consists of the following steps (illustrated in the figure below)

Step 1: Homeowners submit their application for an 80% subsidy.

Services provided by the Bulgarian FinEERGo-Dom one-stop shop:

- Awareness raising
- Training
- SUNShINE platform
- Facilitation
- Feasibility study
- Quality assurance
- Measurement and verification (M&V)
- Dispute resolution

Step 2: Municipalities handle submitted applications and conduct procurement procedures for the selection of energy efficiency service providers.

Services provided by the Bulgarian FinEERGo-Dom one-stop shop:

- Procurement
- Awareness raising
- Training
- SUNShINE platform
- Feasibility study

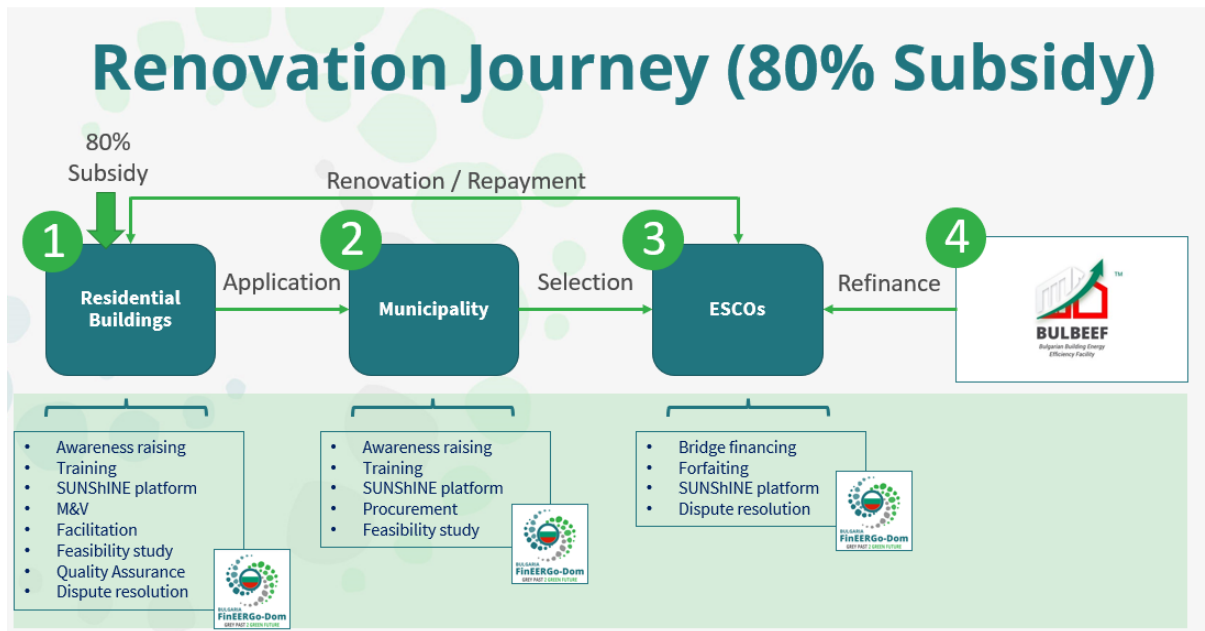
Step 3: ESCO implements energy-saving measures.

Services provided by the Bulgarian FinEERGo-Dom one-stop shop:

Bridge financing
Forfeiting
Measurement and verification (M&V)
SUNShINE platform
Dispute resolution
Quality assurance

Step 4: ESCO companies receive refinancing to implement further renovation projects. Until the capitalisation of BULBEEF (a forfeiting fund established by the F3 partner), the forfeiting service is provided by the EERSF.

Figure 7: "80% subsidy" journey



"Small pool plus technical assistance" journey

Step 1: The municipality identifies a pool of residential and/or public and/or commercial buildings suitable for renovation.

Services provided by the Bulgarian FinEERGo-Dom one-stop shop:

- Optimal aggregation and project pooling
- Pre-feasibility study

Step 2: The municipality decides to apply for EUCF support.

Services provided by the Bulgarian FinEERGo-Dom one-stop shop:

- EUCF Investment Programme development
- Awareness raising
- Training
- Feasibility study
- Aggregation

Step 3: EUCF support is disbursed.

Services provided by the Bulgarian FinEERGo-Dom one-stop shop:

- Awareness raising
- Training
- SUNShINE platform
- Procurement procedures development
- Feasibility study

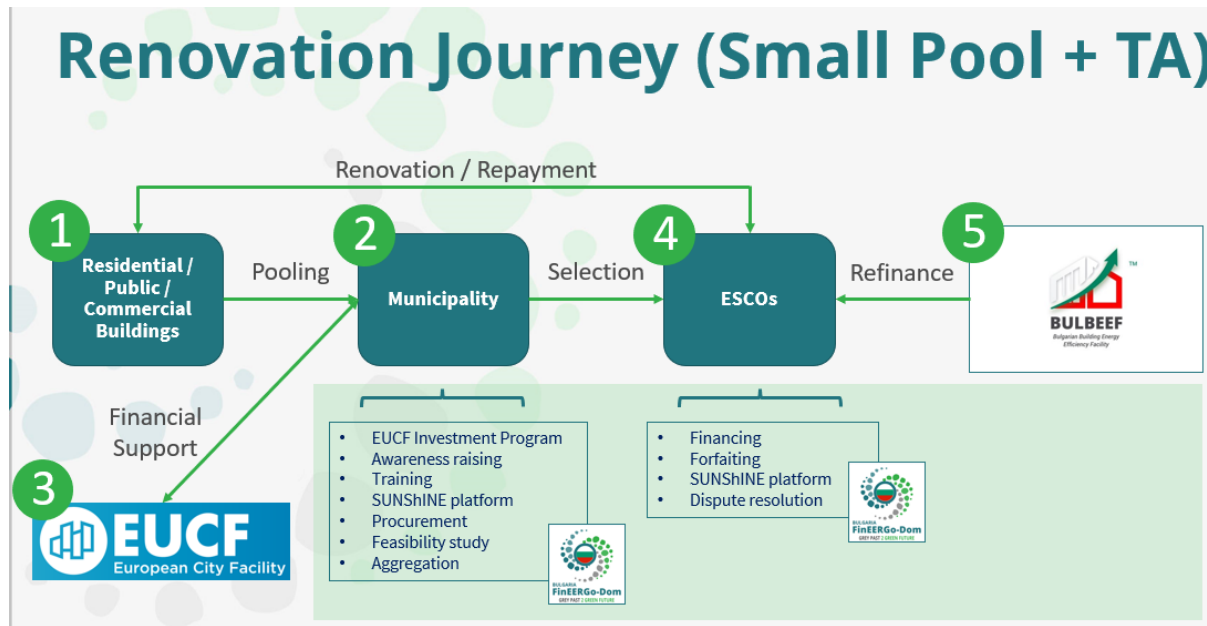
Step 4: ESCO companies are selected and ESMs are implemented.

Services provided by the Bulgarian FinEERGo-Dom one-stop shop:

- Financing
- Forfaiting
- SUNShINE platform
- Dispute resolution
- M&V
- Quality assurance
- Procurement procedures implementation

Step 5: ESCO companies receive refinancing by BULBEEF and/or EERSF to implement further renovation projects.

Figure 8: "Small pool plus technical assistance" journey



“Large pool plus technical assistance” journey

Step 1: A group of building owners decides to apply for ELENA support.

Services provided by the Bulgarian FinEERGo-Dom one-stop shop:

- ELENA Investment Programme development
- Awareness raising
- Training

Step 2: ELENA support is granted.

Services provided by the Bulgarian FinEERGo-Dom one-stop shop:

- Procurement procedures development
- Business planning
- Project management
- Feasibility study
- Aggregation

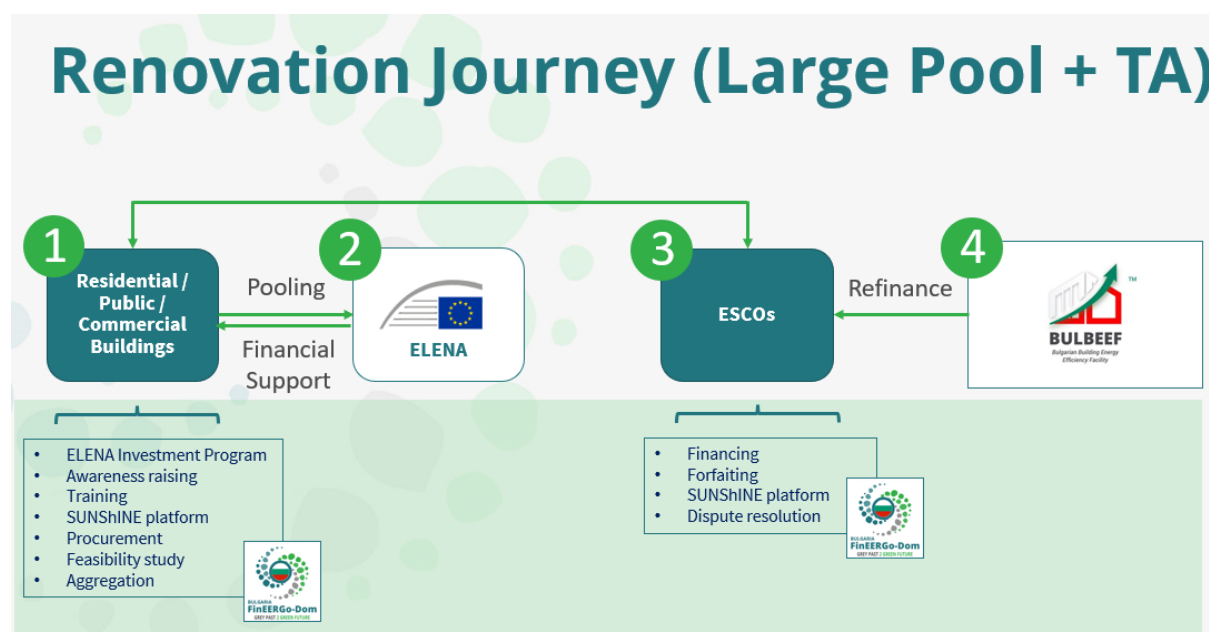
Step 3: ESCO companies are selected and ESMs are implemented.

Services provided by the Bulgarian FinEERGo-Dom one-stop shop:

- Financing
- Forfaiting
- SUNShINE platform
- Procurement procedures implementation
- Dispute resolution
- M&V

Step 4: ESCO companies receive refinancing by BULBEEF and/or EERSF to implement further renovation projects.

Figure 9: "Large pool plus technical assistance" journey



2.2.6 Market barriers

Given the central role of EU and government programmes managed by municipalities – a trend that is likely to persist in the future in relation to the MFH renovation process in Bulgaria –, the capability of public authorities to blend financing for and procure integrated renovation projects will become pivotal. Although meaningful progress has been achieved by making the performance contracting mechanism under the Bulgarian Resilience and

Recovery Facility eligible, many details and necessary **know-how are still missing** and have to be developed on-the-go by authorities. As a result, the speed of the renovation process and investment disbursements is notably hindered. Replicating and adapting the Latvian experience in that area by establishing the Bulgarian FinEERGo-Dom OSS has successfully addressed the identified capacity shortage. It now has to be scaled rapidly within the next few years.

Another serious obstacle confronting large-scale renovations in the MFH segment is the **lack of a dedicated supporting financial infrastructure**. The need for long-term financial products, e.g. providing financial services up to 15 years and beyond, allowing small monthly instalments from homeowners over longer periods, has currently been partially met and will be fully addressed with the start of the National Decarbonisation Fund. One of the major achievements of the Bulgarian FinEERGo-Dom team was the introduction of performance contracting into the RRF, which effectively solved the temporary gap caused by the absence of long-term lending and forfaiting facilities in Bulgaria.

Furthermore, **financial institutions harbour some scepticism** due to the issues with COMA, lack of social programmes for underprivileged homeowners, and the limited guarantee schemes to which they have access under the InvestEU programme. In this context, the success of the FinEERGo-Dom OSS in Bulgaria, which pilots two pools of MFHs with the Municipalities of Burgas and Blagoevgrad, becomes paramount for the financial sector as well. To address some of the concerns from the banking industry, mainly related to a lack of deep understanding of the MFH renovation process, Econoler involved two financial institutions in the process of structuring the value proposition for homeowners and ESCOs.

A list of major barriers identified by the local FinEERGo-Dom team during the implementation of the project is outlined in the table below:

Table 2: List of barriers and recommendations in Bulgaria, segmented by groups

Barriers	Recommendations
Capacity	
Limited capacity in central government and municipalities to design programmes that blend financial sources, e.g. ESCO, subsidies, loans, etc.	Increase investments in awareness raising and capacity building for the benefit of central and local public authorities.

	Establish an OSS able to fill the gaps by providing financial expertise, capacity building, project and process management, as well as procurement services, among others.
Limited capacity in municipalities to procure complex integrated projects, e.g. ESCOs that involve multiple sources of financing.	Increase investments in awareness raising and capacity building for the benefit of local public authorities. Establish an OSS able to fill the gaps by providing financial expertise, capacity building, project and process management, as well as procurement services, among others.
Limited number of energy efficiency service providers	Increase investments in awareness raising, capacity building, and training. Establish an OSS able to fill the gaps by providing financial expertise, capacity building, project and process management, as well as procurement services, among others.
Regulation	
Onerous bureaucratic procedures must be followed in cases when residential property is renovated.	The Public Procurement Act should be revised. Currently, public tenders have to be announced for the selection of companies to renovate MFHs under Phase II of the Resilience and Recovery Facility.
The renovation process of MFHs can be put on hold by a minority of homeowners.	Allow decisions regarding renovation and decarbonisation initiatives to be made by condominiums with a simple majority. Increase the responsibility of homeowners in condominiums.
Lack of requirement in EU/national programmes for the application of long-term M&V procedures after the	Introduce quality assurance and energy savings guarantee schemes.

implementation of energy efficiency projects	
Financial context	
Lack of facilities with tenures over 15 years	Build supporting financial infrastructure that enables investments in MFHs, e.g. introduce risk-sharing instruments, blend with concessional finance and EU/national subsidies, set up specialised entities like BULBEEF, etc.
Social context	
A large share of homeowners is financially constrained.	Develop well-targeted social programmes, e.g. 100% grant intensity should be redirected to socially vulnerable homeowners.
Policy	
Market distortions caused by 100% grant intensity programmes	A clear message should be sent to beneficiaries that 100% intensity grants will be discontinued and private investments will become the norm. Currently, energy efficiency investments are realised only if there is a substantial subsidy component, e.g. over 80%.

2.3 Poland

2.3.1 Energy contracting

The EPC project market in Poland is new and still developing. Projects aimed at improving energy efficiency in the ESCO formula have been implemented for about 10 years, but on the basis of the Act on Public-Private Partnership. Only after the legislative changes in 2023, the first projects of this type are being implemented in Poland. The potential of the EPC market is very large. The Ministry of Development Funds and Regional Policy conducted a study in 2022 titled "Green Transformation of Cities" as part of project number POPT.03.01.00-00-0190/17 ("Support for public entities within the meaning of the PPP Act in the implementation of projects in the PPP formula in 2017-2023"). The research showed that renovation and energy efficiency projects (referred to as type of intervention 026) could bridge a financial gap of approximately €5–6 billion. In the structure of city spending on green transformation, thermal modernisation projects account for about 20% of expenditure. In Poland, there are no studies that would illustrate the demand for EPC projects in rural areas. However, the practice of implementing similar projects in the years 2012–2022 proves that interest in this formula is present, including the implementation of EPCs in small municipalities (cf. for example, the PPP project database on energy efficiency: <https://www.ppp.gov.pl/baza-zawartych-umow-ppp/>).

2.3.2 Stakeholder engagement

As the main task of the Polish partners in the FinEERGo-Dom project was to create the Priority Programme under which a financial instrument based on EPCs could be tested, it was necessary to involve different stakeholder groups. These included public institutions at the national administration level, responsible under the Energy Efficiency Act for the development of the EPC market in Poland, financial institutions offering receivables purchase support, banks, lawyers working on adapting LABEEF contracts to the Polish context and conditions, potential beneficiaries of the Priority Programme (building owners: cooperatives and housing communities; local governments: municipalities, cities, etc.), and companies operating in the ESCO model.

In the initial phase of the project, KAPE and NFOSiGW focused on informative activities and exchange of opinions on the ESCO/EPC market in Poland. These were mainly meetings with ministries (mainly the Ministry of Assets, Ministry of Climate and Environment, and Ministry of Funds and Regional Policy), during which the Latvian LABEEF model and the assumptions

of the FinEERGo-Dom project were presented, and opinions and initial suggestions for planned solutions were collected. During the work and finalisation of the documents, KAPE, as an energy advisor to the Programme, conducted meetings to raise awareness of EPC/ESCO among potential participants of the Programme. The key part of face-to-face meetings and webinars was the “learning component” when the ESCO model and the EPC contract were explained. Following the announcement of the Programme, KAPE directed its efforts towards identification of potential pilot buildings. In each case, KAPE conducted a preliminary analysis of the building stock and the possibility of fulfilment of the Programme conditions. Further, KAPE worked to connect building owners, whose potential to participate in the Programme was initially deemed feasible, with ESCOs.

Although the pandemic made face-to-face meetings impossible at the time, much of the stakeholder engagement work was done remotely.

Personalised and group e-mails, telephone calls, online and face-to-face meetings and available communication and dissemination channels were used to promote the project and initiate a pilot renovation project. As a result, several hundred stakeholders were contacted. In the final phase of the Programme’s call for projects, KAPE worked intensively with nine potential beneficiaries who submitted initial proposals. Unfortunately, due to the challenging conditions of the Programme, the difficulty in obtaining financing from interested ESCO companies, and the presence of a widely used competing programme dedicated to multi-family buildings, only one beneficiary, Municipal Utilities Połczyn Zdrój, finally applied to the Programme.

Advisory Board

Two meetings of the Advisory Committee (AC) were held in Poland. AC meetings were attended by representatives from various Polish ministries (Ministry of Investment and Development, Infrastructural Programmes Department, Department of Housing and Department of Architecture, Construction and Geodesy; Ministry of Climate and Environment, Department of Heating; Ministry of Funds and Regional Development Policy, Department of Public-Private Partnership; and Ministry of Economic Development and Technology, Department of Low-Emission Economy). There were also attendees from banks, the Polish Banks Association, EIB, BOŚ, PNB Paribas, housing associations, the Association of Polish Housing Cooperatives, lawyers, and ESCOs.

The main objective of the first meeting was to present to the AC members the main idea of the FinEERGo-Dom project, the key assumptions driving the LABEEF financial instrument, and the roles of Advisory Committee members.

During the second AC meeting, FinEERGo-Dom and the Priority Programme implementation status were presented. Opinions, comments and ideas for the improvement and further development of the ESCO/EPC model in Poland were exchanged.

Authorities (Policy makers)

Meetings with representatives of various ministries were held to provide information on the project, to discuss the solutions planned in the FinEERGo-Dom project as mentioned above, to consult on the Programme's assumptions and the documents being developed and to communicate the outcomes of the project.

First meetings were held with the Ministry of Funds and Regional Policy, especially the PPP Department and the Ministry of State Assets, which supervises state-owned energy companies and plays a role in developing and implementing energy policy, and the Ministry of Development and Technology, with a focus on representatives responsible for buildings and housing. In the course of the project, a Ministry of Climate and Environment was established in October 2020. This Ministry is now the lead ministry for energy and climate policy, responsible for developing and implementing policies to reduce greenhouse gas emissions and promote renewable energy use. It also oversees the National Fund for Environmental Protection and Water Management, which provides financial support for environmental protection and water management projects.

A huge difficulty during the series of these meetings were the changes in the structures and tasks of the various ministries that occurred at that time, which resulted in occasional discontinuity in some of the meetings. The Energy Efficiency Law includes a delegation to the competent minister to develop EPC guidelines, which provide direction to government entities throughout the entire EPC project process. These guidelines, which are important for ESCOs interested in the project and for the facilitators (EPC advisors) leading and coordinating the whole process, include sample EPC contracts.. They serve as a qualified point of reference for all participants in the process, thereby reducing the time and expense required to complete the EPC contract. The guidelines were developed based, among other things, on the experiences and results of the FinEERGo-Dom project.

ESCO companies

Since the outset of the project, KAPE has also taken steps to disseminate knowledge about the FinEERGo-Dom tasks and objectives to companies that have already implemented projects in the field of thermal modernisation of multi-family buildings using the ESCO model on the Polish market.

From the very beginning, these companies expressed a very strong interest in the solutions planned in the FinEERGo-Dom project and the LABEEF model implemented in Latvia. They indicated the need for standardisation of documents and financial solutions to support this type of investment.

These companies were asked for their feedback on the developing Priority Programme assumptions and documents in Poland, especially the EPC contract. Based on discussions with ESCOs, different approaches and needs were identified depending on the size of the companies. On the Polish multi-family buildings market, there are only a few small ESCOs operating, which encounter difficulties in obtaining financing. Larger ESCOs were more interested in public buildings rather than multi-family houses.

Financial institutions

In the initial phase of the FinEERGo-Dom project, the main objective of KAPE and NFOSiGW was to attract the attention of financial institutions in Poland towards the instrument planned and to define the possible role of banks in this mechanism. At first, these were mainly meetings with representatives of Bank Ochrony Środowiska (Environmental Protection Bank), where possible POLBEEF solutions and the role of Bank Ochrony Środowiska and other financial institutions in Poland in the various possible POLBEEF frameworks were discussed.

At this stage, meetings were also held with the Polish Bank Association to discuss the project assumptions, the LABEEF mechanism and its possible replication for the creation of POLBEEF, and the definition of the role of the banks.

During the development phase of the specific Priority Programme “Renovation with Guaranteed Savings EPC +”, KAPE and NFOSiGW had multiple meetings mainly with the Polish Development Fund (PFR) in order to work out the mechanism for the purchase of receivables under this Programme. The result of these meetings was the signing of a cooperation agreement between NFOSiGW and PFR. PFR developed the forfaiting agreement, which was one of the key element of the Priority Programme documents.

The Polish Development Fund (PFR), a subsidiary of the Polish Development Bank group, is a state-owned company that offers financial and advisory services to businesses, local governments, and individuals in Poland. PFR offers loans and guarantees, equity investments, advisory services, venture capital funds, real estate development funds, and social projects. It also manages government programmes like the Polish Development Fund and the Polish Investment Fund. PFR has had a role in financing social projects, such as affordable housing and healthcare and education improvements.

In the next stage of the FinEERGo-Dom project, i.e. in the phase of discussions with potential ESCO companies interested in the projects submitted for piloting, meetings were held with banks, mainly BOŚ, in order to work out possible solutions/bank products that support ESCO companies during the investment phase of the building renovation project.

Building owners

There are two primary categories of multi-family buildings in Poland that require modernisation to increase energy efficiency: privately-owned entities, such as housing cooperatives and housing communities, and publicly owned entities, mainly local government units.

During the initial phase of the FinEERGo-Dom project, KAPE held meetings with housing associations, cooperatives, and local governments. The main purpose of these meetings was to present the ESCO/EPC model. Due to the fact that the Covid-19 pandemic occurred during the project, many of these meetings were held online. In addition, KAPE and NFOŚiGW organised webinars addressed to building owners, with the key element being the training part explaining the ESCO/EPC model.

After the announcement of the participation conditions for the Priority Programme, KAPE, as an energy advisor, prioritised meetings with potential beneficiaries of the programme. The programme was then disseminated, highlighting KAPE's role. Building owners directly contacted KAPE, to express their interest in participating in the Programme. Advisors from KAPE reached out to all stakeholders and investigated each case to identify a potential opportunity to access the Programme's grants.

As a result, nine potential beneficiaries declared their participation in the Programme. Seven of them (two public and five private) received a positive pre-assessment from NFOŚiGW and qualified for the next stage, i.e. submission of a possible grant application.

During the pre-application phase, two projects were withdrawn. The remaining five entities include three private owners (housing associations) and two public owners.

The three private entities (housing associations) that pre-applied for the pilot phase are:

Housing Association (HA) Pragnienie in Zyrardow

Housing Association (HA) Jedność in Ulnowo

Housing Association (HA) Wspólnota in Baloszyce

The two public entities that were positively evaluated in the pre-application for the EPC+ Programme are:

Polczyn Municipal Company as administrator of the housing stock of the Polczyn-Zdroj Municipality

Municipality of Gdańsk, represented by the Local Government Budget Unit Gdańsk Properties

Finally, only one application was received by NFOSiGW under PP EPC+. The applicant is the Polczyn Municipal Company.

Consultants/Facilitators

KAPE's experience as an energy advisor for the EPC + Programme confirms the necessity of a facilitator for the smooth implementation of EPC/ESCO investments.

A consultant/facilitator plays a crucial role in assisting public entities in the EPC+ programme, collaborating with them during the project preparation phase, the public negotiated procedure, and the implementation and energy management process oversight. The advisor should also assist the public entity during negotiations with ESCO contractors and play a significant technical role in overseeing the execution of scopes related to subsequent energy monitoring and management. Additionally, the advisor can support in using other possible financial resources that make the investment more cost-effective, e.g. energy efficiency certificates, also known as "white certificates" in Poland.

The success of a multi-year EPC project worth tens of millions of zlotys (1 zloty is €0.23) depends on the advisor's knowledge and efficiency. During the FinEERGo-Dom project, KAPE's work as facilitator was included as a part of the identification process for pilot projects, but in future projects, local governments can partially cover consulting costs through the ELENA mechanism.

As highlighted by the EPC+ pilot programme, ESCOs encountered obstacles in acquiring bank financing. Banks evaluate credit risk in two phases: implementation and energy management. As local governments are reluctant to increase debt on this account, the lack of ESCO financing options is a significant issue for public entities. Nonetheless, housing cooperatives and communities can benefit from the FTiR programme, which provides forgivable loans. There is a need for a financing solution for ESCO companies utilising the EPC model, with a thorough comprehension of bank risks and an additional guarantee mechanism. Such solutions are also advantageous for large public EPC initiatives and corporate-type businesses.

All the stakeholders mentioned above believe that monitoring of energy consumption plays an important role in large renovation projects and that a standardised calculation method is essential.

Competitive instrument supporting the renovation of multi-family buildings

Gospodarstwa Krajowego Bank (BGK) (National Economy Bank) operated Thermo-modernisation bonus and RES grant of Thermo-modernisation and Renovation Fund (FTiR).

Bank Gospodarstwa Krajowego (BGK) is a state-owned development bank in Poland, established in 1990. It promotes economic growth by offering financial products and services to enterprises, governments, and individuals. BGK supports infrastructure development, affordable housing, healthcare, and education, and administers government programmes like the Polish Investment Fund and the Polish Development Fund.

FTiR financing is offered especially to housing cooperatives and housing associations.

The loan amount is a minimum of 50% of the cost of the thermo-modernisation project and equal to or greater than the bonus amount.

The amount of the thermo-modernisation bonus is:

- 26% of the cost of the thermo-modernisation project

Or

- 31% of the total cost of the thermo-modernisation project together with a RES project involving the purchase, installation, construction or modernisation of a renewable energy source installation (provided that the cost of the RES installation constitutes at least 10% of the total cost of the thermo-modernisation and RES installation)

The thermo-modernisation grant can increase the thermo-modernisation bonus by 10% of the investment costs for deep and comprehensive thermo-modernisation of a multi-family building.

This bonus is well recognised, well-known and widely used in the Polish market.

The experience of the FinEERGo-Dom project revealed that housing associations and cooperatives prefer this instrument. Meetings and discussions with ESCO companies indicated that, given such attractive conditions in Poland, they too believe that housing cooperatives and communities should use this instrument and that the EPC+ Programme should be dedicated to public buildings.

2.3.3 Evaluation and conclusions from the stakeholder action plan implementation

As mentioned above, the stakeholder engagement process depended on and was adjusted accordingly to the respective stage of project implementation.

The involvement of NFOSiGW and KAPE NFOSiGW simplified the whole process of implementing the project in Poland. The NFOSiGW is the financial institution responsible for creating programmes supporting pro-environmental investments in Poland. KAPE is known as a consulting company with extensive experience and knowledge. Such a cooperation implementing the Programme builds trust and confidence in the proposed solutions. This made it easier to attract stakeholders from the national administration and other target groups with an important role in the energy efficiency contract market.

2.3.4 Use of the platform

The SUNSHiNE platform was presented to the NFOSiGW team working on the development of the Priority Programme. They tested the platform but ultimately decided not to use it for the Priority Programme, as NFOSiGW already had a well-known and tested tool. KAPE, as an advisor, registered potential projects/buildings on the platform.

2.3.5 Replication of the LABEEF model and contracts

The energy saving contracts and guidelines that were prepared in Latvia (within previous projects) had to be translated into the national language and checked according to the existing national legal situation. The overall objective was to maintain the structure of the

investment policy guidelines and adapt the documentation only if required by national law or regulations.

NFOSiGW used in-house legal advice to review the contents of the contract and its annexes according to Polish laws and regulations. As regards the forfeiting agreement, PFR, the financing partner, developed the template of the document.

Since an agreement was signed, there are no significant legal obstacles to using the solution and framework offered by the LABEEF model for the renovation of their apartment buildings. A simplification of the process and documentation would help to scale the projects and take a more holistic approach of including renewables in the renovation to meet the stated objectives of the Building Energy Efficiency Facility: safety, health and comfort guaranteed by energy savings.

2.3.6 Establishment of pilot projects

Most energy demand in residential buildings is used for heating purposes (61%), the rest for hot water production (15%), cooking (9%), and lighting (7%). Given that over a billion square metres of multi-family buildings were built before 1989, there is a significant potential for saving energy as well as reducing pollution. It is worth noting that 23 of the most polluted cities in Europe are located in Poland. While it is argued that many of these buildings have undergone renovations such as replacement of windows and modernisation of heating systems, in reality the Polish State Auditor has questioned the effectiveness of current practices. With a renovation rate of less than 1%, there is still more work to be done.

When deciding whether to participate in an EPC+ project, public entities must take into account the legal requirements and the exemplary role of local authorities in improving the energy efficiency of buildings. In an EPC+ contract, the contractor takes on most of the project risk. Despite this, the use of this type of contract in the implementation of energy efficiency improvements in buildings is still not popular in Poland. In the pilot phase of the EPC+ Priority Programme, KAPE acted as a consultant, helping beneficiaries to collect basic data and make estimates of possible savings. The organisation also established contact with ESCOs and mediated communication between them and banks, potential beneficiaries and the National Environmental Protection Fund. KAPE contacted institutions considering the EPC+ pilot as a grant option for energy renovations of their buildings and offered them technical advice. KAPE's facilitation of projects was crucial and played an important role in the final outcome of grant applications submitted to the National Fund for Environmental

Protection and Water Management. According to the findings of the EPC+ pilot programme, housing cooperatives and ESCOs struggle to acquire financing from traditional financial institutions like banks. Implementation and energy management are the two processes that make up a bank's credit risk assessment. Because local governments are hesitant to take on additional debt related to the risks, the absence of ESCO financing options is a serious problem for public enterprises. In this context, the FTiR programme, which provides loans that are eventually redeemed, can be of assistance to housing cooperatives and communities. It is clear that ESCO enterprises using the EPC model need a financing solution, as well as an additional guarantee mechanism and an accurate understanding of the risks that banks face. These solutions are equally beneficial to large public EPC projects as well as corporate-style businesses.

2.3.7 Market barriers

When it comes to renovation projects, the construction sector has a number of challenges, some of which include lower value added per employee, increased risk, and higher staff qualification standards. Refurbishments demand more sophisticated construction processes and expert personnel, while new construction is easier to standardise and calculate construction costs properly. However, new construction also requires more skilled labour. The current shortage of staff and skilled employees has a greater impact on renovation work than on new development.

A significant increase in the renovation rate is only possible through the simultaneous implementation of multiple initiatives, such as financial incentives, a strengthened regulatory framework and awareness-raising efforts. The current variety of subsidies is quite broad, so there is a need for coordinated cooperation, continuous optimisation and accurate communication with potential grant applicants.

2.4 Romania

2.4.1 Energy contracting

Energy contracting is an important topic in Romania. Significant resources will be required for financing energy efficiency, and the development of a well-functioning market with the involvement of financial institutions (FI) is crucial for the implementation of energy efficiency objectives in Romania.

The buildings sector in Romania needs special focus and efforts as its expected energy savings are significant. Several reasons have led the energy efficiency market in Romania being far from its potential:

- Historically, loans have been the norm, and cessions, guarantees and bridge financing are yet to be used widely for energy efficiency (EE) project financing. Experience in the application of more elaborated EE financing schemes is very limited (e.g. collaboration/blending with public funding), mainly because EPC+ contracts were not regulated in Romania in the past.
- There is a lack of structured programmes and institutions that can coordinate at the national level in order to attract diverse financial resources (from financial institutions, the EU, donors, the government, etc.). They should also be able to distribute funds to beneficiaries either directly or via financial intermediaries, execute monitoring and control and support technical implementation (through guides, standard documents, etc.)
- Conditions for repaying and servicing energy efficiency loans with savings generated from improved efficiency are considered quite risky due to the difficulty of documenting and verifying these savings.
- Municipal or residential clients are much less appealing to financial institutions than private sector clients due to their lack of capacity, knowledge, unclear and complicated decision-making processes and risks of election cycles.
- There is a lack of mutual understanding among stakeholders in EE projects (financial institutions, beneficiaries, technical analysts, etc.). According to their experience, FIs tend to believe that technical studies systematically overestimate energy savings from efficiency investments; this results in uncertainty about project performance.

- Other risks perceived by financial institutions: insufficient data and monitoring of the implemented EE measures, no established practice of monitoring and verifying the achieved results of EE projects because of volatile energy prices evolution.

Nevertheless, financial institutions are eager to develop the energy efficiency market and use the upcoming opportunities provided by European and national policies. An example is the Green Mortgage Programme developed by the Romania Green Building Council and several banks, which promotes innovative green home certification.

ESCOs can contribute to the creation of a functional energy efficiency market and to the elimination of some present obstacles. Energy service companies can play a very important role in attracting investment capital from third-party sources to complement public funds, as well as in increasing the level of technical expertise. The Romanian energy services market is currently underdeveloped and needs active and constant stimulation from local and state authorities. Efficient support of energy service companies also implies overcoming the relatively sceptical attitude of Romanian consumers towards increasing energy efficiency and accessing such services. European Union policies and European debates on ESCOs can lay the groundwork to define a more effective framework for these companies. Local authorities can be a key element in increasing the role of energy service companies in the Romanian market.

The most difficult group to engage were buildings owners and building administrators. This challenge arises from the availability of non-refundable grants (i.e. grants that do not have to be reimbursed by the beneficiary) for energy efficiency investments in buildings.

Despite the fact that Romanian project team did not receive binding confirmation for implementing a pilot project in Romania, the exchanges of information and discussions were valuable and helped increase our knowledge and the awareness of the stakeholders regarding energy efficiency measures, EPC+ contract solutions and ESCOs.

2.4.2 Stakeholder engagement

For Romania, the FinEERGo-Dom project represents an opportunity due to the fact that, like other states in the region, buildings were constructed without taking into account energy optimisations and useful technologies during the totalitarian regime. This led to a stock of multi-family and public buildings suitable for deep renovation with energy efficiency measures. However, similar to the situation of other partners in the FinEERGo-Dom consortium, stakeholders need to be convinced of the advantages of deep building

renovations, not only for enhanced energy efficiency, but also for the benefit of local communities.

During the project period, MMP.RO engaged with different stakeholders and held around 30 meetings.

Increased communication with the local stakeholders provided additional insight and helped to identify the main challenges. The activities on the local level helped to identify possible projects in the pipeline. Currently, two projects were identified:

- The first project is focused on a complex of social residential buildings in Sibiu, which is administrated by URBANA SA. The general manager is interested in renovation and replacement of the central heating system. Having collected the technical details in order to calculate the energy and money-saving potential, we see the necessity of conducting an energetic audit and preparing a business plan.
- The second project concerns buildings of the Social Assistance Department of Sibiu County (DGASPC Sibiu). The management of DGASPC Sibiu is analysing the buildings in order to decide which one needs to be renovated and where an investment would be most beneficial.

Conclusion on stakeholder engagement in Romania

The main achievements with stakeholders in Romania are:

- Interest of some stakeholders in the EPC+ contract as a solution for financing energy efficiency measures;
- Constructive discussions during the meetings;
- Connections established between participants, extending the network.

We achieved the following actions and changes in Romania:

- Information of stakeholders about the opportunities to invest in buildings;
- Increased awareness of the utility of energy efficiency measures;
- Spread of knowledge regarding the EPC+ contract as a solution for financing energy efficiency measures;
- Change of the assumption that it is impossible to finance energy efficiency measures.

Although we did not manage to get a binding confirmation for implementing a pilot project in Romania, we feel that overall we were successful in engaging with stakeholders. We had

the opportunity for very useful exchanges of information and discussions and were able to expand our knowledge and stakeholder awareness.

2.4.3 Evaluation and conclusions from the stakeholder action plan implementation

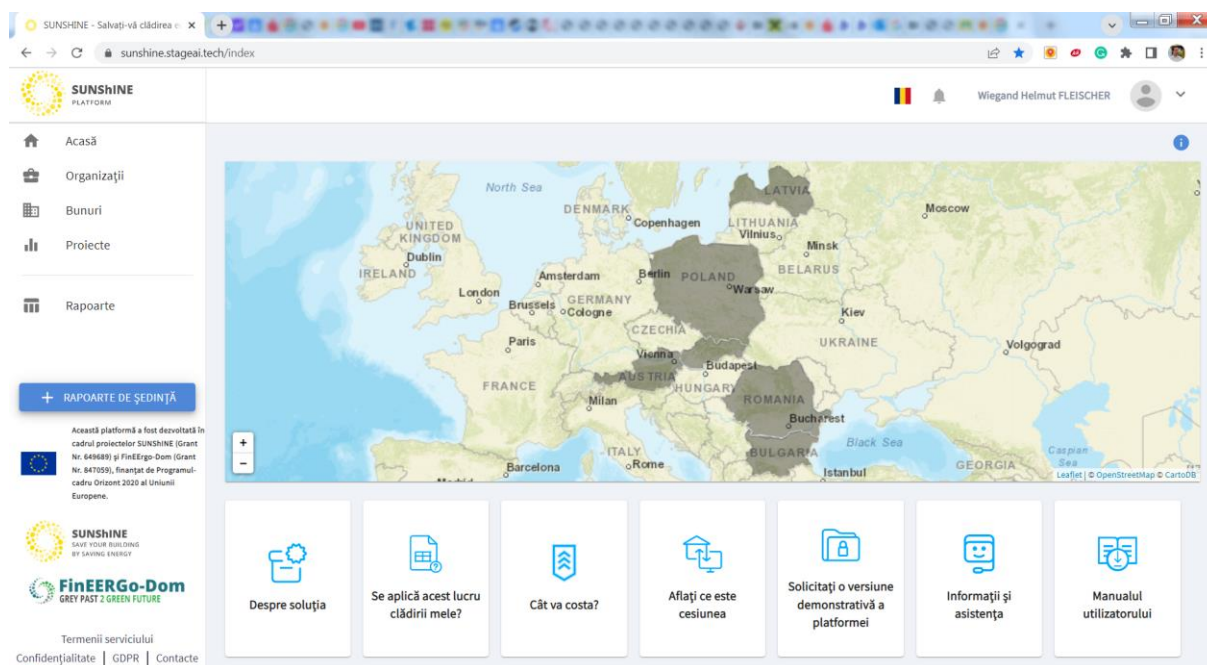
Many one-to-one meetings were organised with building owners and housing associations. Engagement with municipalities, banks and financial institutions, and ESCOs was less than required by the Stakeholder Action Plan. Nevertheless, communication was positive overall as interest in the developed solution was high. Until now, we have been unable to reach an agreement with owners and housing associations because of different or opposing opinions and/or lack of funds. The situation mentioned before did not generally discourage them from engaging with us, but we could not achieve a final commitment for a pilot project in Romania.

Among other stakeholder groups, open-mindedness and interest in EPC+ contracts were observed in general, which facilitated in-depth discussion of the concept. Discussions continued during the focus group and Advisory Board Committee meetings. Even if the engagement metrics were not met, MMP.RO considers stakeholder engagement successful as stakeholder awareness of the concepts implemented and developed during the FinEERGo-Dom project was raised. The results reveal the need for a more heterogeneous approach to stakeholder engagement to mobilise the interest of all the parties involved and tailor the right engagement instruments to the particular needs of stakeholder groups.

2.4.4 Use of the platform

The SUNSHINE platform was made available and updated for the partner countries of the FinEERGo-Dom project. Contents were translated into Romanian in order to make it easier for Romanian stakeholders to access the information on the platform.

Figure 10: Screenshot of the SUNShINE platform translated into Romanian [Source: SUNShINE Platform]



On the SUNShINE platform, Romanian organisations and stakeholders have the possibility to register, check the information available, find the Romanian version of the EPC+ contract and upload documents if they want to start a pilot project.

During stakeholder meetings, the SUNShINE platform was demonstrated and first organisations and assets from Romania were successfully registered. For example, Mattig Management Partners RO SRL was registered as a FinEERGo-Dom project partner and URBANA SA as a potential pilot for Romania with 18 social multi-family residential buildings.

2.4.5 Replication of the LABEEF model and contracts

For the replication of the LABEEF model and contracts in Romania, the following main points were fulfilled:

1. Legal evaluation of the LABEEF model and contract and recommendations for an EPC contract in Romania;

2. Adaptation and translation of the LABEEF contract into Romanian and adaptation of other documents in accordance with the opinion of the legal adviser.

Regarding the legal evaluation of the LABEEF contract (see point 1), the conclusion is:

The documents submitted for analysis were prepared wholly according to the legislation of Latvia. Therefore, a legal adviser was hired to amend them according to Romanian legislation.

The Romanian Ministry of Environment, Waters and Forests has launched a public debate on 6 August 2020 on the regulation approving the *Financing Guidelines* for a programme to increase energy efficiency and smart energy management in public buildings, (intended for educational establishments as well). This document has not yet been adopted, but it is a step forward in the authorities' approach to developing standardised legislation applicable to public entities in the process of improving the energy performance of buildings.

When analysing the case of concluding an EPC with a private entity, we modified the documents submitted by the client in accordance with Romanian legislation. However, we would like to stress that these changes were made in conditions where there is no dedicated facility like LABEEF in Romania. Furthermore, there is still no EPC model, nor any financial and technical rules and guidelines for energy efficiency measures officially developed by Romanian authorities (*ANRE²⁴ or the Ministry of Development*), apart from applicable international rules.

In addition, it is imperative to know the characteristics of projects in detail as Romania has specific legislation for co-owned buildings and for financing renovation works in the case of single-family houses.

Regarding financing, we have tried to highlight certain aspects. For the time being, there is a financing mechanism for projects to increase the energy efficiency of single-family houses. In addition, the Financing Guidelines for the Programme for the increase of energy efficiency of educational establishments were put up for public debate in August this year, noting that these guidelines were not yet a mandatory rule. With regard to these guidelines, it should be pointed out that the content specifies that VAT qualifies as an eligible expenditure for

²⁴ ARNE is the National Energy Regulatory Authority in Romania.

financing, provided that such expenditure has been requested and is not recoverable, reimbursable or offset by any other means according to legal provisions.

The approach to financing mechanisms can be further analysed and detailed from this point of view, too, depending on the specificity of the project for which EPCs are chosen.

In consideration of the recommendation of the legal adviser, the following documents were adapted in English in accordance with Romanian legislation and translated into Romanian:

1. Annex I – EPC – General Terms and Conditions
2. Annex I – EPC – Specific Conditions
3. Annex II – EPC – Forfeiting Agreement
4. Annex III – EPC – Maintenance Agreement
5. Annex IV – EPC – Instructions
6. Annex V – EPC – Forfeiting Instructions
7. Annex VI – EPC – Measurement and Verification Instructions

The ROMBEEF (Romanian Building Energy Efficiency Facility) investment policy guidelines and standards for building renovation have been added to the documents mentioned above. These consist of general eligibility criteria, forfeiting agreement, maintenance agreement, EPC+ instructions, forfeiting instructions, and measurement and verification instructions, provided in both English and in Romanian²⁵.

The investment policy guidelines and standards prove highly useful for all stakeholders, fostering a shared understanding of the ROMBEEF contract, the associated processes, and the financial aspects involved.

2.4.6 Market barriers

This section identifies the barriers contributing to the low renovation rate. As clarified in the previous section, Romania experiences high overall construction activities, leading to the conclusion that the low renovation rate is attributable to certain barriers.

When talking to various team members and market practitioners, we found a consistent opinion, reflected in the following statement: “First, I want to mention that it is easier to build energy-efficient buildings than to renovate existing buildings.” Apparently, barriers seem to

²⁵ <https://sunshine.stageai.tech/guidelines>

be first and foremost psychological. This observation may also align with the opinion, where private initiatives are more inclined toward constructing green buildings from scratch rather than investing in renovations.

The most important barrier hence seems to be the reluctance to renovate. This decision of building owners is influenced by the general perception that constructing new buildings is easier, coupled with economic aspects.

Another important reason for low renovation rate is the existence of a split incentive. Usually, the building owner is responsible for capital expenditures (deep renovation), while the occupants, e.g. renting residents, bear the operational expenditure and therefore benefit from the capital expenditure. Therefore, building owners do not have a commercial incentive to initiate and finance deep renovations.

When the building owner and occupant are the same person, capital expenditures (deep renovations) typically are done only every few decades. In such cases, the owner/occupant often does not have sufficient information and knowledge to decide on the necessity and optimal investment scope of a deep retrofit.

Even if the owner/occupant has the required knowledge for taking an investment decision, there is a high probability that such an investment would compete with other expenditures that usually have a higher priority (e.g. replacing domestic appliances, buying a new car, paying education for children, going on holidays, etc.). In cases where the owner/occupant is a public sector actor (municipality), their stretched budgets also do not allow to prioritise deep renovations, as more urgent investment projects (e.g. repairing existing infrastructure such as roads or pursuing politically more rewarding projects such as constructing new hospitals or schools) often take precedence.

Additionally to the low financial incentives, Romania faces a particular problem. The country has around 1 million abandoned houses as a consequence of migration in previous years, and approximately 0.1% of houses are being abandoned annually (according to NAPEE – Energy Efficiency Action Plan in Romania 2017). On one hand, this has automatically reduced overall national energy consumption, improving statistics for meeting efficiency targets. On the other hand, this also creates problems, particularly in multi-family dwellings, to reach joint decisions on renovations. Obviously, absent parties have no interest in supporting positive resolutions and may block potential measures.

There are a number of obstacles to be expected during the renovation process of existing buildings, with the most frequent being technical, financial, and social barriers. Finally, administrative challenges must also be overcome.

Technical barriers:

- Embedded cost of failures during the construction on a traditional building site, which has an estimated impact of around 20% of the global construction cost;
- Lack of standardised solutions for all relevant building (multi-family residential buildings and public buildings);
- Shortage of skilled workers with the capability to carry out the required tasks

Financial barriers:

- Lack of potential investors;
- Lack of financing for building or flat owners;
- High cost;
- Long pay-back period.

Knowledge and commercial barriers:

- Limited technical know-how of owners/occupants: They often lack the expertise to make optimal investment decisions, while project developers must sell “projects that have seemingly acceptable investment costs”. Barriers include the tendency for owners/occupants not to consider life cycle costing but to focus on investment costs primarily.
- Absence of performance guarantees: Project developers and construction companies usually do not offer any performance guarantees, i.e. they do not warrant energy cost savings that would allow determining and relying on a specific payback period. While ESCO projects could address this issue, there is a lack of knowledge and uniform ESCO standards.

Obstacles in financing projects with national financial support to overcome barriers:

- Reduced capability of some beneficiaries to prepare and implement projects (delays in obtaining authorisations and permits from various state authorities, non-compliant technical solutions/proposals);
- Insufficient funding of projects;
- Delays due to procedural claims in the public procurement process;
- Delays in the execution of works, bankruptcies of beneficiaries;

- Reduced capacity for co-financing in some cases.

Social barriers:

- Lack of interest, understanding and/or support of residents: It requires significant effort to move a multitude of actors (users of multi-family residential buildings and public buildings), who often lack interest, understanding, or support, towards a joint investment decision;
- Low awareness of energy efficiency;
- Problems with disturbance/relocation during site works.

Taking all these barriers into account, it becomes clear why the renovation rate is still low in Romania.

2.5 Slovakia

2.5.1 Energy contracting

In Slovakia, more than 80% of the multi-family housing stock has already been renovated, using grants and support funds, mainly sourced from European Structural and Investment Funds. The remaining housing stock has not been renovated primarily due to either complexity of the technical solutions required and/or the lack of the required agreement among building owners on the renovation measures and the overall process.

In terms of the degree of renovation implemented, a large number of buildings were only partially modernised, implementing the most necessary measures while keeping the investment volumes low. In these cases, further retrofitting solely on the basis of financing from future savings is very difficult, as the payback period would be unacceptably long and the financing costs would make the project financially non-viable.

The challenge is therefore to combine the owner's own resources with potential subsidy support from EU funds, state support programmes or dedicated funds and support instruments provided by financial institutions with EPC financing based on the use of future guaranteed savings.

Conversely, in the public buildings segment, little progress has been made to date. Public buildings are mostly in an outdated state, necessitating renovation, but not enough funds have been allocated for this purpose over the last 30 years. It is worth mentioning that, since all energy fees were covered by the state budget, energy consumption in public buildings

has not been a subject of interest, and there has been a lack of incentive to save energy. A number of buildings have technically dated heating systems, poor building envelope conditions, and reduced overall usability, approaching the limits of sustainability. These buildings have not been upgraded due to financial constraints at both the municipal and national levels.

The development of energy contracting in Slovakia has experienced challenges over the years. Following a promising start of the use of the EPC model for building reconstruction in the second half of the 1990s, activities slowed down due to a variety of reasons. However, interest and market demand has reignited with the emergence of EPC services suppliers (ESCO companies). The establishment of the Association of Energy Services Providers (APES-SK) and the growing number of its members are evidence of the rising interest in this market segment.

Furthermore, there is an increased interest from foreign companies, primarily from the Czech Republic and Austrian, to enter the Slovak EPC service market. The market potential is also currently evaluated by companies in the energy distribution, energy trading, as well as large construction and engineering sectors.

The legal framework for the EPC has been well-established, with certain amendments in the last year contributing to the stability and attractiveness of this concept.

The provision of energy services with guaranteed energy savings is mainly regulated in Slovakia by the following legislation:

- Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency;
- Act No. 321/2014 Coll. on energy efficiency has created a clear framework for the provision of guaranteed energy services (EPC). According to this act, an energy service is defined as a service provided on the basis of a contract concluded between an energy service provider and an energy service recipient. The aim is to achieve verifiable and measurable or estimable energy savings and energy efficiency improvements. This should result in financial or material benefits for all parties to the contract, obtained through the implementation of more energy-efficient technology or activities. This includes the operation, maintenance, or control necessary for the provision of the energy service.

- Decree No. 99/2015 Coll. from the Ministry of the Economy of the Slovak Republic, which establishes details for the provision of energy support services and guaranteed energy services

In addition, the majority of EPC suppliers in Slovakia follow the European Code of Conduct for EPCs. This framework provides adequate safeguards and protection for recipients of guaranteed energy services (EPC) and is viewed as a positive and enabling structure.

The EPC contract template for the public sector came into force on 1 February 2019, removing the debt ceiling obstacle for municipalities. Based on the legislation, all public entities interested in implementing a GES project²⁶ (energetic renovation of buildings) are obliged to use a model energy efficiency contract designed for the public sector that ensures compliance with conditions for reporting outside public debt. FinEERGo-Dom has adapted the respected documentation.

As stipulated in the Energy Efficiency Directive 2012/27/EU, 3% of buildings owned and used by the central government, with a total floor area over 250 m², have to be renovated annually to achieve at least the minimum energy performance requirements. Estimates indicate that an investment of €200–300 million p.a. is needed to fulfil the 3% renovation rate set by the EU, with 40% of this goal achievable through EPC.

Therefore, municipalities and self-governing regions have strong interest in EPC. However, there are challenges, including limited financing access as well as a lack of a systematic approach towards transparent tender procedures, which are strongly influenced by political will.

2.5.2 Stakeholder engagement

The Slovak project team focused on the four main groups of stakeholders: municipalities, building owners/housing associations/heat suppliers, ESCOs, and banks/financial institutions.

The meetings were intended to provide general information about the project and its goals, to raise awareness of the concept and proposed model, as well as to facilitate participation

²⁶ <https://engie.sk/en/referencie-engie/ges-projects/> 17.11.2023

and engagement of these key stakeholder groups. Furthermore, upon the availability of the SUNShINE platform, live demonstrations were carried out and test trials were conducted.

Below is a brief outline of the team's activities and experience in engaging with the various stakeholder groups.

Municipalities, SK Government

As was set in the Energy Efficiency Directive 2012/27/EU, 3% of buildings owned and used by the central government, with a total floor area over 250 m², have to be renovated annually to achieve at least the minimum energy performance requirements. Therefore, municipalities and self-governing regions should actually have strong interest in EPC. However, there are challenges, including limited financing access as well as a lack of a systematic approach towards transparent tender procedures, which are notably influenced by political will. Negotiations are progressing slowly and tediously.

The team had meetings with main stakeholders in this group, such as the Ministry of Economy of the Slovak Republic, the Union of Towns and Cities of Slovakia, selected municipalities, and the Slovak Innovation and Energy Agency.

While the Ministry of Economy offered to provide general support, discussions have thus far remained at a broad and preliminary level.

Building owners/housing associations/heat suppliers

As aforementioned, a large portion of residential buildings has already been refurbished over the last 30 years. Similarly, as pointed out in the previous group, the Energy Efficiency Directive 2012/27/EU stipulates that each Member State must ensure the achievement of annual energy savings of 1.5 % on energy sales by energy distributors or suppliers.

Building owners:

Building owners have, on the whole, expressed interest. A key obstacle identified in numerous meetings is the demand for extensive new works that do not yield energy savings (for example, adding new floors, enlarging the building, splitting of space into smaller areas/apartments, etc.). Unfortunately, such measures are costly and not repayable through energy savings.

The team actively discussed the installation of new and optimal measures, such as installation of PV panels on building roofs or in garden spaces, change of heat source from

gas or oil boilers to heat pumps, and introduction of smart energy systems that monitor heat and electricity consumption and facilitate cost control and reduction. In general, there is significant interest and potential in adopting these new measures.

Housing associations:

Several meetings were carried out, with smaller associations displaying more interest and flexibility. All larger associations contacted, however, responded negatively and stated that the major part of the renovation works had already been completed. During selected meetings with smaller associations, some questions arose related to possible new measures, such as installation of PV panels on building roofs to cover electricity consumption for lifts and auxiliary space lighting (corridors, staircase, common space, etc.). The team provided advice and offered assistance in project development. For this reason, electricity consumption was included in the platform tables.

Heat suppliers:

As part of the approach of the team, focus was laid on meetings and discussions with selected district heating companies, which supply heat to residential buildings. The interest was significant, as it is in the interest of all relevant stakeholders to have affordable heating and ensure viable solutions for renovation and refurbishment.

ESCOs

Key stakeholders in this group include the Slovak Association of Energy Service Providers (APES), Energy Centre Bratislava, and the Building Testing and Research Institute. Multiple meetings and presentations were held with APES, which covers all active ESCOs in Slovakia. The team demonstrated the SUNSHiNE platform, discussed the potential and challenges of the sector, and agreed to cooperate on any activity relevant to both parties.

Banks, financial institutions

The project encountered difficulties in attracting financial institutions for several reasons. This group of stakeholders has shown less interest, given that each institution has its own approach and policy in assessing and financing EPC, if they are involved in such activities at all. For public buildings, banks follow a special evaluation and assessment procedure, conduct internal credit ratings of project owners and borrowers, and prefer individual methods in line with their guidelines. Limited know-how and a lack of experienced experts

in energy efficiency also contributed to low interest and engagement from this stakeholder group.

Furthermore, given the need for deep renovation measures in most Slovak public buildings, payback periods and financial viability of projects are not attractive enough for the financial sector. Due to the regulatory framework, particularly EUROSTAT treatment within the EPC definition, only measures based on energy savings can be considered EPC and financed as such, the remaining renovation works are to be treated as contracts for work. This leads to extended payback periods, which financial institutions are not eager to pursue.

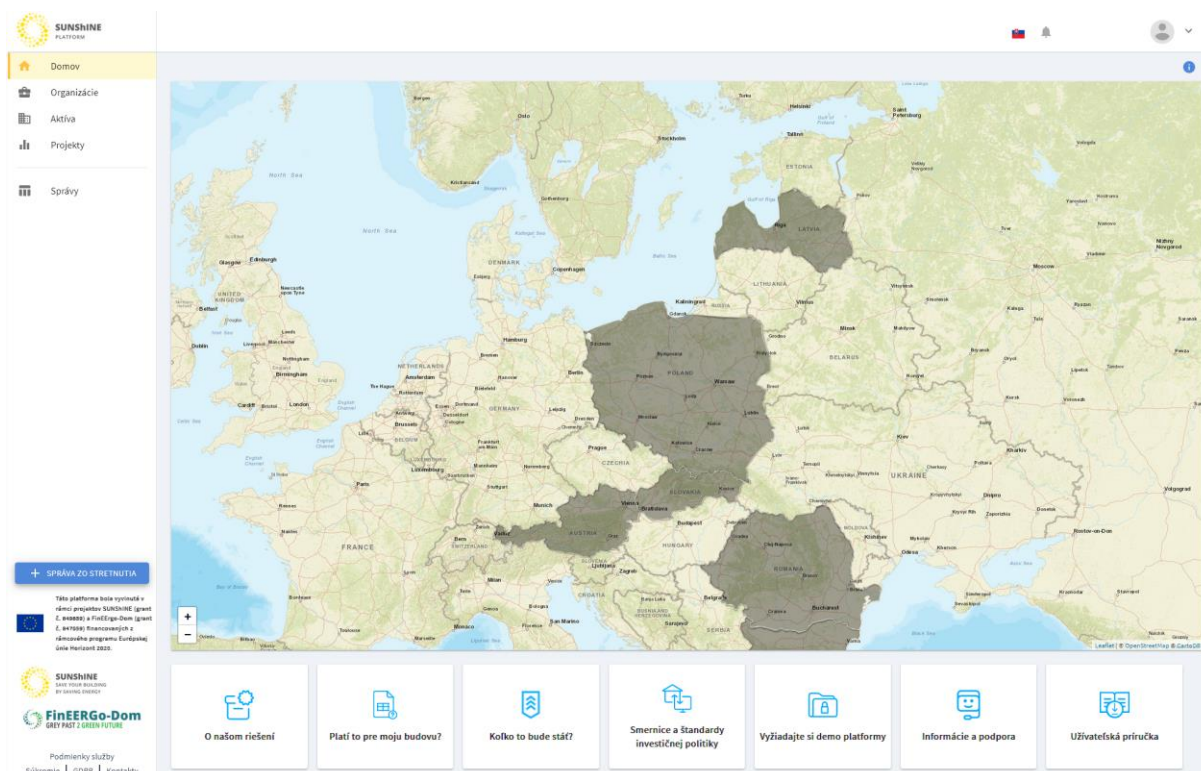
2.5.3 Use of the platform

The platform serves as a very useful component for EPC projects, facilitating the assessment and evaluation of all refurbishment and renovation measures for the buildings using the EPC method, complete with necessary calculations.

The platform was introduced in Slovakia as soon as it was translated into the Slovak language. Since its launch, it has been promoted as a tool offering continuous and reliable monitoring of planned and actual energy consumption for organisations, businesses, owners, and residents.

A screenshot of the SUNShINE platform in its Slovak version is presented in Figure 9 below:

Figure 11: SUNShINE platform in the Slovak language [Source: SUNShINE Platform]



The team of MMP.SK actively supported Stage AI throughout the development, testing, and implementation stages of the project. Various features and functionalities of the platform were continuously discussed internally and with selected stakeholders in order to optimise its usability. Some of the proposed changes were adopted and implemented by Stage AI. For example, our team proposed to switch the measurement unit for domestic hot water consumption to MWh or kWh instead of m³ to align with the standardised EU measurement system. Furthermore, a requirement to provide data based on billing meter readings or energy suppliers' billing invoices was added to the platform to guide data input. The platform was presented and demonstrated at online and personal meetings with various stakeholders, including interested buildings owners, at the Advisory Committee meeting, and during training sessions.

The team started using the platform from its inception and actively contributed to the improvement of some features throughout the process. After each review or demonstration,

the received feedback was taken into account and adjustments were proposed for the improvement of both functionality and selected features.

During most meetings, partners acknowledged the usefulness of the platform and its functionalities but suggested adding more input information about energy data. For example, some of the comments were related to parameters of electrical energy consumption. The platform initially provided users with EPC projects focused on measures for saving thermal energy but not electricity. Consequently, there was a suggestion to include measures with parameters for saving electricity, including installation of photovoltaic panels, modernisation of the lighting system, introduction of an EMS, etc. This suggestion was ultimately implemented by Stage AI.

There was also a suggestion that the definition of savings should be based on the official energy audit. This was discussed internally, leading the consortium partners to the conclusion that the proposed approach benefits all stakeholders and platform users, due to the fact that an energy audit is done by an external third party, which is independent and free of conflict of interest. Such data would provide for more reliable assessment and verification of calculations and ensure the viability and bankability of the projects.

A disadvantage observed by participants in the early stages of the platform's development was its complexity. The structure of data input was deemed too complicated and not easily understandable. For example, it is challenging for new users to find the tables for entering energy data, as they were provided in a separate annex (Annex IV) within the structure. Also, understanding how to work with the platform was difficult for new users, requiring several trials and considerable time. Following the proposed adjustments, the platform's usability and user-friendliness were improved, as reflected in the positive feedback received by the team.

All projects that have been marked as potential pilot projects in Slovakia were entered into the platform by the Slovak team. The full version was demonstrated at each meeting with the intention to enable all relevant stakeholders to work with the data and familiarise them with the functionality of the platform. A link for a demo platform was also provided to interested parties for trial, with support from our team in person or online.

However, for the actual registration of company projects, some of the stakeholders expressed reluctance to upload specific company documents or signed contracts, citing either confidentiality reasons or adherence to company data policies and safety restrictions.

2.5.4 Replication of the LABEEF model and contracts

The replication of the LABEEF model and contracts was successfully implemented in Slovakia. A key advantage for Slovakia was the introduction of an official EPC (GES – Guaranteed Energy Services, as it is called in Slovakia) template for the public sector, presented by the Ministry of Economy, which came into force on 1 February 2019. Accordingly, the debt ceiling obstacle for municipalities was removed. This contract template is mandatory for use in public building renovations and does not allow any changes or adjustments.

The EPC contract template for buildings was based on the Latvian contract and adapted to Slovak legislation to meet all legal local requirements. The final EPC contract, the forfeiting contract, and maintenance contract were prepared in both English and Slovak versions. All adjustments were made together with the local legal team. Comparison of the eligibility criteria was performed with the Latvian version across all financial, legal, and technical parameters.

Below are some outcomes of the analysis and the recommended approach for implementing the LABEEF model documentation.

A comparison of the EPC template approved for GES projects in the Slovak Republic and the EPC contract for Latvia was carried out, with a primary focus on the General Terms and Conditions and the EPC template. The team detected considerable differences between these contracts. Nevertheless, other provisions in both contracts are similar, i.e. they contain a similar regulation of rights and obligations.

In terms of the requirements regarding the analysis, they are not exactly specified in Act No. 321/2014 Coll., the Energy Efficiency Act. However, in accordance with the methodology of EPC contracts, such an analysis should include an examination of the client's current energy system and its use/operation to the extent required by the provider for the purpose of:

- I. Verifying the correctness of documents provided by the client;
- II. Obtaining a more detailed picture and overview of the potential for energy savings;
- III. Preparing project documentation for reconstruction.

As regards legislation in this case, European regulations apply within their scope, as well as Act No. 321/2014 Coll., the Energy Efficiency Act, and other legal regulations valid for the territory of the Slovak Republic.

Concerning the VAT regime, Section 6 of the Act on the Ownership of Apartments and Non-Residential Premises governs the administration of an apartment house by owners of the apartments and non-residential premises. A community of owners of the apartments and non-residential premises may be established as a legal entity for the administration of the apartment house. Alternatively, owners of the apartments and non-residential premises may enter into a contract for the administration of the apartment house with another legal entity or natural person, especially a housing cooperative.

The administration of the apartment building involves the procurement of services and goods that the administrator or community uses in lieu of the owners of the apartments and non-residential premises to ensure the good functioning of the building. This encompasses the operation, maintenance and repairs of common parts of the house, common facilities, adjacent land and accessories, and services related to the use of the apartments or non-residential premises. Additional responsibilities of the administrator or community include keeping a house account with a bank, recovering compensations for any damage or arrears in the fund for operation, maintenance and repairs, and other arrears. Moreover, they execute other activities that are directly related to the use of the house as a whole by individual owners of the apartments and non-residential premises. The administration regime is therefore essentially the same, whether carried out by the community of owners or by an administrator.

If owners of the apartments and non-residential premises enter into a contract with an administrator for the administration of the apartment house, then, the administrator is obliged, pursuant to Section 8b of Act No. 182/1993 Coll., to administer the house independently on behalf and at the expense of the owners of the apartments and non-residential premises in the house. The administrator is entitled to act, in the administration of the house, on behalf of the owners of the apartments and non-residential premises in the house and represent them before a court.

Pursuant to Section 69 paragraph 12 letter j) of the VAT Act, in the case of supply of construction works, including the supply of the building or part thereof under a contract for work or other similar contract falling within Section F of the CPA, and in the case of supply of goods together with installation or assembly if the installation or assembly falls within Section F of the CPA, the person obliged to pay tax is the taxpayer who is the recipient of the performance from another taxpayer. In other words, if the taxpayer delivers performances defined in Section 69 paragraph 12 letter j) of the VAT Act to another taxpayer to the place

of delivery in the same country, the taxpayer receiving the performance is considered the recipient of the performance and is thus the person obliged to pay tax.

If, in ensuring construction works according to Section 8b paragraph 1 of Act No. 182/1993 Coll., the administrator of the apartment house acts on behalf and at the expense of the owners of the apartments and non-residential premises in the house, the administrator is not considered the recipient of the construction works. Consequently, the administrator is not the person obliged to pay tax according to Section 69 paragraph 12 letter j) of the VAT Act. In this scenario, the supplier of the construction works should issue the invoice with the application of VAT.

If the administrator of the apartment house acts on behalf and at the expense of the owners of the apartments and non-residential premises, they should not act as a taxpayer when ordering any performance, even if assigned a VAT ID as a taxpayer due to the administration of apartments and non-residential premises. Instead, they should act solely as the administrator representing the owners of the apartments and non-residential premises.

In the provision of goods and services, if the administrator acts on behalf and at the expense of the owners of the apartments and non-residential premises, the recipient of the construction works or other performances are ultimately the individual owners of the apartments and non-residential premises. Fees related to the administration of the apartment house are partially exempt from VAT, with some being subject to VAT.

If the renovation also includes the reconstruction of the building not intended to achieve energy savings, the rights and obligations of the parties to the contract need to be regulated in a separate agreement. In terms of Slovak legislation, this would be a contract for work concluded in accordance with Act No. 513/1991 Coll., the Commercial Code, as amended.

The legal justification for the separation of works and investments stems from the Concept of the Development of Guaranteed Energy Services in the Public Administration of the Slovak Republic, which was approved by the Resolution of the Government of the Slovak Republic (the "Concept").

The Concept acknowledges the possibility that the public administration body might undertake a more complex renovation of the building, including other investments that are not primarily aimed at achieving energy savings. These parts must be separated from the GES contract so that it is clear that only the portion of the renewal explicitly designed for this purpose is reimbursed from energy savings. For the sake of completeness, we also state that

even measures leading to relatively low savings can be counted as energy measures, as all energy measures are collectively assessed within the project.

2.5.5 Establishment of pilot projects

In line with the Concept for the Renovation of Buildings with an Emphasis on the Renovation of the Housing Stock of the Ministry of Construction and Public Works of the Slovak Republic, as approved by Resolution of the Government of the Slovak Republic No. 1088 on 8 December 1999, there is a classification of building stock and requirements for renovation policies. The breakdown of residential and non-residential buildings is shown in Table below.

Table 3: Building stock in Slovakia [Source: Konceptcia obnovy fondu budov s dôrazom na bytový fond, MVVP SR/VVÚPS-NOVA, 1999, doplnenie za roky 1998 až 2000 ÚEOS - Komerčia, a.s., Bratislava ²⁷]

Total building stock	To 1950	1951 - 1960	1961 - 1970	1971 - 1980	1981 - 1990	1991 - 2000	Total
	Million m3 of built volume of buildings						
Non-residential buildings	20.95	14.29	22.86	53.33	63.81	34.01	209.25
Residential buildings	44.11	29.52	47.00	88.82	87.51	32.76	329.72
Buildings, halls for production and services	55.96	41.45	64.28	117.00	143.83	58.11	480.63
Total	121.02	85.26	134.14	259.15	295.15	124.88	1019.60

In Slovakia, the majority of the multi-family housing stock has been renovated using grants and support funds, mainly from European Structural and Investment Funds. The primary demand for financing support beyond grant schemes lies therefore at the level of public buildings and local administrations/municipalities. Consequently, we focused our efforts on public buildings and their related stakeholders. A particular incentive for this sector has been the introduction of the Energy Performance Contracting scheme with a standardised

²⁷ Konzept der Erneuerung des Baufonds mit Schwerpunkt auf dem Wohnungsfonds, MVVP SR/VVÚPS-NOVA, 1999, Ergänzung für die Jahre 1998-2000 ÚEOS - Komerčia, a.s., Bratislava

contract template for the public sector, where the debt ceiling obstacle for municipalities has been removed. The team therefore identified substantial potential and targeted stakeholders related to public buildings and privately-owned non-residential buildings, which rely almost entirely on private financing sources.

The project pipeline includes a number of possible projects, and the team has focused on the assessment and development of six of them: two public buildings (a municipal administrative building and a cultural building), two multi-family buildings (including a day care centre and a small private apartment building), one school building and one building for a primary art school.

For three projects (the administrative building, the cultural centre, and the primary art school), energy audits were carried out through certified audit firms. The calculations and proposed measures were reviewed by our team and discussed with the project owners. The energy savings achieved through the implementation of these measures will exceed 50%, which is line with the investment policy guidelines.

The remaining three projects are at a different stage of project preparation, and the team has actively supported project owners with calculations, technical advice, and planning. Below is a brief description of the selected pilot projects.

Administrative building (city hall)

The building, constructed in the late 1970s, consists of seven floors and a heated, partially sunken basement. The floor plan of the building is irregular with a small atrium and a total built-up area of 2144.2 m². The entire building is well maintained but antiquated, remaining in its original condition since its construction. The heat source for the building is a gas boiler. Heat is transferred by means of original sheet metal and cast iron heating elements and heating registers without control valves or thermostatic heads. Selected rooms are cooled by local air conditioning split units. Hot water is produced locally through electric flow and storage heaters. Annual electricity consumption in the building stands at 83.5 MWh/a, and the annual natural gas consumption is 623.6 MWh/a.

Recommended measures for the building structures consist of insulation of the perimeter cladding and roof, as well as replacement of opening structures. Implementation of these measures can yield energy savings of 449.9 MWh/a. Measures for the technical equipment involve a comprehensive reconstruction of the heating system of the entire building and modernisation of the lighting system with an annual energy saving of 74.1 MWh/a.

Specific measures that can be implemented include:

- Insulation of reinforced concrete and walls
- Insulation of basement walls
- Insulation of the flat roof
- Replacement of windows
- Reconstruction of the heat source
- Hydraulic balancing and thermostatisation
- Modernisation of the lighting system
- Implementation of an EMS

The building offers an excellent opportunity for replication, given that similar buildings in similar condition can be found throughout Slovakia.

Municipal cultural centre

The building, constructed in 1986, is of irregular shape with three floors and is still used mainly for cultural and social events. It features a small atrium and houses a cinema operating around five days a week, along with a library open for 50 hours per week. No significant renovation has been carried out since its construction, making the building rather outdated and contributing to its energy-intensive operation. The largest share of energy consumption (94.4%) and associated costs (88.6%) is attributed to heating the entire building. The annual electricity consumption in the building is 36.2 MWh/a, and the annual natural gas consumption stands at 607.6 MWh/a.

Necessary measures are:

- Insulation of walls
- Insulation of the flat roof
- Replacement of windows
- Hydraulic balancing and thermostatisation
- Modernisation of the lighting system
- Implementation of an EMS

The implementation of measures for the building structures is a prerequisite for heat energy savings of 298.8 MWh/a. Further heat savings can be achieved through hydraulic regulation and thermostatisation of the heating system, amounting to 30.9 MWh/a. There is a potential for energy savings in technologies, specifically through the reconstruction of the original lighting, which can yield electricity savings of 12.2 MWh/a.

The building presents a great opportunity for replication, as numerous cultural centres spread around Slovakia are in similar condition.

Residential Building

The structure, constructed in the 1980s, served as an office building until 2016. The current owner plans to renovate and modernise the building and convert it to an apartment building. Total floor area is 649 m². Electricity was used for both the heating system and hot water preparation, with an annual consumption of 78.5 MWh/a.

Possible measures are:

- Thermal insulation of the outer walls and roof
- Installation of new windows
- Implementation of a new heating system with heat pump and photovoltaic panels

The achievable value will be calculated after the project documentation is completed and all measures are defined.

Given its characteristics, the building represents a good opportunity for replication.

Multi-generational residential rental facility

The building, constructed in the 1980s, previously served as a workshop/industrial facility to produce candies, owned by a monastery. The annual electricity consumption in the building was recorded at 350.4 MWh/a.

The goal of the reconstruction is to transform the building into a multi-generational rental housing facility for people with specialised needs and seniors. The current two-storey building has a built-up area of 793 m². A third above-ground floor is to be added to create a residential attic. 28 housing units and one common room on the ground floor are planned.

Potential measures are:

- Definition of an innovative concept for a sustainable energy and heating source (in progress)
- Installation of new windows
- Thermal insulation of walls

The achievable value will be calculated after the project documentation is completed and all measures are defined.

The building offers a promising opportunity for replication.

Primary art school

The building was constructed in the second half of the nineteenth century around 1850. The elementary art school consists of a main building, where classes are taught, and a concert hall used for performances and social events. The buildings are connected by a common wall. The entire main building has a basement, hipped roof, two floors and an attic, which has potential for future use. It houses classrooms, a library, and associated communication, sanitary and technical areas (including a heat source). The concert hall together with its facilities, originally added in the 1950s as a gymnasium, is a one-storey building without a basement, featuring a gable roof with a slight slope.

The annual electricity consumption in the building is 4.0 MWh/a, and the annual natural gas consumption is 126.9 MWh/a.

Necessary measures are:

- Insulation of walls
- Insulation of the flat roof
- Replacement of windows
- Hydraulic balancing and thermostatisation
- Modernisation of the lighting system
- Installation of photovoltaic panels

Implementation of these measures can result in energy savings of 36.2 MWh/a.

In summary, stakeholders are well-informed about the benefits of undertaking an EPC project. They also understand the advantages of performance-based financing under the BEEF model, as it allows municipalities to protect themselves from financial overruns or risks, ensures high visibility towards the public and does not burden the municipal budget. Accountability and transparency are very important for the municipal council. The model is equally appealing to private owners. We have been granted access to preliminary documentation in order to assess potential savings and review/comment on the planned measures.

2.5.6 Market barriers

Drawing on the views and opinions of stakeholders, as well as our observation within the four key groups of stakeholders for this project, we have identified the following main barriers to the EPC implementation.

Barriers on the part of building owners

In Slovakia, residential dwellings are primarily owned by their inhabitants, i.e. the percentage of rented residential space is minimal. According to statistics, almost 90% of real estate property is owned by residents. Traditionally, building owners in Slovakia are rather conservative and cautious about initiating major changes in their buildings. The majority of owners consider any renovation as a highly costly and time-intensive exercise, and they are generally unwilling to start such an undertaking. Our team has observed this perception across all type of building owners.

Most renovations to date have been done through grant financing, thus reducing the financial risk level for building owners completely. In EPC financing, the level of risk in terms of costs, uncertainty of returns and longer payback periods has clearly been seen as a setback to consider such projects.

Barriers in the residential sector:

- Traditionally, owners are ready to accept a buildings' deficiencies for an indefinite time unless major problems arise that require action.
- General low awareness of energy efficiency and its benefits
- Majority of building owners lack the relevant technical and financial knowledge to identify optimal technical solutions, assess investment measures, and deal with financing and project implementation.
- Insufficient spare funds for implementing energy efficiency measures: Usually, building owners face budget restrictions and may need to reassign funds in case of emergencies (for example, forgoing a vacation and dedicating the money for a renovation project).
- Building owners are unfamiliar with the EPC concept and fear any long-term commitment with – from their perspective – unclear cost coverage over an extended period.

- Building owners are partially resistant also due to the fact that not all inhabitants of a building are willing to participate, resulting in the renovation cost being split only among those willing to invest.
- Rise of cost for construction works and materials is seen as an additional major obstacle and a potential financial strain over time.
- Reluctance to undertake, commit to, and manage a lengthy renovation process for the entire building: Usually, there is no dedicated, knowledgeable person to represent all owners and take the lead in the process (dealing with planning, construction, delivery, testing, and monitoring activities) and the coordination of various relevant stakeholders.

Barriers in the public sector:

- Limited capacity and lack of knowledge among public building owners (municipalities, ministries, central and regional government) in designing and implementing viable and bankable EE projects: Often, larger projects may necessitate hiring an external advisory firm to advise owners on the options, the planning and implementation of the project. This process may also require a procurement for the advisory work and additional resources of the beneficiary.
- Need for procurement in construction/renovation projects: This is particularly difficult in the case of non-standardised procedures, such as the mandatory combination of construction and energy efficiency works under one procurement tender, as is the case in Slovakia. The tender process can be lengthy and take one to two years to complete, given the necessary time for project preparation, tendering, offer evaluations and assessment, tender awarding, and potential tender claims and related legal proceedings, which may stall the process for another one to two years.
- Necessity to obtain subsidies/grants for blending financing to cover the cost of deep renovation measures that cannot be refinanced from energy savings
- Limitations/restrictions due to annual budgeting regulations, chronically scarce budgets, difficult and sometimes politically motivated municipal approval processes, competing investment priorities for social infrastructure projects: These factors significantly hinder the commitment and political will required to finance deep renovation measures over long periods (so that a blending of financing can be achieved).

- Lack of understanding and experience in working with ESCOs on EPC projects: This often leads to serious tensions related to the implementation of investment measures, the monitoring and achievement of guaranteed savings and performance indicators over time, the inflationary indexation of services over the years, the replacement and upgrade of infrastructure, etc.

Barriers on the part of ESCOs

- Unwillingness to engage in long-term projects beyond 10-12 years: The reason is the general perception that longer payback periods are difficult to manage. In addition, these projects require more complex documentation to address various risk categories and adjustments of contracts over time due to changing environments, such as rising costs, inflation, performance guarantee issues, etc.
- Rising cost of financing, both for the initial investment-intensive phase and later stages for eventual upgrading and/or replacement of parts, cost of repair works and service management arrangements
- In the public sector, in line with current legislation, non-energy savings-related measures are not considered EPC eligible. Therefore, ESCOs need to organise work under two contracts – one for energy savings measures (EPC contract) and another for non-energy savings measures (all general constructions works, deep refurbishment). This makes the process more complex – from a technical, legal, procurement and economic perspective – and requires more administrative and financial capacity on the side of the ESCO.
- Limited possibilities for forfeiting of contracts, primarily due to the approach of financial institutions to evaluate/assess ESCOs, the methodology for credit rating ESCOs, and problems related to the solvency of ESCOs in the long run: In Slovakia, financial institutions are primarily experienced to work directly with public bodies (municipalities often get a better credit rating than private companies such as ESCOs and therefore better financing conditions).
- Legal restraints related to the treatment of costs for repaying the investment and the maintenance/service components of the EPC project: In Slovakia, both can only be covered through savings related to energy consumption. Such a restrictive approach makes financing for ESCOs more difficult and requires projects with higher energy savings.
- Legal restrictions on the sale of receivables of a maximum of 80% to financial institutions, blocking ESCOs from fully refinancing their investment and using the

funds for new projects: The 20% stake throughout the life cycle of the project increases the overall cost for ESCOs and their financing.

Barriers on the part of financial institutions

- Lack of high investment volumes with long payback periods: There is a great need for investment in the renovation of public buildings in Slovakia, as most of them did not undergo significant upgrades since their construction in the 1970s and 1980s. Therefore, they first require a comprehensive overhaul to enable energy savings through energy efficiency measures. Paying these investments only through energy savings leads to extended payback periods, making the projects not suitable for financing via a BEEF.
- Lack of financing mechanisms for blending financing sources: Due to the fact that many public buildings require thorough renovation first to lower energy consumption before the implementation of energy efficiency measures, blended financing of grants and BEEF funding is beneficial but not yet available. All municipalities are looking into options to identify grants for part of the financing through EU funding or targeted national financing schemes.
- Beneficiaries consider the terms for refinancing and forfeiting EPC contracts too complex, demanding, over securitised, with focus of risk-sharing on the ESCOs. Financial institutions, in contrast, try to protect themselves to the maximum and impose all possible internal (corporate) and national requirements.
- Insufficient in-house technical knowledge: Financial institutions do not yet have enough resources and knowledge to assess and evaluate the technical aspects of EPC projects properly and thoroughly. Particular difficulties arise in calculating performance indicators and forecasted guaranteed savings on an annual basis, as well as verifying these estimates.

Barriers on the part of policy makers

In Slovakia, most barriers were removed by Act No. 321/2014 Coll. on Energy Efficiency, which established the basic system of energy service provision, introduced the role of a competent person for the provision of guaranteed energy services, and defined the content of energy efficiency contracts for the public sector. Additionally, it outlined information obligations for the Slovak Innovation and Energy Agency. Thus, basic political and regulatory barriers to energy services have been largely removed.

However, barriers still persist in the lack of support schemes for public buildings requiring deep renovation, particularly regarding measures that cannot be financed through EPC or similar models. Furthermore, the restrictive treatment of savings related to energy as the only eligible source to repay investments and service/maintenance in the EPC contracting is a barrier that, if eliminated, will allow ESCOs to look at a broader range of projects and elevate the EPC market to be more commercially viable and attractive for all stakeholders.

3. Trends across the implementation

There exist many common obstacles to successful project implementation, which has led to only Poland finding a pilot project. The partners' expertise was in the energy efficiency consulting sector (Econoler in BG, MMP.RO in RO, MMP.SK in SK), or in the energy agencies sector (KAPE in PL, AEA in AT), with the inclusion of a financial institution (NFOSIGW in PL). All countries adopted a similar or even unified approach in their efforts to implement a financial mechanism replicating the LABEEF model. This approach involved various stages, including stakeholder identification, communication, analysis of the legal framework, and subsequent development or replication of investment guidelines and contract templates. Among the participating countries, only Poland has progressed to the point of implementing a forfeiting service supported by fully developed contracts. In contrast, other countries have faced difficulties in locating a suitable pilot project for testing these developed contracts and financial mechanisms. Consequently, they have chosen to delay establishing a forfeiting facility until a solid project pipeline is established.

All partners effectively executed their stakeholder engagement plans; however, there is no visible pattern indicating that the number of stakeholders involved directly correlated with the success of a project. Instead, the national context and the pre-existing interest of selected stakeholders in renovation appear to have played a determinant role. It is worth noting that all partners faced challenges in persuading individuals to embrace a new strategy. On the other hand, Poland's success in implementing the pilot project in the scope of the Priority programme had drastic differences compared to other partners' efforts. Already at the beginning, there were two large organisations responsible for the development of the Priority programme, KAPE (JSC) and NFOSIGW (public financial institution), both having substantial power, capital, and workforce. This ensured robust project implementation as well as support from other public institutions. In contrast to Poland, however, LABEEF in

Latvia proved that this is not the sole factor for project success, as the concept was developed by a first-time fund management company.

While reviewing the national context, all partners discovered minimal differences in market conditions, simplifying the adaptation and development of contracts and guidelines.

In many countries, the energy performance contracting market in the residential sector is not yet fully developed, resulting in challenges when it comes to implementing pilot projects despite having prepared contracts that ready for application. The success of these projects relies heavily on the performance and initiative of local service providers, as well as the willingness of homeowners to pursue renovation projects. Both factors need to be in place to ensure the scheme's effectiveness. One of the reasons discovered during the project was distrust in the renovation from the homeowners' perspective. At the same time, they did not see the significance of guaranteed savings and monitoring during the contract term. In all of the countries, homeowners are not well acquainted with the renovation process, requiring additional support to navigate the market. Although this was not initially envisioned in the project scope, Bulgarian partners responded by creating OSS as a solution. Furthermore, all countries are faced with split incentives issues. This situation arises when apartments are rented out to individuals who cannot or do not want to pay for renovation as the property does not belong to them, and owners are not interested in renovation as the benefits seemingly do not affect them.

Public support for implementing renovation projects is in place in most of the countries, usually in the form of grants. In some cases, the grants offered to the public have inadvertently discouraged the market from doing projects with an ESCO (e.g. Romania, and previously in Bulgaria, not allowing ESCOs to be a part of projects). Also, rising costs have hindered action, especially during periods when energy prices were low and project costs were high, although this trend has changed with the political situation in Ukraine.

Moreover, in certain countries such as Romania, Austria, and Slovakia, market participants tend to perceive newly constructed buildings as more efficient and convenient to implement compared to renovating existing building stock. Unfortunately, this perspective overlooks the potential negative environmental consequences. This lack of awareness is also evident when discussing investment costs, as building owners often fail to recognise the long-term benefits and return on investment that can be realised through renovation. Instead, they view it as a short-term expense that competes with other short-term investments, such as

purchasing new appliances or repairing vehicles (in the case of private individuals), or allocating funds towards road repairs or healthcare (in the case of public bodies).

In neither of the countries is it common to monitor and verify project results in the long term after completion of the project. Stakeholders are reluctant to adopt such measures, as they are not a requirement for getting public support. Consequently, neither party is interested in pushing for such practice due to its perceived complexity and the resulting long-term liability for ESCOs, especially for projects lasting longer than 10 years.

In terms of perception, the market often fails to see the need for renovation, as a large amount of building stock already has some upgrades installed (such as, change of windows, radiators, upgrades of heating systems in AT and SK). Conversely, in Romania, there are already many abandoned apartments due to migration, which has already led to energy demand decrease, and the owners of these apartments are uninterested in upgrading the buildings.

4. Core recommendations for implementing the financing scheme

Examining the partners' experiences across participating countries reveals similar challenges in connection with energy performance contracting in comprehensive building renovation projects and their financing aspects. Furthermore, from the project implementation perspective, it is visible that consortium members also faced similar difficulties across all replicating country partners. While the previous section overviewed market trends, this section summarises project-level insights and recommendations for overcoming these challenges.

At the project level, there were many challenges due to both internal and external factors. Concerning external factors affecting the project, a significant issue raised during the project was the Covid-19 pandemic. This led to fewer face-to-face meetings between project partners and stakeholders, prompting the consortium to find alternative and effective methods of communication and remote collaboration. Project-level expertise was also diverse and might not have been appropriate for such a project, as the project often required not only expertise in stakeholder engagement but also great focus on financial matters and solutions, which was not present in many cases. Furthermore, the goal of replicating the

project in five countries might have been overly ambitious. Focusing on a maximum of three countries could have yielded more effective project results, allowing enough resources to coordinate and monitor each partner's progress.

AT case²⁸:

Tensions between condominium associations (building owners) and property/facility managers often delay the implementation of (deep) renovations, as both sides feel poorly informed about the advantages and processes involved. Apartment owners usually lack the competence to decide on refurbishment projects. The lack of clarity about benefits leads to disagreement in the pre-project phase. Thermal deep renovation is particularly affected, while modernising the heating/cooling system and executing photovoltaic projects face fewer hurdles.

There is a lack of legal certainty in the allocation of costs to tenants, which makes the contracting business model unfeasible. Property managers are also confused by the separation of running and investment costs. Thermal modernisation projects below 20 dwellings in the residential sector are hardly economical for energy service companies, due to the enormous planning effort and the risks associated with financing the construction work according to the position paper of the umbrella organisation of energy service companies (DECA). Decarbonisation measures often only take place in the course of major refurbishments of residential buildings, because the technical, financial, and legal framework conditions are too uncertain. The lack of standardisation and the correspondingly time-consuming preparation, planning, and implementation also contribute to this and deter energy service companies (ESC) from getting involved in the implementation.

According to the expert interviews, with the taxonomy ordinance coming into force, there could be a change in the market. Thus, the long payback time (>20 years) of schemes like ÖBEEF may not be the major issue.

Recommendations:

The exchange with political stakeholders, such as relevant ministries and policy makers, chambers, and guilds, should be continued in order to improve framework conditions,

²⁸ Based on the statement of DECA (the umbrella organisation for Energy Services) and experts' interviews

especially with regard to public advisory services, the adaptation of pertinent legal materials, and increased standardisation.

Below are the main recommendations that were identified in discussions with stakeholders, ESCOs, and experts.

Information in the pre-project phase: Public sector advice and support can assist stakeholders in the decision-making process. This can help overcome hurdles in preparation and planning, and lead to more projects being implemented. Increased availability of assistance programmes (such as the Austrian Green Investment Pioneers Programme in recent years), workshops, and conferences can raise awareness and bring stakeholders together.

Adaptation of relevant legal material: Currently, main rent adjustments can be overturned by courts or arbitration boards, which minimises planning security. This could be remedied by applying a contracting clause, as in the Public Housing Act, to the Tenancy Law Act.

Additional funding programmes: Funding programmes, such as LABEEF (in Austria, the foundation for preparation of ÖBEEF has been established) or ELENA (EU programme providing funding for projects over €30 million), promote project-initiating activities in the field of energy efficiency. However, the offer in Austria is inadequate or not yet fully utilised, because the investment volume of €30 million requires a large pool of properties. Creating a project pool through the association of municipalities with the necessary volume for implementation by a number of project partners could address this gap.

Furthermore, state guarantees²⁹ have to be provided to combat the risks associated with the achievement of energy savings in EPC projects. These include investment risks, risks related to user behaviour, and uncontrollable environmental risks.

Providing subsidy schemes: In order to lower the default risk, state guarantee models have to be provided for ESCO companies. This not only creates jobs and boosts the renovation rate but also helps minimise fines for not reaching climate change goals.

²⁹ State guarantees, in this context, refer to instances when a state assures the fulfilment of liabilities of private debtors, i.e. assumes payment if the private debtor defaults.

BG case

In the case of Bulgaria, deep renovation investments in MFHs are driven by EU grants and national supporting programmes. All of these programmes have been designed with a 100% subsidy intensity for the last 10 years. For example, over €1 billion were disbursed in two tranches under the national programme for the renovation of Bulgarian homes. Another financial package of €0.5 billion is currently earmarked for the same objective, replicating the conditions of previous programmes, i.e. with a 100% grant intensity, under Phase I of the Bulgarian Resilience and Recovery Plan (RRF).

As a result, the deep renovation market in the MFH sector has become extremely distorted, leaving no room for market-based sustainable financial models like the ones developed under the FinEERGo-Dom project. Homeowners prefer to wait for the announcement of the next 100% subsidised EU or national programme rather than embarking on a commercially financed renovation project. While the preference of homeowners to choose 100% free money over 100% bank loans is understandable, it is national policy in allocating financial incentives in this area that falls short. Just 2,000 MFHs out of a stock of 65,000 have been renovated. In such a challenging context, the Bulgarian FinEERGo-Dom team managed to intervene in an effective way and achieved many tangible results. Key recommendations from this experience are outlined below.

Recommendations:

Introducing performance contracting in national strategic documents: The Bulgarian FinEERGo-Dom team successfully introduced performance contracting into the Bulgarian Long-Term Renovation Strategy 2050 (LTRS), as well as into the product portfolio concept of the Bulgarian Decarbonisation Fund. The fund is expected to commence in 2024.

Achieving the above-mentioned results opens the path to any required changes in legislation and the re-design of EU and national deep renovation programmes, if any.

Adapting national legislation: The Bulgarian FinEERGo-Dom team identified barriers in national legislation that prevented performance contracting from being blended with EU/national grants and subsidies, among others. With the support of the Sustainable Energy Development Agency, required changes in legislation have been successfully introduced.

Other changes allowed ESCOs to conduct energy audits for projects that they implement. Changes also permitted contracting parties to decouple the maximum value of performance contracts from the amount of energy saved, as long as the relation between the two is kept

and evident (the limit that the payment should be equal or less than the energy saved was removed, allowing for greater flexibility while still being linked to energy savings).

As a general recommendation, changes in legislation should remove barriers and enable the scalability of sustainable financial models, e.g. FinEERGo-Dom.

Re-designing EU and national grants and subsidies to blend with performance contracting: A key achievement of the Bulgarian FinEERGo-Dom team was the introduction of the possibility for performance contracting to be blended with grants provided by Phase II of the programme for the renovation of MFHs under the Bulgarian Resilience and Recovery Plan. Phase II identified eligible homeowners who could fulfil the requirement for 20% self-participation in the investment for the renovation of their MFH by utilising the performance contracting model.

Although a great progress has been made for the Bulgarian MFH market, there are still some recommendations that should be executed in the mid and long-term: (i) the grant component should decrease to below 50% so that the application of the Public Procurement Act is no longer required, which will accelerate the speed of renovation. (ii) The grant component should be redirected to socially vulnerable homeowners and technical assistance activities instead of supporting capex expenses, leading to public financial resources exerting a higher leverage effect.

Establishing a one-stop shop for deep domain expertise: The application of innovative and integrated models for renovation of buildings, such as FinEERGo-Dom, calls for the efficient and effective orchestration of a great number of activities, e.g. feasibility studies, (public) procurement, performance contracting, and forfating, among others. The Bulgarian FinEERGo-Dom one-stop shop, established under the project, clearly demonstrated the benefits such an entity can bring to sustainable market development. It initiated a fruitful cooperation with three municipalities and the Ministry of Regional Development and Public Works. Hundreds of MFHs are planned for renovation by utilising the outcomes of the FinEERGo-Dom project.

Building a strong network of partners: The Bulgarian FinEERGo-Dom team managed to build many strategic partnerships that were pivotal for the success of the project in Bulgaria, e.g. the Sustainable Energy Development Agency, Ministry of Regional Development and Public Works, Municipalities of Burgas, Gabrovo, and Blagoevgrad, Alliance for Energy

Efficiency, Bulgarian Energy Efficiency and Renewable Energy Sources Fund, and the H2020 projects BeSmart, SHEERenov, SHAREs, among others.

Aligning communication and marketing activities with strategic objectives: In the case of Bulgaria, communication and marketing activities were a horizontal activity that enabled the achievement of FinEERGo-Dom project's strategic objectives (also listed above in the form of recommendations). It is recommended that the level of effort in future replicating EU countries align with the demonstrated commitment in Bulgaria, including: (i) meetings with over 1,200 stakeholders at more than 70 events, (ii) publishing over 450 posts through 4 social media channels, and (iii) producing more than 20 interviews and articles.

PL case

The results and recommendations based on Polish experiences are described in D 5.4 "Recommendations for EPC+ investments on the basis of the Priority Programme implementation".

RO case

Observing the situation of residential buildings in Romania, it has been identified that the development of energy efficiency and supporting systems is key. Here are suggestions for further developing the energy efficiency market in Romania:

- Developing a new architecture of operational programmes 2021–2027 prioritising energy efficiency for sustainable development: Grants should be provided in cases where a financial gap is present and market failure is evident. The development of operational programmes for the next funding period should be supported by the financial sector in order to develop complementary financing mechanisms that can support the ambitious EU targets.
- Improving the national programme for energy efficiency of multi-family residential buildings: Requirements of the programme should be improved by setting higher levels of performance and coordinating the grant level with the estimated performance improvement. This is aimed at increasing the interest and level of engagement of building owners in participating in the building renovation process.
- Supporting the ESCO market development: Both changes in legislation and the promotion of ESCO are required. Efforts are needed to develop and implement simplified ESCO contracts on a pilot basis, using public financing mechanisms;

- Establishing a national EE fund: The Ministry of Energy should investigate the opportunity to set up and design a national energy efficiency fund, aiming to promote innovative financing schemes, the development of the ESCO and energy savings performance contracts, the support for training, pilot, and dissemination programmes.

SK case

As mentioned before, the majority of residential buildings in Slovakia are renovated, but there is room for improvement. In order to push energy saving and energy efficiency projects towards monitoring, as it is foreseen in energy saving contracting, the experts in the project provide these suggestions:

- Build capacity in financial institutions to develop, assess, evaluate, and finance EPC projects.
- Establish programmes for the renovation of buildings owned by the government and municipal entities to ensure adequate and accessible funding.
- Develop financial mechanisms that allow the blending of public, private, and grant financing,
- Further facilitate the EPC mechanism through awareness activities, improvements in the regulatory framework, and engagement at all levels with the various stakeholders at all levels.
- Work towards optimising the length of public procurement processes.

4.1 Key recommendations

To streamline the recommendations, they have been grouped by sector and prioritised. The most important thing is to enhance awareness and educate citizens and policy makers about the benefits of dEEp renovations. Informed citizens can understand their needs and stimulate demand when policy makers legislate for long-term policies that promote dEEp renovation. This entails the elimination of carbon incentives and subsidies, the development of tax incentives for corporations, especially SMEs, and the requirement of better data collection and enforcement/protection for ensuring results.

4.1.1 Awareness and education

- Training programmes targeting construction workers and project developers must be implemented with the objective of enhancing their understanding of comprehensive building renovations.

- Events, workshops, and mutual learning activities must be organised for housing managers and apartment owners to initiate discussions about renovation and its benefits. These forums should provide a platform for comparing and analysing different kinds of solutions in a joint framework.
- Increased coordinated advocacy efforts from civil society or interested stakeholders must be fostered to ensure buy-in from national/local, and municipal decision-makers.
- In case there are existing market barriers in policy and regulation for implementing comprehensive building renovation projects with EPC, sufficient time must be dedicated before implementing a financing scheme. The time should be used to identify key stakeholders (policymakers, regulatory bodies, and decision-makers) and inform them about EPC as a solution and potential complexities that may arise from such scheme implementation. Stakeholders should only be approached once there is sufficient evidence of the effectiveness and possible benefits of the scheme, and the necessary steps to create an effective market are clear.

4.1.2 Policy and regulation

- Establish targeted financial support to facilitate self-sustainable and efficient market development.
 - Design financial support programmes so that they do not overlap or compete with each other.
 - Ensure synergy in public support programmes, for example, combining subsidy and public guarantee programmes while providing loans for ESCOs.
 - Cut down fossil fuel subsidies and direct them towards energy efficiency projects.
- Ensure support is comprehensive and can be blended with private finance initiatives.
 - Allow Energy Performance Contracting projects to be incorporated into these programmes.
- Ensure support is geared towards fostering market growth by demonstrating the market's potential and reserving significant support for vulnerable households.
 - Avoid extensive grant programmes for all and instead design programmes that offer substantial support for vulnerable households and projects with high potential for energy savings.

- Implement continuous measurement and verification processes after project implementation to ensure long-term energy savings.
- Create incentives for individuals and businesses to undertake extensive building renovation projects rather than individual energy efficiency measures.
- Encourage the development of the Energy Service Company market.
- Decrease bureaucratic obstacles for smaller projects
 - Remove the requirement for public tenders for projects falling below a certain threshold.
 - Reduce the number of votes required to approve renovation projects.

4.1.3 Financial mechanisms

- Consider replicating financing models that were effective in similar contexts, such as LABEEF, which proved successful despite its small size and difficult political situation, to enhance the likelihood of success.
- When developing a new financial mechanism, cultivate strategic partnerships and assemble a team of subject-matter experts to develop market-based instruments with appropriate interest rates, ensuring alignment with prevailing market dynamics.
 - Collaborate closely with Energy Service Company (ESCO) entities during the product design phase to align project requirements with the criteria of financial institutions when implementing projects under Energy Performance Contracts (EPC).
- Prioritise the establishment of robust, traceable, and long-term impact assessments for investments to cater to the interests of environmentally conscious investors.
- Ensure that for energy performance contracting, there is a sufficient term for investment, as the payback period is longer (20+ years) for comprehensive building renovation projects.

4.1.4 Technical assistance and support

- Develop an OSS that specialises in different renovation solutions and support programmes, guiding stakeholders through the whole renovation process, starting from project initiation.
- In instances where the market fails to demonstrate adequate incentive for the development of an OSS, it becomes imperative for municipalities to

assume a proactive role in both the development and promotion of such initiatives and help move projects towards implementation (a great example initiative in Spain is Poblado Dirigido de Orcasitas).

- Utilise support programmes like ELENA (European Local ENergy Assistance) in the local context to incentivise the market-

4.1.5 Monitoring and evaluation

- Monitoring and verification must be based on international standards to ensure alignment.

5. Conclusions

The project faced challenges due to internal and external factors, including the Covid-19 pandemic, bureaucracy at the authority and partner levels, and delays in developing the Priority Programme. This led to rushed deliverables and different approaches to overcome obstacles. The expertise needed on the project level required strong sectoral know-how, which might have been insufficient for such a complex initiative.

At the market level, drastic construction price increases led stakeholders to postpone renovation works due to high project costs. The war between Russia and Ukraine shifted the focus of stakeholders and policy makers from planning long-term energy efficiency toward short-term initiatives aimed at decreasing gas imports from Russia. Tensions between condominium associations and property/facility managers often delayed the implementation of deep renovation projects, as both sides feel inadequately informed about the advantages and processes involved.

Despite the enormous potential for deep building rehabilitation in the market, many of the same constraints exist across Europe and have kept finance tools designed to grow the energy performance contracting market from being fully utilised. While such financing initiatives may enhance the market, we believe that a European-centric approach, with either one vehicle for many nations or, at least, a singular focus on dEEp renovations in one or multiple “lock” steps, may be more appropriate.

Although there is a broad consensus that energy consumption should be reduced (the first principle of energy efficiency), market activities such as solar panel installations (e.g. PV) and new construction are expanding faster than the renovation of existing building stock. This

could be due to lobbying efforts and end-user perceptions; for example, solar panels quickly pay for themselves, are visible, and are considered green, whereas energy efficiency measures may not enjoy the same level of visibility.

The first steps to address the low renovation rates is to formulate adequate policies. Increasing coordinated advocacy from civil society or directly approaching concerned stakeholders is necessary. In parallel, a dense programme of mutual learning activities for housing managers and apartment owners must be executed. Support should be provided to identify key stakeholders who need to be informed about EPC+ as a solution, along with clarifications on complexities that may arise from such schemes. Information can be simplified for the final beneficiary, who may not need an understanding of technical details, much like driving a car without the need to know how a catalytic converter works. Furthermore, authorities must implement training programmes targeting construction workers and project developers, and organise events and workshops across the value chain.

Current policies support the implementation of renovation projects via grants, but in most cases, these grants discourage stakeholders from doing dEEp projects or creating a sustainable market. Further, ESCOs in particular are not interested in complex renovations due to increased risks and reduced returns. Rising costs also act as a deterrent, and building owners often fail to recognise both short-term benefits (increased property values), and long-term advantages related to safety, health, comfort, and the potential return on investment achievable through a dEEp renovation.

It must be acknowledged that a financial mechanism such as EPC+ (PLUS) is disruptive to current market processes, necessitating a paradigm shift towards transparent, long-term, assured solutions. Failure to do so may lead to what occurred in Poland, where intra-agency competition became a problem. This type of solution also needs the alignment of objectives of all stakeholders, which is difficult to achieve because each actor wants to maximise profit, minimise expenses and risks, and reduce workload, each with their distinct interests.

As a result, existing laws and regulations are suffocating the energy efficiency sector by not allowing or failing to incentivise private market efforts to participate. Policy and regulation should establish targeted financial support to facilitate self-sustainable and efficient market development, design financial support programmes so that they do not overlap or compete with each other, and allow Energy Performance Contracting Plus (EPC+) projects to be incorporated into these programmes.

As it stands, the financial sector has little incentive to develop complementary financing mechanisms that can support ambitious EU targets. Authorities in different countries should coordinate their operational programmes for the next funding period, aligning them with the National Programme for Energy Efficiency of Multi-family Residential Buildings. The aim is to support the market development of dEEp renovations and establish a national energy efficiency fund with private partnerships, run under private sector rules but with full transparency.

Dealing with stakeholders in such initiatives often reveals a general lack of understanding regarding the scope and benefits of comprehensive building restoration. Most people are eager to pursue easily attainable goals, the so-called low-hanging fruits, while neglecting difficult-to-implement alternatives that require more effort. Additional investments, according to stakeholders, are unnecessary because some level of energy efficiency has already been achieved.

Reluctance to make further investments is due to the lack of legal certainty in the allocation of costs to tenants, making the contracting business model difficult unless it is on-bill. Property managers are confused by the separation of running and investment costs, which deters Energy Service Companies (ESCO) from getting involved in the implementation. It should be clear that a dEEp renovation with guarantees requires an upfront investment to allow the service company to deliver a guaranteed long-term service.

To address this challenge, technical assistance and support should focus on developing one-stop shops (OSS) offering integrated home renovation services. These OSS entities specialises in dEEp renovation solutions and support programmes, guiding stakeholders through the entire renovation process. Municipalities should assume a proactive role in both the development and promotion of OSS initiatives, and support programmes like ELENA (European Local ENergy Assistance) in local contexts to incentivise the market.

Recommendations to tackle homeowners' concerns include providing information in the pre-project phase, adapting relevant legal material, introducing additional funding programmes tied to long-term results, establishing state guarantees to mitigate risks associated with energy savings in EPC projects, and implementing subsidy schemes for energy service provider companies. These recommendations aim to improve framework conditions, promote public advisory services, and standardise the process for energy service companies.

Stakeholders are reluctant to monitor and verify project results in the long term after completion, as it creates a seemingly more complex structure and results in long-term liability for the service provider. Again, ESCOs do not give guarantees that match the life of investments or assets. Many market participants fail to see the need for renovation due to already existing upgrades of buildings or abandoned apartments.

Due to their success in the public sector and a higher sense of security in terms of payment risk and shorter terms, private sector initiatives, such as energy performance contracting providers, frequently hesitate to enter the residential market. In the private sector, these entities would need to increase the duration of contracts to 20 years or more (thus offering a savings guarantee for 20 years). This longer commitment would be compensated with a larger mark-up owing to potential risks, which authorities are unwilling to accept. One option would be to offer tax breaks to businesses based on verified savings over the life of the contracts.

In summary, while the need for dEEp renovation and financing instruments such as LABEEF is clear, renovation rates will not increase substantially until a paradigm shift occurs. Currently, inconsistent and sometimes competing policies and regulations result in an underdeveloped market for energy efficiency contracting in residential buildings with no incentives for development and scalability.

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