

FinEERGo-Dom

Final Report



FinEERGo-Dom
GREY PAST 2 GREEN FUTURE

2019-2023



Executive Summary

The FinEERGo-Dom project, a visionary initiative under the European Union's Horizon 2020 programme, embarked on a transformative journey to revolutionise building renovations across Europe. The mission of the project was to adapt and implement the innovative Latvian Building Energy Efficiency Facility (LABEEF) model in five EU countries – Poland, Austria, Romania, Slovakia, and Bulgaria. The essence of the project was in its goal to facilitate comprehensive or “dEEp” renovations in the buildings sector by leveraging a performance contracting model that guaranteed savings and harnessed the capabilities of energy service companies (ESCOs).

At the heart of the FinEERGo-Dom project was an innovative financial model that fundamentally altered the renovation landscape. By adopting the energy performance contracting (EPC) approach, the project eliminated the need for building owners to invest upfront capital. This model not only made renovation projects immediately financially viable, but also enhanced the liquidity of ESCOs, thus enabling them to invest more robustly in deep renovation projects. A notable feature of the project was the introduction of standardised forfaiting services, a strategic move to accelerate investments in the sector.

The project strategy included the establishment of one-stop shops, or hubs, and energy advisory services modeled on Ēkubirojs concept based in Latvia. These hubs served as a comprehensive resource for residents and market operators by guiding them through the intricate journey of building renovations. Adding to the project's innovative streak was the SUNShINE platform, an online solution designed to foster transparency and collaboration among a diverse set of stakeholders, including ESCOs, investors, banks, and homeowners.

However, the journey was not without its challenges. Each country presented a unique landscape with its own specific hurdles:

- In Poland, the project team navigated through confidence issues, complex processes, and funding challenges to develop the Priority Programme for energy efficiency in multifamily and public buildings.
- Bulgaria focused on capacity building among homeowners and municipalities, which led to the establishment of a one-stop shop and integration of the ESCO model in strategic supporting programmes such as the Bulgarian Resilience and Recovery Facility.
- Austria's path was fraught with legal, regulatory, and market complexities, yet strides were made in adapting contracts and guidelines to local contexts.

- Slovakia stood out for its successful replication of the LABEEF model, with an official Maastricht compliant EPC template for public sector buildings, thereby showcasing an exemplary overcoming of legislative and financial barriers.
- Romania, despite not confirming a pilot project, made significant progress in legal assessments and adaptation of LABEEF contracts to Romanian legislation.

The FinEERGo-Dom experience offered several key lessons and recommendations:

- Tailoring approaches to each country's specific context and legal framework is vital.
- Standardising EPCs and clarifying energy savings settlement rules are crucial for the widespread adoption of the ESCO model.
- Overcoming market barriers and stakeholder reluctance necessitates robust capacity building, advocacy, and streamlined information dissemination.
- Developing one-stop shops and alignment of EU and national programmes with countries' energy efficiency goals can significantly bolster market development.
- Financial mechanisms must be innovative, flexible, and responsive to the unique challenges of the energy efficiency market.

In essence, the FinEERGo-Dom project illuminated the path forward for energy efficiency renovations in Europe. It showcased the potential and benefits of the LABEEF model in diverse European settings while also highlighting the need for market reorientation, policy alignment, and comprehensive stakeholder education. The project stands as a testament to the transformative power of collaborative, innovative approaches in the realm of sustainable building renovations.

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Introduction

History

Today, Eastern Europe faces an unavoidable process; its multifamily apartment building stock is deteriorating, but apartment owners lack sufficient resources and know-how to address the issue. Almost all multifamily apartment buildings currently occupied in Eastern Europe were built during the Soviet era. In the 1990s, most of these apartments were privatised, but the new owners lacked (and many still lack) the financial resources and management skills to properly maintain the buildings. Consequently, the conditions of the multifamily building stock built during the Soviet era, when energy was free, remain unchanged. In other words, these buildings were designed for durability but not for energy efficiency. The situation of these buildings has gradually worsened, posing a threat to their inhabitants. There are over 26 million households living in multifamily houses (MFHs) and single-family houses (SFHs).

In 2014, Funding for Future (F3), a Dutch company, created the Latvian Building Energy Efficiency Facility (LABEEF) to scale up deep renovations of residential and public buildings in Eastern Europe.

It identified major barriers to large-scale investments in building renovations, as follows:

- High transaction costs;
- Lack of systematisation in procedures;
- Lack of standardisation in documentation, processes, and measures.

In response, LABEEF implemented the necessary legal documentation and refinanced six existing deep renovation projects, initially funded by private entities (ESCOs and homeowners), and provided the necessary co-financing. This approach freed the cash flows of ESCOs to enable them to further invest. Simultaneously, partner organisations structured demand through an online platform called SUNSHINE, which captures core information concerning building characteristics, legal and technical documentation, project design and costs, contract terms, as well as project implementation and monitoring.

FinEERGo-Dom

The goal of the FinEERGo-Dom project was to replicate LABEEF's successful implementation in five EU countries: Poland, Austria, Romania, Slovakia, and Bulgaria. Project partners aimed to refine and replicate the LABEEF financial

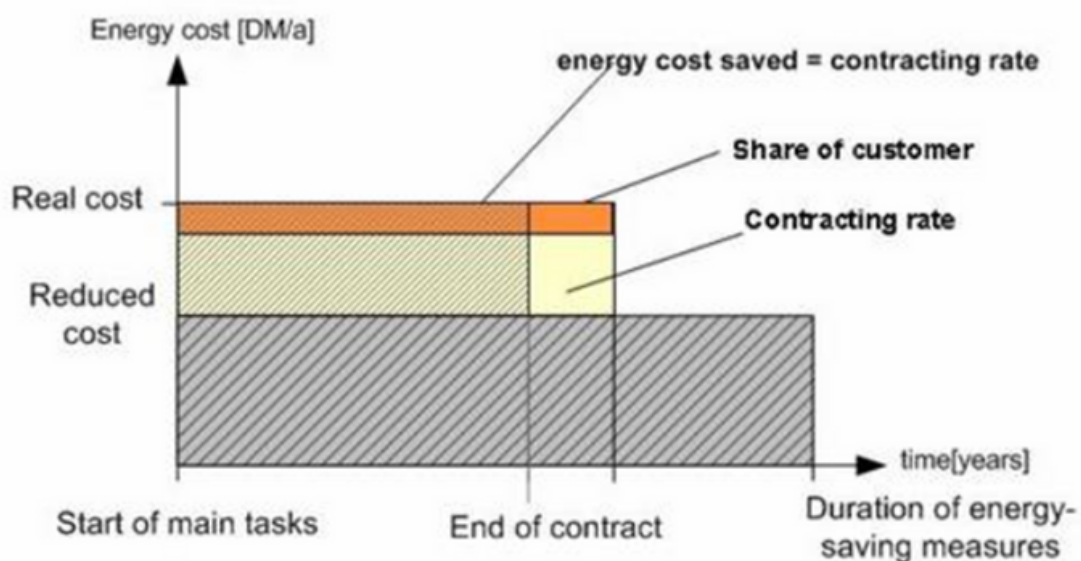
scheme to unlock deep renovations at scale in the buildings sector. The core of the project was to establish a pipeline of renovation projects based on the EPC model with guaranteed savings and to be carried out in collaboration with ESCOs using the LABEEF renovation energy performance contract systems (EPC & EPC plus).

Energy Performance Contracting

The EU energy policy recognises EPC as a crucial and effective method for meeting its ambitious goals to reduce carbon emissions. According to the Energy Efficiency Directive, EPC is a contractual agreement in which the client and the provider of energy efficiency improvement measures agree on specific terms. These terms ensure that the provider's work, whether supplying services or implementing measures, is compensated based on the agreed upon level of energy efficiency improvement or other criteria like financial savings. This agreement is verified and monitored throughout the duration of the contract.

One of the primary benefits of EPC, compared to standard work contracts, is that the client pays for the actual energy and/or cost savings achieved (refer to the figure below) rather than for the equipment itself. Additionally, the EPC provider, often an ESCO, combines various skills that would typically be sourced individually, including designing and executing energy and/or cost saving measures, managing energy, and identifying the most appropriate financing options.

Figure 1: EPC Financial Arrangement



Source: Berliner Energieagentur GmbH

Advantages

The FinEERGo-Dom concept is founded on three main pillars. Firstly, utilising the EPC model removes the need for upfront capital from building owners, making renovation projects cash flow positive from day one. Additionally, it envisions providing ESCOs with standardised forfaiting services to enhance their liquidity and enable more investments in deep renovation projects. Secondly, leveraging the experience of the Latvian one-stop shop (OSS) Ēkubirojs, it supports residents and market operators throughout their renovation journeys. Thirdly, offering the online SUNSHINE platform ensures transparency and alignment among all stakeholders such as ESCOs, investors, banks, and homeowners.

Innovative Financial Model

Traditionally, EPCs optimise energy systems by contractually guaranteeing energy savings over a set period. Annual energy cost savings are used to refinance the upfront investment and maintenance costs typically borne by the ESCO. Ideally, building owners see an increase in property value, contractors successfully refinance the initial investment, and tenants benefit from lower energy costs.

With FinEERGo-Dom's EPC plus, renovations include approximately an additional 25% investment covering civil works such as improving accessibility, restoring common areas and surroundings, and investing in renewables. As a result:

- The building's lifespan is extended and maintenance costs are reduced, thus lowering environmental impacts.
- The building owner experiences a significant property value increase (20–30%).
- The contractor successfully refinances the initial investment.
- Residents enjoy increased comfort, an improved indoor environment, and lower energy costs.

One-Stop Shop

The role of Ēkubirojs was crucial in facilitating the creation of financial instruments promoted by the FinEERGo-Dom project. The experience gained thereof in creating LABEEF coupled with non-governmental approaches and methods provided a unique knowledge base for replicating the LABEEF model.

Direct interaction with residents in Latvia informed the development of mechanisms centred on residents and homeowners. This focus helped prioritise individual benefits and helped properly guide the project. The operation of Ēkubirojs as an OSS enriched this strategy by fostering more direct engagement with residents and housing associations.

Project implementation in Latvia revealed existing market barriers and biases among stakeholders. This insight enabled the creation of a stakeholder engagement strategy to address prejudices and identify potential solutions. This approach intensified interest in the EPC plus concept across different sectors.

The SUNShINE Platform

The SUNShINE Platform was designed to support all phases of an EPC project. It involves a range of stakeholders in various project phases: Planning, executing the renovation, and maintaining and monitoring the renovated building. The platform serves as a collaborative space for such stakeholders.

The benefits of the platform include:

- Facilitating collaboration between registered organisations (building owners, ESCOs, banks, maintenance companies, auditors, etc.) for improved communication.
- Providing residents with a centralised access point to service providers.
- Collecting building and project data for relevant statistical analysis.
- Reducing administrative costs (especially for ESCOs) by centralising information and simplifying communication during projects.

Figure 2: SUNShINE Platform Stakeholders



5

stories from
countries



Five Stories

Each replicating country in the FinEERGo-Dom project embarked on a unique journey culminating in distinct stories from Poland, Bulgaria, Austria, Slovakia, and Romania. This section outlines reflections on their experiences and achievements.

1

Poland

The FinEERGo-Dom story in Poland involves the National Environmental Protection and Water Management Fund (NFOSiGW) and the Polish National Energy Conservation Agency (KAPE). Supported by KAPE and partners, NFOSiGW aimed to replicate the financing systems and procedures developed for the private and public sectors under LABEEF.

The Priority Programme

A key outcome of FinEERGo-Dom in Poland is the Priority Programme (PP) established by NFOSiGW. Branded as “Renovation with guaranteed savings – EPC Plus,” its main goal is to enhance air quality and reduce greenhouse gas emissions through optimised energy efficiency investments in multifamily residential and public buildings. The PP, based on EPC, optionally includes additional investments (EPC plus) to improve safety, comfort, and renewables in buildings.

The PP was divided into two parts: The first pilot call for proposals had a budget of 10 million PLN (2.2 million EUR) for multifamily buildings, and the second call, extending beyond FinEERGo-Dom’s scope to include public buildings, had a budget of 100 million PLN (22.8 million EUR). The entire PP is financed by NFOSiGW from the Modernisation Fund.

Figure 3: Scope of the PP



Barriers Encountered

The work on the NFOSiGW PP design also entailed an analysis of barriers to the development of the ESCO market in Poland to date, which included the following:

- Confidence issues: This represents a lack of confidence among building owners and potential ESCOs in the EPC formula.
- Process complexity: Indicates the complexity of the process that often involves lengthy and complicated negotiations requiring legal assistance to define expected energy savings levels and the mechanisms for rewarding achievements or addressing failures.
- Owner/manager willingness: Highlights the reluctance of building owners or managers to engage in thermo-modernisation investments often due to the disturbance they cause to residents' daily routines and a lack of knowledge about potential energy savings, available technical solutions, and funding sources.
- Funding difficulties: Points to the difficulties in mobilising building owner contributions to co-financing investments that are necessary to complement the financial input from the ESCO.

The Concept

The FinEERGo-Dom mechanism and the creation of standardised project contract templates, such as the EPC, were aimed at streamlining the cooperation process for involved parties. This approach simplified the negotiation of terms, ensuring a fair balance of costs and benefits between building owners and the ESCOs. It also enabled building owners to access professional energy consulting, choose the best technical solutions during the investment phase, and implement effective organisational strategies during the building operational phase. Crucially, it facilitated the verification of anticipated energy and heat savings.

A key innovation in the NFOSiGW PP was the trial of an EPC formula that incorporated a forfeiting mechanism. This mechanism involves an external financial institution purchasing a portion of the ESCO's receivables from the building owner, thus providing the ESCO with renewed financial liquidity. This financial strategy was expected to enable the ESCO to undertake additional thermo-modernisation projects.

The first pilot stage of the call for proposals was dedicated to owners and managers of multifamily buildings. Its beneficiaries included housing associations and cooperatives, local government units owning multifamily buildings, and commercial law companies wholly owned by local governments and established to perform specific tasks as indicated in existing acts.

The subsidy programme was structured to offer varying subsidy levels (10%, 20%, or 30%) depending on the standard of improvements implemented and the achievement of a certain level of final energy reduction. Additionally, the programme required a reduction in final energy consumption of at least 30% compared to the pre-retrofit state. It also stipulated that final building energy demand for heating, ventilation, and hot water after retrofitting should not exceed 85 kWh/(m²*year).

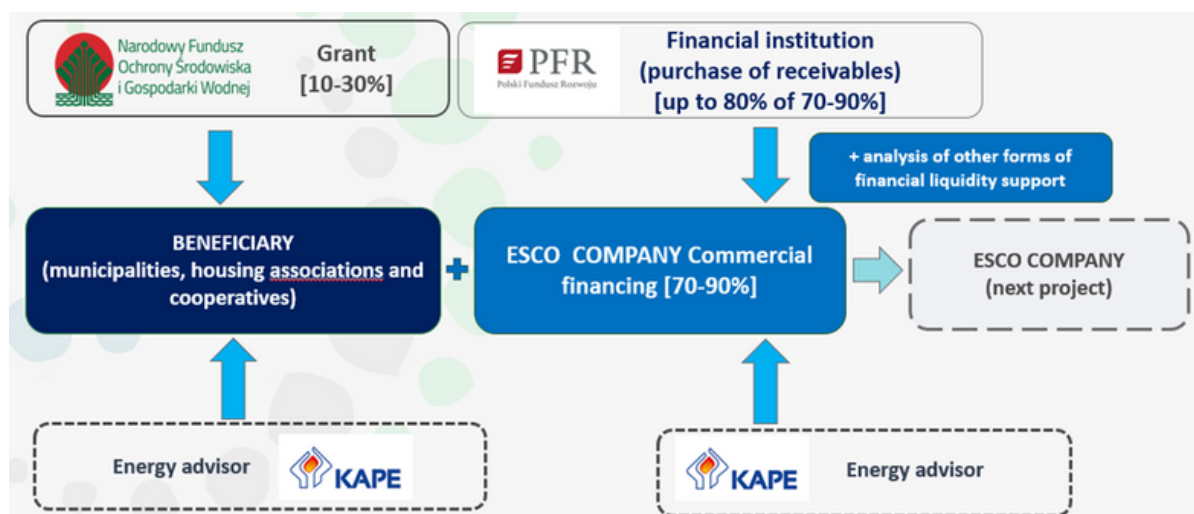
Thermo-modernisation works were to be carried out in accordance with the Technical Guidelines and based on the EPC contract signed between the building owner or manager and the ESCO, in line with the model EPC contract template annexed to the PP. The ESCO was required to commit to achieving guaranteed energy savings and to cover all costs related to fulfilling the contract. The building owner's responsibility was to compensate the ESCO with payments made in installments upon completion of the investment and verification of tangible and environmental project benefits. These benefits were to be assessed based on specific energy and environmental benchmarks over at least one heating season.

By adhering to the NFOSiGW PP, the ESCO ensured that the building owner achieved the final energy consumption target level set out in the guaranteed savings agreement.

The completion of the project and installation of the required energy management equipment, as detailed in the "Material and Financial Schedule of Investment" and confirmed by the final acceptance certificate, signified the realisation of the investment's tangible benefits. The authorisation for the building owner to receive the NFOSiGW subsidy, indicative of the investment's energy efficiency success (the environmental benefit), was granted following an ex-post energy audit that complied with NFOSiGW's framework.

The payment to the ESCO was contingent on the realisation of energy savings under the EPC. If the energy savings fell short of the guaranteed level, the ESCO faced penalties calculated as the unit price of energy times the shortfall in savings. Conversely, if the energy savings exceeded expectations, the surplus savings – determined by the unit price of energy times the excess amount saved during the billing cycle – were shared between the building owner/manager and the ESCO.

Figure 4: PP Structure



Implementation

Pre-Application Phase

Private owners: During this phase, three private entities – housing associations (HAs) – showed interest in the pilot:

- HA “Pragnienie” in Zyrardow, with planned implementation in 2023.
- HA “Jedność” in Ulnowo, also planned for 2023.
- HA “Wspólnota” in Baloszyce, targeted for 2024.

Despite conducting feasibility studies, ESCOs were hesitant to commit to the projects due to the perceived risks and lack of control over homeowners’ energy saving behaviours. Discussions with the HAs eventually stalled as HAs opted for simpler programmes with higher grant subsidies.

Public owners: The following two public entities positively were evaluated in the pre-application phase:

- Polczyn Municipal Company administering the housing stock of Polczyn-Zdroj Municipality, with planned implementation in 2024.
- The Municipality of Gdańsk represented by the local government budget unit Gdańsk Properties, also slated for 2024.

Both entities successfully prepared and executed ESCO selection procedures.

Application Phase

Two applications were submitted to NFOSiGW under the PP:

- BALTCAP ESCO was awarded a tender to conduct construction works and deep energy renovations of two municipal residential buildings in Połczyn-Zdrój. The fund allocated 1.28 million PLN (0.285 million EUR) for project implementation.
- For Gdańskie Nieruchomości, the ESCO offer was rejected by the municipality due to financial planning reasons.

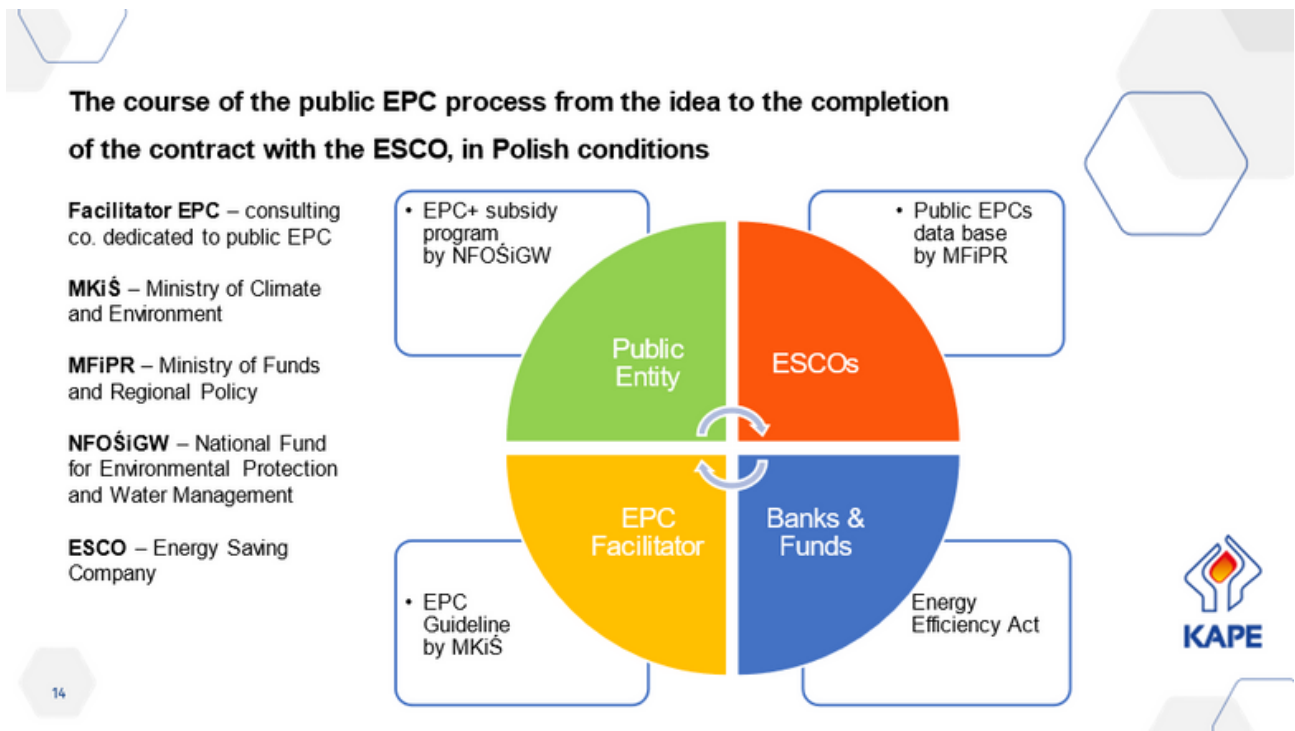
Lessons Learned

One of the primary lessons learned is the EPC model’s relevance for public buildings given the existence of an efficient programme for multifamily buildings supported by the Thermo-Modernisation and Renovation Fund. Moreover, the EPC model assists public authorities in fulfilling their energy efficiency obligations as outlined in the Energy Efficiency Act, thus allowing for the rational allocation of public funds and reductions in energy expenditures. Additionally, rising local community expectations for emission reductions further motivate public authorities to adopt the EPC model.

The EPC plus pilot incorporated an energy advisor support module. For public EPC projects, the advisor’s broad expertise is crucial and should ideally be employed directly by the public entity. The success of multi-year, multimillion PLN EPC projects largely depends on the advisor’s experience and effectiveness. Public entities can partially cover consultancy costs through the European Local Energy Assistance (ELENA) mechanism and are also required to contract an advisor to obtain energy efficiency certificates (white certificates).

While standardising EPCs is essential for popularising the ESCO formula, it is critically important to have a clear and uniform approach to settling energy saving targets in individual projects. The key document for implementing EPC investments under the NFOSiGW PP EPC plus is the “Accessibility Standards” specifying the method for determining energy savings for different project scopes, potentially serving as a standard appendix to the EPC contract.

Figure 5: KAPE Energy Advisory Process



2

Bulgaria

The Bulgarian story of FinEERGo-Dom, led by Econoler and a robust ecosystem of partners including public authorities, financial service providers, the Bulgarian ESCO association (Alliance for Energy Efficiency), Bulgarian BeSmart, SHARES, SHEERenov H2020 project teams, and others, showcases a unique journey in integrating the LABEEF model through a one-stop shop (OSS) format.

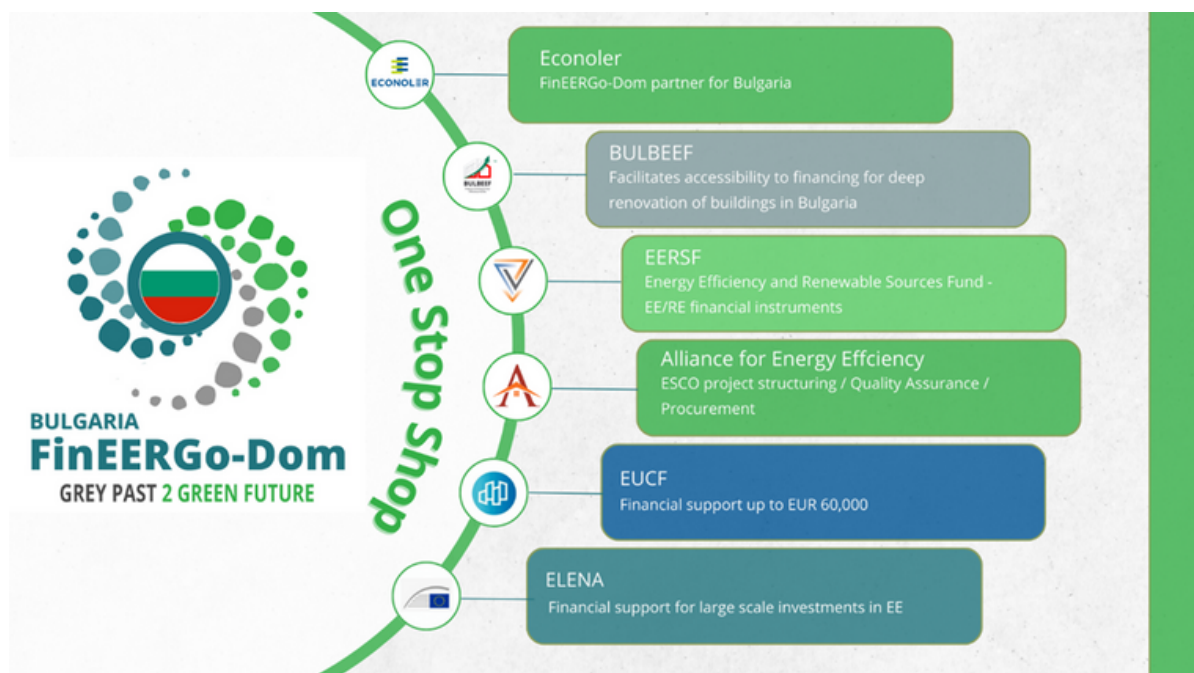
The Bulgarian FinEERGo-Dom One-Stop Shop

In Bulgaria, the OSS was conceived as an effective response to stimulated demand for deep renovation services based on the ESCO model, drawing from the activities conducted under the FinEERGo-Dom project. The Bulgarian team identified a key bottleneck: The lack of capacity among homeowners and municipalities to structure and procure ESCO projects under the Resilience and Recovery Facility (RRF) and upcoming national building renovation initiatives.

Utilising strategic partnerships formed during the project, the Bulgarian FinEERGo-Dom OSS was established, offering a range of technical assistance services:

- Econoler: Provided various tools and know-how developed under FinEERGo-Dom, including contract sets (e.g. EPC plus, Forfaiting, Maintenance contracts), marketing materials to showcase the value proposition for multifamily building homeowners, studies and results from Latvian pilots, access to the SUNSHINE platform, and more.
- Energy Efficiency and Renewable Sources Fund (EERSF): Offered bridge financing, forfaiting services, and financial due diligence.
- Alliance for Energy Efficiency (AEE): Conducted feasibility studies, quality assurance, measurement and verification services, dispute resolution, and helped in project structuring/pooling.
- EU City Facility (EUCF): Provided technical assistance of up to 60,000 EUR.
- European Local Energy Assistance (ELENA): Offered technical assistance of up to 3 million EUR.
- Bulgarian Building Energy Efficiency Facility (BULBEEF): A part of the FinEERGo-Dom consortium, BULBEEF was established by Funding For Future (F3) to manage privately financed Building Energy Efficiency Facilities (BEEFs), facilitating access to long-term financing for energy efficiency deep renovations in social and multifamily dwellings as well as public buildings. BULBEEF provided forfaiting services, among others.

Figure 6: The Bulgarian FinEERGo-Dom One-Stop Shop



The Context

The specifics of the Bulgarian context were examined based on FinEERGo-Dom project requirements for replication and implementation. Some major advantages and disadvantages that worked against or in favour of the implementation process in Bulgaria were identified:

A list of key advantages working in favour of the FinEERGo-Dom implementation process in Bulgaria:

- 2,000 multifamily buildings had already been renovated under two programmes managed by the government, providing plenty of good examples on the benefits of energy efficiency projects.
- The Bulgarian EERSF had already developed a stable, albeit small, ESCO market, a key ingredient of the FinEERGo-Dom model. During the FinEERGo-Dom implementation period, EERSF was a rich source of knowledge and accumulated experience in reference to EPC.
- ESCO legislation and the regulatory framework had already been in place.

A list of key disadvantages working against the FinEERGo-Dom implementation process in Bulgaria:

- Energy efficiency market demand had been predominantly driven by grants. Especially in the MFH and public sectors, grant intensity was at 100%, leaving no room for market-oriented models like FinEERGo-Dom and/or other types of financial instruments and solutions.

- ESCO legislation and the regulatory framework still posed significant barriers preventing the FinEERGo-Dom model from being widely adopted.
- A caretaker government was in charge most of the time during FinEERGo-Dom project implementation. As a result, just short-term issues and policies were addressed at that time. Strategic actions required to unlock integrated models such as the FinEERGo-Dom were postponed until a regular government was elected.

The Strategy

Considering Bulgarian specifics, i.e. the energy efficiency market being strongly dependent on EU grants and national budget subsidies, the Bulgarian FinEERGo-Dom team decided to adopt a top-down strategy to popularise and integrate 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 that direction led to a number of key achievements:

- The ESCO legislation was changed to allow blending of EPC with EU grants and subsidies, among other improvements.
- The ESCO model was introduced and recognised as an effective approach for 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 EUR in subsidies for homeowners in MFHs. Homeowners have the option to declare they want to take advantage of a performance contracting arrangement. In that case, an ESCO can provide the required contribution of 20% from the renovation investment cost for them.
- The ESCO approach will be strongly supported by the Bulgarian Decarbonisation Fund planned to start in the end of 2023/beginning of 2024. A close cooperation between Econoler and fund designers led to programming a segment dedicated to MFHs based on the FinEERGo-Dom philosophy, i.e. providing opportunities for ESCOs to finance and sell receivables from their renovation projects.



Implementation

The main idea behind the OSS was to provide a portfolio of services to interested parties, e.g. municipalities and homeowners, which would lead them through their renovation journeys. As Ēkubirojs's experience demonstrates, there are a lot of steps that have to be completed from the expression of initial interest to generation of energy savings, leaving many opportunities for errors and failures. To address that challenge, the Bulgarian FinEERGo-Dom OSS services encompass a variety of activities that can be tuned 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 measure design and implementation;
- Feasibility studies;
- Procurement advisory services;
- Quality assurance schemes and methodologies;
- Measurement and verification;
- Refinancing services;
- Others.

Some of the major building blocks of the Bulgarian FinEERGo-Dom OSS are presented in the figure below. They can be arranged in different combinations to cater to the needs of specific beneficiaries and enable all involved stakeholders to follow a pre-defined and fool proof renovation journey.

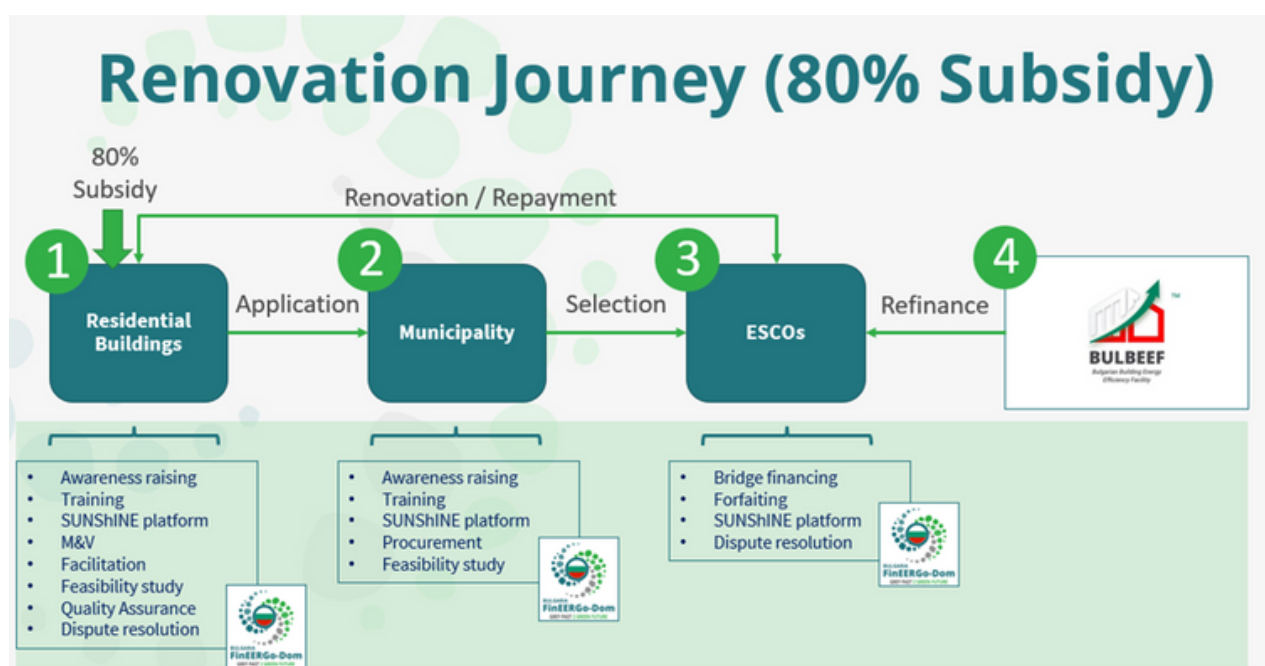
Figure 7: Building Blocks of Bulgarian One-Stop Shop Services



At the current stage of development, the Bulgarian FinEERGo-Dom OSS offers three main packages of services (journeys) outlined and presented in the figures below.

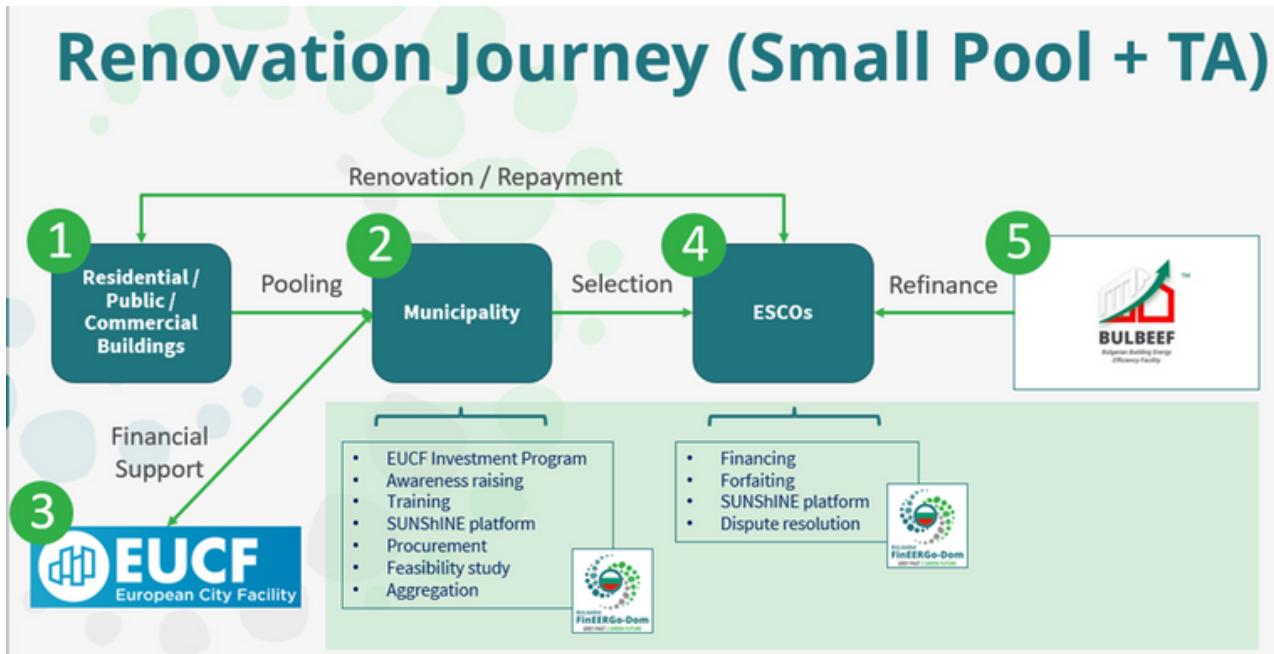
- The “80% subsidy” journey to allow integration with the National Resilience and Recovery Plan.

Figure 8: The “80% Subsidy” Journey



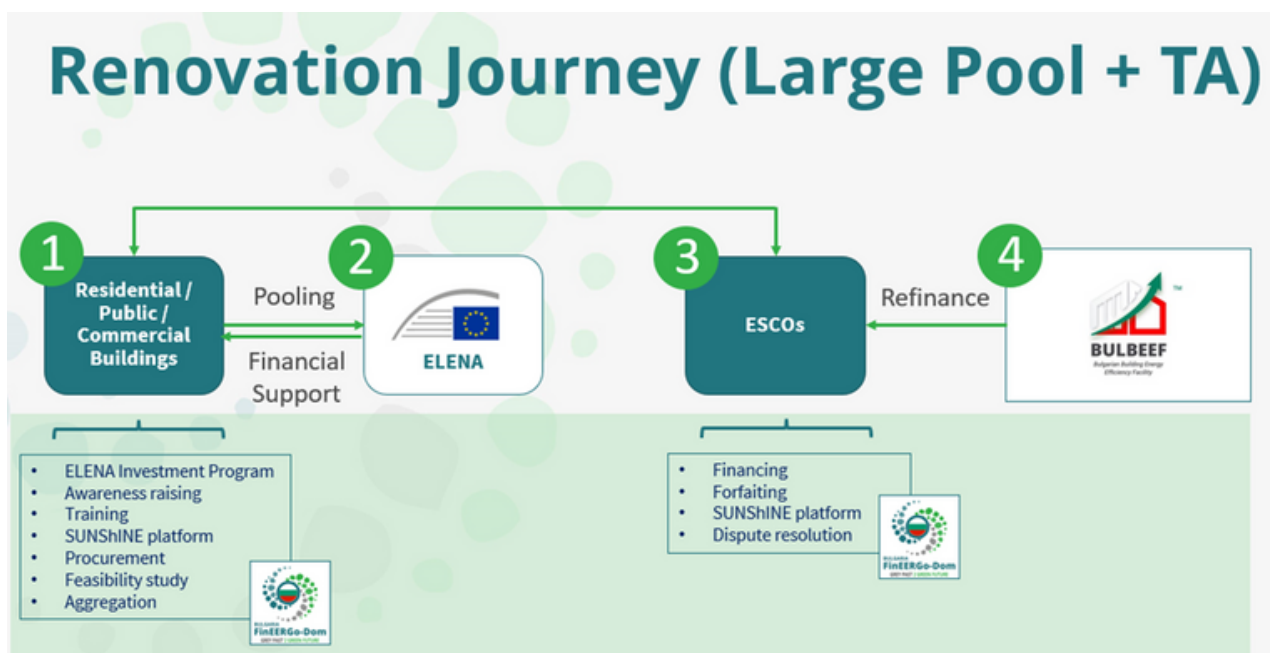
- The “Small pool plus technical assistance” journey to take advantage of the EUCF technical assistance programme.

Figure 9: The “Small Pool + Technical Assistance” Journey



- The “Large pool plus technical assistance” journey to take advantage of the ELENA technical assistance programme.

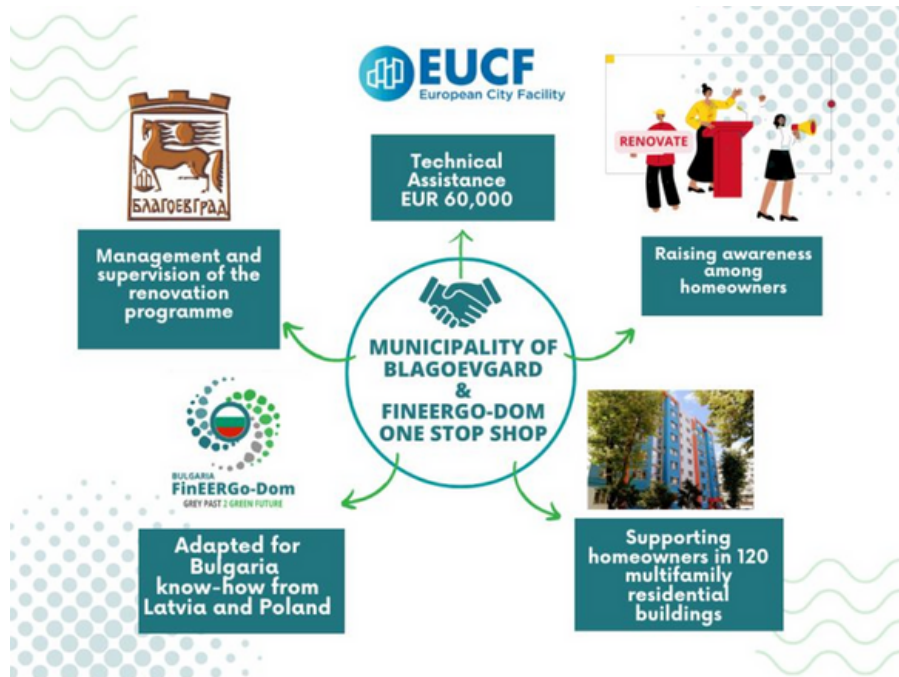
Figure 10: “Large Pool + Technical Assistance” Journey



Some of the journeys we have already embarked on include:

- With the support of the Bulgarian FinEERGo-Dom team, the Municipality of Blagoevgrad was awarded a grant by the EUCF. Homeowners from more than 120 MFHs 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, training, etc.

Figure 11: Municipality of Blagoevgrad Journey



- 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 MFH renovations in the region after the end of the RRF. All contracts and tools that were adapted and developed for Bulgaria under the FinEERGo-Dom project will be utilised by the municipality and incorporated in its strategy.

Figure 12: Municipality of Burgas Journey



Lessons Learned

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. Additionally, over 20 interviews were conducted, and articles were created and disseminated.

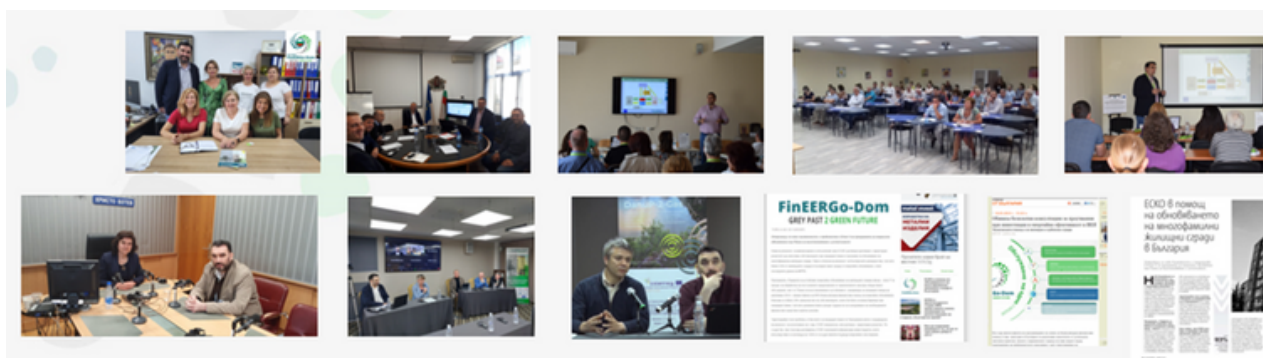
In reference to social media, FinEERGo-Dom tops the rankings among H2020 projects with over 420 posts published separately on LinkedIn, Twitter, and Facebook. In addition, YouTube content was also regularly published, e.g. training sessions, interviews, explanatory videos, etc.

Considering the central role played by EU and government programmes managed by municipalities, a trend that is envisioned to persist in reference to the MFH renovation process in Bulgaria, public authorities' capacity to blend financing for and procure integrated renovation projects becomes pivotal. Although substantial progress has been made by making the EPC mechanism eligible under the Bulgarian Resilience and Recovery Facility, a lot of details and 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 substantially hindered. Replicating and adapting the Latvian experience with the establishment of the Bulgarian FinEERGo-Dom OSS proved to be able to address the identified lack of capacity. Next, it has to be scaled rapidly in the course of the next two years.

Another important obstacle to renovation at scale in the MFH segment is the lack of dedicated supporting financial infrastructure. The need for long-term financial products, e.g. providing financial services of up to 15 years and beyond, which allow small monthly instalments from homeowners for longer periods, has currently been partially met with the help of the EERSF and BULBEEF 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 EPC in the RRF, which effectively solved the temporary gap in reference to the lack of long-term loan and forfeiting facilities in Bulgaria.

Figure 13: Dissemination and Communication Activities in Bulgaria



3

Austria

The Austrian Energy Agency (AEA) has been instrumental in shaping the FinEERGo-Dom narrative in Austria. Throughout this journey, they have encountered various challenges and have been actively working to overcome barriers.

Replication of the LABEEF Model and Contracts

The FinEERGo-Dom project aimed to establish the Building Energy Efficiency Facility (ÖBEEF) in Austria, modelled after the Latvian Building Energy Efficiency Facility (LABEEF). Key tasks included translating and adapting energy saving contracts and guidelines from Latvia to align with the Austrian legal framework while maintaining the core structure of LABEEF investment policy guidelines.

In Latvia, LABEEF contracts and guidelines, formulated with stakeholder input, laid the groundwork for the transparent financing of deep renovations. The AEA worked with a law firm to ensure the LABEEF model was compatible with local laws for the proposed ÖBEEF model. However, a pilot project in the MFH sector using EPC did not materialise, and the feasibility of the ÖBEEF financing mechanism remains untested.

Nonetheless, under the project, an EPC plus agreement compatible with Austrian legislation was developed based on the LABEEF model. This adapted version incorporates specific legal and regulatory requirements with changes primarily in terminology and additional clauses to suit Austrian laws, case law, and condominium ownership requirements.

The project also explored dispute resolution procedures and compensation calculations for the non-fulfillment of guaranteed energy savings, tailoring them to Austria's specific context. This included detailed provisions for force majeure situations, like COVID-19, and a revised forfeiting agreement setting a 30-day time limit for dispute resolutions.

Advisory Board feedback on the energy saving contracts (ESCs) highlighted the need to include cooling and waste heat energy in renovations considering the increasing number of hot days and energy efficiency potential.

Overall, there are no significant legal barriers to implementing the LABEEF model in Austria for apartment building renovations. Funding for Future (F3) has shown interest in managing the ÖBEEF by leveraging its experience from Latvia to facilitate efficient renovation projects in Austria. However, concerns remain about the complexity of renovations, especially for EPC plus projects that extend beyond thermal and energy performance to include features like bicycle parking or electric vehicle infrastructure.

Establishment of Pilot Projects

Heating is the primary source of energy demand in buildings, particularly in the residential sector where space heating represented 71% of total consumption in 2017 followed by water heating at 14%. The remaining energy usage is for electrical appliances, space cooling, lighting, and cooking, indicating significant potential for energy efficiency improvements in buildings.

Austria has nearly 50,000 apartment buildings constructed before 1980 (see the table below), many of which have already seen renovations like window replacements and heating system modernisations.

However, with a renovation rate below 1.5%, more progress is needed. According to Statistics Austria's micro-census (2004–2018), the renovation market is stable with 30,000 to 35,000 deep renovations and 110,000 to 120,000 single component renovations annually. However, there is a decline in retrofits supported by grants possibly due to low interest rates and a shift toward smaller home renovation projects. Current subsidy schemes have not been effective in driving significant deep renovation efforts.

Despite discussions with various stakeholders, including project developers and building owners, no pilot project was initiated within the project term. One key challenge is the diverse interests of different stakeholders in building projects. Many stakeholders believe deep renovations are not necessary if certain interventions, like window replacements or heating system upgrades, have already been implemented. The low interest rates and a complex subsidy landscape further disincentivise project proponents from pursuing extensive renovations.

Additionally, the complexity of the ÖBEEF and energy saving contracting models poses communication and implementation challenges with stakeholders expressing scepticism about ÖBEEF's relevance in the Austrian market and the simplification of renovation processes, whether subsidised or not. This reflects broader barriers and challenges that hinder the implementation of pilot projects in building energy efficiency.

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

Lessons Learned

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 heating/cooling systems and executing photovoltaic projects involve 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 operational and investment costs. Thermal modernisation projects below 20 dwellings in the residential sector are hardly economical for ESCOs due to the enormous planning efforts and risks associated with financing the construction work according to position paper published by the umbrella organisation of ESCOs (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 ESCOs from getting involved in project implementation.

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

Recommendations

Exchanges with political stakeholders, such as relevant ministries and policymakers, chambers, and guilds, should be continued to improve framework conditions, 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. The 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 to the Tenancy Law Act, as is the case in the Public Housing 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 EUR) 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 EUR requires a large pool of properties. Creating a project pool through the association of municipalities with the necessary volume from a number of project partners could address this gap.

Furthermore, state guarantees have to be provided to mitigate 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: To lower the default risk, state guarantee models have to be provided for the benefit of ESCOs. This not only creates jobs and boosts the renovation rate, but also helps minimise fines for not reaching climate change goals.

4

Slovakia

Mattig Management Partners (MMP.SK) wrote the FinEERGo-Dom story in Slovakia by building upon an already present Maastricht compliant EPC template for public buildings.

Replication of the LABEEF Model and Contracts

The FinEERGo-Dom Slovak team successfully replicated the LABEEF model with a significant advancement being the introduction of an official EPC template (GES – Guaranteed Energy Services) for public sector buildings effective since 1 February 2019. This development removed the debt ceiling obstacle for municipalities and mandated the use of the EPC template in public building renovations, thus prohibiting any modifications.

The EPC template, adapted from the Latvian model to Slovak legal standards, included final contracts and documentation in both English and Slovak developed with a local legal team. This process involved a comprehensive comparison with the Latvian version across financial, legal, and technical aspects. While the General Terms and Conditions of the Slovak and Latvian contracts considerably differed, other provisions were similar, especially regarding the regulation of rights and obligations.

Regarding energy analysis requirements, Slovakia's Energy Efficiency Act does not specify these in detail. However, the methodology for EPC contracts suggests that such an analysis should include an examination of the client's current energy system to verify document accuracy to establish a detailed overview of potential energy savings and prepare project documentation.

In Slovakia, apartment building administration can be managed either by a community of owners or an external administrator. Administration activities encompass building operation, maintenance, repairs, and services with both models requiring similar administrative responsibilities.

In terms of the value added tax (VAT), if apartment house administrators act on behalf of the owners, they are not considered the recipient of construction works for tax purposes. However, they should not act as a taxpayer when ordering services even if registered as one. The actual recipients of construction works or services are individual apartment owners, fees for apartment house administration are partially VAT-exempt with some subject to the VAT.

If renovation includes non-energy saving reconstruction, a separate agreement is needed under Slovak law. The Slovak Republic's Concept for the Development of Guaranteed Energy Services acknowledges that public administration bodies might undertake complex renovations, including investments not primarily for energy savings. These parts must be separated from the GES contract, thus ensuring that only energy saving renovations are funded from energy savings. Even measures with relatively low savings can be considered energy measures as they are collectively assessed under the project.

Establishment of Pilot Projects

In accordance with the Slovak Republic's Ministry of Construction and Public Works 1999 Resolution No. 1088, a building stock classification and renovation policy framework were established. That framework detailed the breakdown of residential and non-residential buildings as presented in the table below. The majority of Slovakia's MFH stock has been renovated using grants and European structural and investment funds, thus shifting the primary financing need to public buildings and local administrations.

The key to this shift was the introduction of a standardised EPC scheme for the public sector, which eliminated the debt ceiling obstacle for municipalities. The focus was thus turned to public and privately-owned non-residential buildings for which projects are predominantly funded through private sources. The project pipeline encompassed six diverse buildings: Two public buildings, two multifamily buildings, a school, and an art school.

For three projects – an administrative building, a cultural centre, and an art school – certified audit firms conducted energy audits. The proposed measures, reviewed by the Slovak team, are expected to exceed 50% in energy savings. The other three projects are at varying stages of preparation, with the MMP.SK team providing support in calculations, technical advice, and planning.

The administrative building, a seven-floor structure from the 1970s, and the 1986-built municipal cultural centre both require insulation, window replacements, as well as heating and lighting system modernisations. Similarly, the residential building and the multi-generational rental facility, both dating back to the 1980s, need insulation, new windows, and innovative heating solutions.

The primary art school, a 19th century building, requires wall and roof insulation, window replacements, and modern lighting and heating solutions, including photovoltaic panels. These measures align with the investment policy guidelines and are representative of the types of buildings found across Slovakia, thereby demonstrating the potential for replication.

In summary, stakeholders recognise the benefits of EPC and the BEEF model, appreciating the financial safeguards and high public visibility it offers without burdening municipal budgets. This understanding is crucial for municipal councils and private owners alike. The Slovak team accessed preliminary documentation to assess potential savings and provide input on the proposed measures.

Lessons Learned

As mentioned above, most residential buildings in Slovakia are renovated, but there is room for improvement. To push energy saving and energy efficiency projects toward monitoring, as is foreseen in energy saving contracting, the project experts suggest the following:

- 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 with the various stakeholders at all levels.
- Work toward optimising the length of public procurement processes.

Table 2: Building Stock in Slovakia

Total Building Stock	To 1950	1951 - 1960	1961 - 1970	1971 - 1980	1981 - 1990	1991 - 2000	Total
	Million m3 of Built Buildings Volume						
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 manufacturing 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	1,019.60

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Romania

Although the Romanian story does not include a binding confirmation for implementing a pilot project, the information exchanges and discussions throughout the FinEERGo-Dom project, completed by Mattig Management Partners – Romania (MMP.RO), have been immensely beneficial. They have significantly enhanced stakeholder knowledge and understanding about energy efficiency measures, EPC plus contract solutions, and ESCOs. Moreover, these interactions have successfully raised awareness among stakeholders about the importance and potential of these initiatives.

Replication of the LABEEF Model and Contracts

In Romania, significant progress has been made in replicating the LABEEF model and contracts by focusing on the following key aspects:

- A legal assessment of the LABEEF model and contracts was conducted, with adaptations recommended for an EPC suitable for Romania.
- The LABEEF contract and other related documents were translated into Romanian and modified according to Romanian legal standards.

The initial evaluation revealed that the LABEEF documents, originally tailored to Latvian law, required modifications to align them with Romanian legislation. This led to the hiring of a legal advisor for the necessary amendments. Concurrently, the Romanian Ministry of Environment, Waters and Forests initiated a public debate on financing guidelines to enhance energy efficiency in public buildings, including educational establishments. While these guidelines are not yet formalised, they represented a positive move toward standardised legislation on energy performance improvements in public buildings.

For EPC agreements with private entities, the local FinEERGo-Dom team adapted the LABEEF documents to comply with Romanian law. This adaptation was challenging due to the absence of a dedicated Romanian facility like LABEEF and the lack of an official Romanian EPC model or guidelines for energy efficiency measures.

Given Romania's specific legislation for co-owned buildings and financing of single-family house renovations, detailed project knowledge is crucial. At the time, financing mechanisms existed for single-family house energy efficiency projects, and guidelines for energy efficiency in educational buildings were under public consultation. Notably, these guidelines considered the VAT as an eligible financing expenditure under certain conditions.

In line with the legal advisor's recommendations, MMP.RO adapted and translated several key documents into Romanian, including various annexes of the EPC (General Terms and Conditions, Specific Conditions, Forfeiting Agreement, Maintenance Agreement, and various instructions).

Moreover, the Romanian team incorporated the ROMBEEF (Romanian Building Energy Efficiency Facility) investment policy guidelines and standards into the documents. These additions, available in both English and Romanian, include general eligibility criteria and detailed instructions for forfeiting and maintenance agreements, thus enhancing the understanding of all stakeholders about ROMBEEF contracts, processes, and financial aspects.

Establishment of Pilot Projects

Activities at the local level helped to identify possible projects in the pipeline. Currently, two projects have been 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 renovating and replacing the central heating system. Having collected the technical details to calculate the energy and money saving potential, it became apparent that conducting an energetic audit and preparing a business plan were necessary.
- The second project concerns buildings of the Social Assistance Department of Sibiu County (DGASPC Sibiu). The management of DGASPC Sibiu is analysing the buildings to decide which ones need to be renovated and where investments would be most beneficial.

Lessons Learned

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

- Developing new architecture for operational programmes over the 2021-2027 period while 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 to develop complementary financing mechanisms that can support the ambitious EU targets.
- Improving the national programme for energy efficiency in multi-family residential buildings: Programme requirements should be improved by setting higher performance levels and coordinating the grant amount based on 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 ESCO market development: Both changes in legislation and the promotion of ESCOs 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 aimed at promoting innovative financing schemes, developing ESCO and energy savings performance contracts, as well as supporting training, pilot, and dissemination programmes.

Recommendations

To streamline all recommendations, they have been grouped by sector and priority. The most important thing is to enhance awareness and educate citizens and policymakers about the benefits of deep renovations. Informed citizens can understand their needs and stimulate demand when policymakers legislate long-term policies that promote deep renovations. This entails eliminating carbon incentives and subsidies, developing tax incentives for corporations, especially small and medium enterprises (SMEs), and requiring better data collection and enforcement/safeguards for ensuring results

Awareness and Education

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

- If market barriers exist in policy and regulation for implementing comprehensive building renovation projects under 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 the potential complexities that may arise from implementing such a scheme. Stakeholders should only be approached once there is sufficient evidence on the effectiveness and possible benefits of the scheme, and the necessary steps to create an effective market are clear.

Policy and Regulation

- Establish targeted financial support to facilitate self-sustainable and efficient market development.

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Design financial support programmes so that they do not overlap or compete with each other.

Ensure synergy in public support programmes, for example, by combining subsidy and public guarantee programmes while providing loans to ESCOs.

Reduce fossil fuel subsidies and direct them toward energy efficiency projects.

- Ensure support is comprehensive and can be blended with private finance initiatives.

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Allow EPC projects to be incorporated into such programmes.

- Ensure support is geared toward fostering market growth by demonstrating the market potential and reserving significant support for vulnerable households.

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Avoid extensive grant programmes for all and instead design programmes that offer substantial support to vulnerable households and projects with high energy savings potential.

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 ESCO market.

- Decrease bureaucratic obstacles for smaller projects.

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Remove the requirement for public tenders for projects falling below a certain threshold. Reduce the number of votes required to approve renovation projects.

Financial mechanisms

- Consider replicating financing models that were effective in similar contexts to enhance the likelihood of success, such as LABEEF that proved successful despite its small size and difficult political situation.



- 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, thus ensuring alignment with prevailing market dynamics.

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Collaborate closely with ESCOs during the product design phase to align project requirements with the criteria of financial institutions when implementing projects under an 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 the EPC has a sufficient investment term as payback periods are longer (20+ years) for comprehensive building renovation projects.

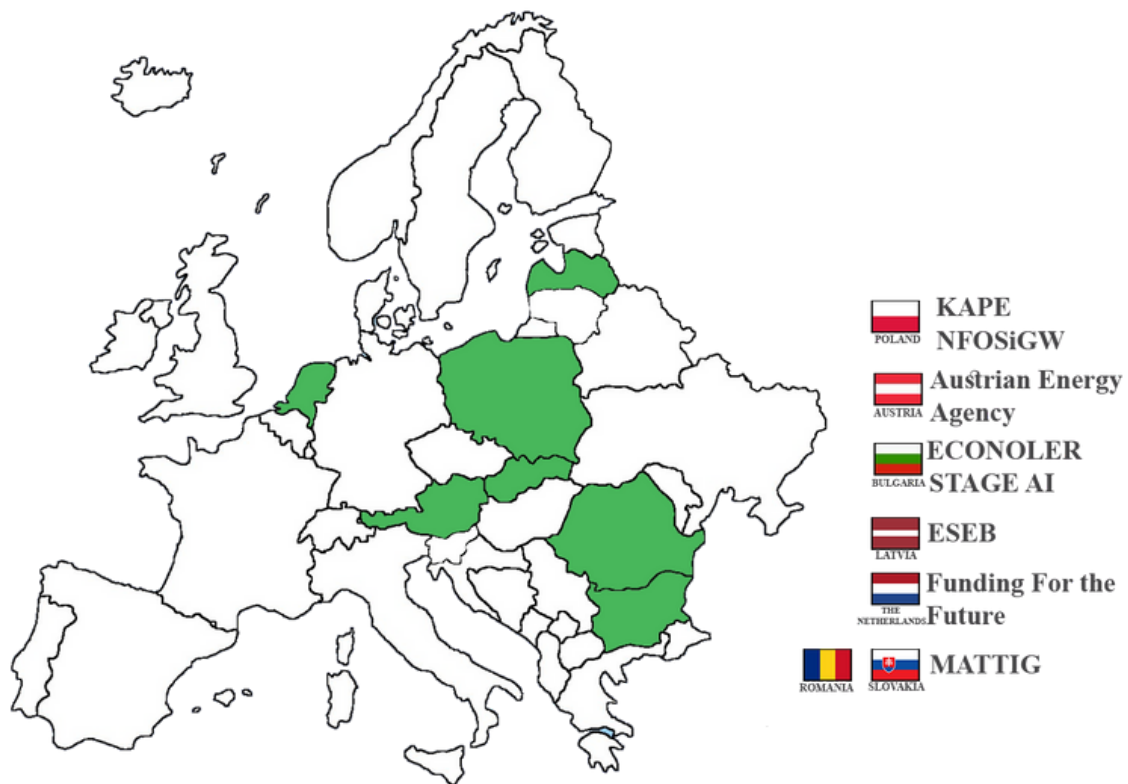
Technical Assistance and Support

- Develop an OSS that is specialised in different renovation solutions and support programmes to guide stakeholders through the whole renovation process starting from project initiation.
- In instances where the market fails to demonstrate adequate incentives 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 toward implementation (a great example initiative in Spain is Poblado Dirigido de Orcasitas).
- Utilise support programmes like ELENA in the local context to incentivise the market.

Monitoring and Evaluation

- Monitoring and verification must be based on international standards to ensure national and international requirements are aligned.

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Conclusion

Despite significant potential for deep building renovations across Europe, existing constraints have limited the utilisation of financial tools designed to enhance the energy performance contracting market. A more unified European approach focused on deep renovations would be more effective.

Currently, market trends favour visible, quick return on investments like solar panel installations over less visible energy efficiency renovations. To increase renovation rates, it is crucial to develop targeted policies, engage in advocacy, and provide extensive learning programmes for housing managers and owners. Simplified information for end users and training programmes for construction workers and developers are also essential.

Existing grants for renovation projects often discourage deeper and more sustainable initiatives. ESCOs are generally uninterested in complex renovations due to higher risks and lower returns. However, building owners often overlook the immediate and long-term benefits of deep renovations, such as increased property values and improved safety and comfort.

EPC plus represents a disruptive financial mechanism that requires a shift to transparent long-term solutions. However, achieving alignment among stakeholders with diverse interests is challenging. Inadequate laws and regulations stifle the energy efficiency sector by not incentivising private market participation. Policies should be aimed at creating self-sustaining market development and integrating EPC plus projects into financial support programmes.

Financial sector incentives are currently insufficient to support the ambitious EU targets. National authorities should align their operational programmes with national energy efficiency programmes to foster market development in deep renovations and establish national energy efficiency funds with private partnerships.

Stakeholders often lack understanding about the comprehensive benefits of building renovations, tending to prioritise easily achievable goals over more complex solutions. Furthermore, the unclear allocation of costs to tenants and the separation of operational and investment costs deter involvement in energy service contracting. Clear communication that deep renovations require initial investments for long-term service guarantees is necessary.

To address these issues, the development of OSSs offering integrated renovation services is recommended. Municipalities should promote these initiatives and support programmes in a similar manner as ELENA to incentivise the market. Other recommendations include providing pre-project information, adapting legal materials, introducing additional funding programmes tied to long-term results, establishing state guarantees for energy savings, and implementing subsidy schemes for energy service providers.

Reluctance to monitor and verify long-term project results complicates the structure and increases service provider liability. ESCOs often do not offer guarantees matching the lifespan of investments. The perception that renovations are unnecessary due to previous upgrades or abandoned apartments also hinders progress.

Success in the public sector has led private EPC providers to hesitate in entering the residential market wherein contracts need to be longer and account for greater risks. Tax breaks based on verified savings could be a potential incentive for such businesses.

In conclusion, while the need for deep renovations and LABEEF-like financing instruments is recognised, a significant increase in renovation rates requires a fundamental shift in approaches. Current policies and regulations are often inconsistent and compete with one another, leading to an underdeveloped market for energy efficiency contracting in residential buildings, with limited incentives for development and scalability.



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