Mainstreaming of refinancing schemes as enhancer for the implementation of energy efficiency service projects

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GLOSSARY

Taking into account the fact that some of the terms that are important in the context of the REFINE-project are not used in a uniform way throughout Europe, we present the following list of definitions:

Energy efficiency (EE): The ratio of output of performance, service, goods or energy, to input of energy
Energy efficiency improvement (EEI): An increase in energy efficiency as a result of technological, behavioural and/or economic changes
Energy efficiency improvement action or **measure:** An action normally leading to a verifiable, measurable or estimable energy efficiency improvement
Energy efficiency improvement investment: An EEI measure that requires the use of upfront investments, usually through the involvement of a financial institution (FI), and regardless whether these investments are related to hardware installations or to services.
Energy efficiency service (EES): Agreed task or tasks designed to lead to an energy efficiency improvement and other agreed performance criteria. The EES shall include energy audit as well as identification, selection and implementation of actions and verification. A documented description of the proposed or agreed framework for the actions and the follow-up procedure shall be provided. The improvement of energy efficiency shall be measured and verified over a contractually defined period of time through contractually agreed methods [EN 15900:2010]. If the EES includes EEI investments, it may or may not include financing of these investments.
Partial services connected to EES: Services that just include parts ("components") of the EES value chain like design and implementation (excluding verification, for example), but are designed to directly or indirectly lead to an energy efficiency improvement. If the partial EES includes EEI investments, it may or may not include financing of these investments.
Energy efficiency service provider: A company that offers EES to its clients. Another term frequently used in this context is ESCO (Energy Service Company), but this term is mostly connected to the provision of energy performance contracting (EPC) or energy supply contracting (ESC), which are specific forms of EES.
Energy Performance Contracting (EPC): A comprehensive energy service package aiming at the guaranteed improvement of energy and cost efficiency of buildings or production processes. An external ESCO carries out an individually selectable cluster of services (planning, building, operation & maintenance, (pre-) financing, user motivation …) and takes over technical and economic performance risks and guarantees. Most projects include third party financing. The services are predominantly paid out of future saved energy costs (Graz Energy Agency Ltd, 2008).
Financing Models for Market Growth: Financing models that enable EES providers to clean up their balance sheet, thus gaining financial leeway for new projects. In many cases, these models contain a refinancing scheme.
Refinancing: A model, where an EES provider sells and a refinancing institution acquires receivables to be paid by an EES client, thus leading a restructuring of the initial financing set-up which may have been ensured through the EES provider's cash flow, credit financing, leasing financing or other financial means.
Sale of receivables or **sale of claims:** umbrella term for any kind of receivables purchase agreements that allow a company (in our case an EES provider) to sell off the as-yet-unpaid bills or expected receivables from its customers.
Cession: In the REFINE-project, we understand cession as the legal term for the assignment of receivables.
Factoring: A specific form of receivables purchase agreements, where short-termed receivables are sold. The non-payment risk remains with the seller.

Forfaiting: The sale of longer-term account receivables usually without right of recourse (widely used in export business)

Definitions of on-balance sheet types of financing

Debt financing: Situation in which investors lend a certain amount of money on credit in exchange for repayment plus interest. The most common EE financial product is a loan directly to the client (owner of the premises) or to the ESCO – this is known as third-party financing (TPF).

Equity financing: Situation in which investors lend a given amount of money in exchange for a stake in a project. The most common example of equity financing is private equity. With respect to energy efficiency businesses, equity investment can take the form of an ESCO issuing additional shares in the company's common ownership.

Mezzanine financing: Mezzanine financing is a hybrid form of financing that combines debt and equity financing. In most cases, debt will be ranked as a preferred equity share. Mezzanine debt financing is thus riskier than traditional debt financing but also more rewarding; it is associated with a higher yield. Mezzanine financing also allows a lender to convert debt capital into ownership or equity interest in the company if the loan is not paid back on time and in full.

Definitions of off-balance sheet types of financing and entities

Project financing: Project finance, by contrast to on-balance sheet financing (loans, debt and equity), bases its collateral on a project's cash flow expectations, not on individuals or institutions' creditworthiness. It is off-balance sheet financing. A typical project financing is divided between debt and equity financing.

Leasing: Leasing is the energy market's common way of dealing with initial cost barriers. It is a way of obtaining the right to use an asset. Finance leasing can be used for EE equipment, even when the equipment lacks collateral value. Leasing companies, often bank subsidiaries, have experience with vendor finance programs and other forms of equipment finance that are analogous to EE. Leasing is the most common form of equipment manufacturers' vendor financing, which is often applied in the case of combined heat and power (CHP) equipment. Leasing is often done as part of a Special Purpose Vehicle.

Special Purpose Vehicle (SPV) / Special Purpose Entity (SPE): A firm or other legal entity established to perform some narrowly defined or temporary purpose, which facilitates off-balance sheet financing of projects. A standard approach is to form a SPV / SPE and place assets and liabilities on its balance sheet. The investors accomplish the purpose for which an SPV / SPE has been set up – for example implementing a large EE project – without having to carry any of the associated assets or liabilities on their own balance sheet.

1 EXECUTIVE SUMMARY

The REFINE project, supported by the European Horizon 2020 programme, has successfully advanced the implementation of energy efficiency service (EES) projects through the promotion of refinancing schemes.

Within the REFINE project, a refinancing scheme is understood as an instrument where an EES (Energy Efficiency Service) provider sells the receivables to be paid by an EES client to a refinancing institution. This kind of scheme can help overcome certain financing barriers that frequently emerge in the EES business.

EES providers address the clients' reluctance to commit financial resources by including financing into their service packages. In this case, the EES provider (frequently called ESCO) prefinances the investment and gets repaid through yearly remunerations which are dependent on the actual savings achieved. This means not only that the EES provider has the investments in his balance sheets but also leads to a situation where the EES provider sooner or later reaches his own credit limits and has to reject further EES projects. Therefore, if remarkable market growth is intended, one major question is how the balance sheets of EES providers could be cleaned up in order to gain financial leeway to expand the EE business.

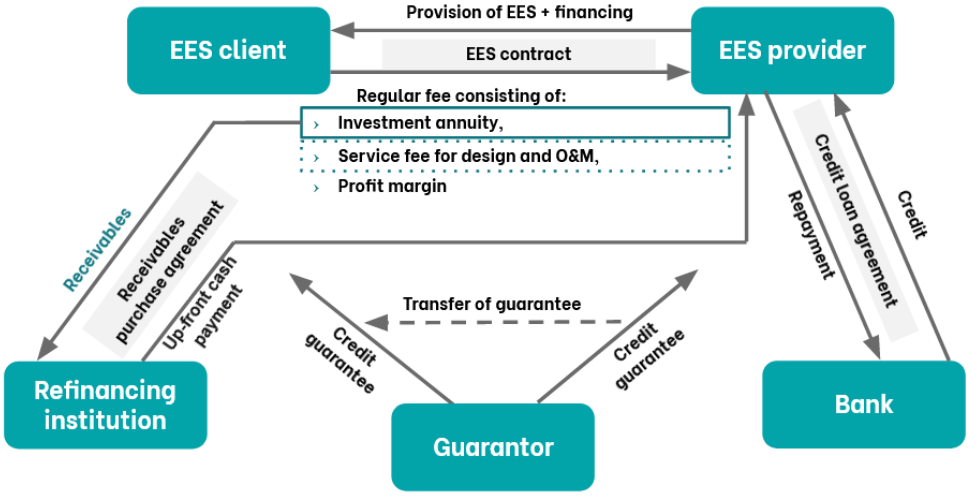

Figure 1: Overview refinancing of EES projects

Refinancing schemes – as schematically shown in Figure 1 - can **overcome the above-described financing barriers** in the EES business. In general, a refinancing scheme can be defined as an approach whereby an EES provider sells and a refinancing institution acquires receivables to be paid by an EES client. In a refinancing scheme, the EE project is financed initially through a corporate loan (e.g., overdraft) provided by a bank to an EES provider who is implementing the EE investment in the frame of an EES project. The client immediately profits from this approach, as he is generally not forced to burden his balance sheet while he takes advantage of the broad scale of benefits of the EE investment. A certain period after the investment has been implemented and performance of the investment has been demonstrated, the EES provider sells off the expected receivables to a refinancing

institution and gets cash up-front for the receivables, while the buyer gets the right to collect the receivables. By this way, the EES provider clears his balance sheets and gains leeway for the financing of new projects which he could not realise otherwise. Therefore, the possibility of applying refinancing schemes is a major element supporting the growth of the EES provider.

The following provides a brief overview of the key findings and achievements of the project, encompassing various aspects of refinancing strategies and their implications for the EES market.

Market Assessment and Case Studies

The project started with a thorough market assessment, delving into the current state of the energy efficiency services market with a particular focus on refinancing schemes. Through case study analyses and expert interviews, critical insights emerged that shed light on the dynamics influencing the effectiveness of refinancing approaches. While some countries exhibited varying levels of maturity in their EES markets, others were in developmental stages, underscoring the need for tailored strategies. Furthermore, in spring 2022 an online market survey was conducted among approx. 50 EES providers in 10 EU countries. The results of the survey indicate that among the EES providers the interest in refinancing instruments, such as sales of receivables, is high: 79% of the respondents have general interest in this financing instrument.

Generic Concepts and Tools

One important outcome of the project was the development of generic concepts for refinancing schemes, driven by case study findings, expert consultations, and extensive research. These concepts are aimed at different client sectors, investment types, and risk considerations, providing a framework for the application of refinancing in EES projects across different contexts. The development of standardized contract stipulations aimed to facilitate the practical use of refinancing in EES projects, offering recommendations for incorporation into contracts that are generally in use by EES providers.

Rating System and Risk Assessment

Acknowledging the intricate landscape of risk evaluation in EES projects, the project introduced a rating system that assessed the refinanceability of projects through a multi-layered approach. This encompassed evaluation of financial institution default risk, project-specific risk, and the evaluation of preparedness of contracts to refinancing approaches. By categorizing risks across these layers, stakeholders gain a comprehensive view of risk dynamics, enhancing informed decision-making regarding the viability of refinancing in a specific EES project.

Guarantee Instruments

The analysis of guarantee instruments elaborated within the REFINE project aimed to facilitate the EES business and the application of refinancing schemes for EES projects. The concept of unconditional payment guarantees emerged as a suitable protection mechanism for financial investors against customer payment defaults. The proposed approach combines public and private guarantees to support capital-market based refinancing, mitigating risks for investors and EES providers.

Facilitation Services: Bridging Gaps in the EES Market

The business model of facilitation services was meticulously analysed within the context of refinancing operations for energy efficiency projects. The project identified core brokerage

services and neighbouring facilitation services, catering to diverse national EES markets and project types. Useful facilitation services were identified and categorized based on their value and adaptability, spanning various stages of the refinancing process. Lean Canvas Model and Value Stream Model were employed to define business models related to the provision of facilitation services, with intermediation between ESCOs and refinancers serving as a core service.

Pilot Applications: Realizing Refinancing Potential

The project's focus on pilot applications showcased the successful application of refinancing knowledge and gathering feedback from participating stakeholders. Exceeding set indicators, over 43 pilot processes were executed in collaboration with different stakeholders, most of which were either EES providers or financial institutions. The pilot applications underlined the potential of the refinancing approach and bridged gaps between EES providers and financial institutions, thus stimulating interest to drive growth in the EES business.

Capacity-Building and Training Initiatives

The commitment of the REFINE project to capacity-building and training was evident through the organization of tailored training materials and events. Comprehensive resources, including slide decks, e-learning modules, and instructional videos conveyed project outcomes, findings, and tools to diverse audiences. The training events, conducted across partner countries, effectively addressed market-specific gaps and disparities, fostering discussions on obstacles and solutions.

Main learnings and policy recommendations

The project identified key conclusions with both European-wide and country-specific implications. It was observed that while refinancing is successful in certain contexts, it remains a niche approach in the European EES market due to well-established financial services and existing financing options that suit prevailing market conditions. Market size, saturation, and the availability of alternative funding sources also influence the limited adoption of refinancing.

However, the significance of refinancing is expected to grow in the future, driven by challenges such as decarbonization goals and the need for deep renovation projects. Public guarantee schemes emerged as game changers, mitigating risks for financial institutions and promoting the adoption of innovative project types. Facilitation services were highlighted as vital for supporting refinancing efforts until they become mainstream in the EES market, and good practices provided in trainings were shown to enhance energy efficiency investment outcomes.

In conclusion, the REFINE project has significantly advanced the understanding and application of refinancing schemes in the EES business. Through a comprehensive exploration of market dynamics, development of generic concepts, standardized contract stipulations, risk assessment systems, and facilitation services, the project has provided a roadmap for the market growth of EES. As the industry continues to evolve, stakeholders are encouraged to leverage the insights, tools, and resources generated by the project, fostering transformative progress in the EES sector. For in-depth information and resources, stakeholders can refer to the full documentation available on the REFINE project website: https://refineproject.eu/

2 INTRODUCTION

This report has been developed as part of the REFINE project (Mainstreaming of refinancing schemes as enhancer for the implementation of energy efficiency service projects). The project, supported by the European Horizon 2020 programme, aims to contribute to the supply of sufficient and attractive financing sources to EEI (Energy Efficiency Improvement) investments through the enhancement of refinancing schemes which are important amplifiers of the market growth.

A refinancing scheme is understood as an approach whereby an EES (Energy Efficiency Service) provider sells to a refinancing institution the receivables to be paid by an EES client. This kind of scheme can help to overcome certain financing barriers that frequently emerge in the EES business in general, but represent a barrier for EES markets in most of South and Eastern European countries, in particular. By effectively refinancing EES projects, it becomes possible to unlock new sources of capital and maximize the long-term value of these endeavors. The project has shed light on the multifaceted nature of refinancing, highlighting its importance in enabling the scalability and replication of energy efficiency initiatives on a broader scale.

By examining successful case studies, identifying key challenges, and proposing innovative solutions, the project has equipped stakeholders with actionable insights. These insights span various aspects, including model contracts, risk assessment, regulatory frameworks, and stakeholder engagement, all contributing to a comprehensive understanding of refinancing in the EES sector.

However, it is important to note that refinancing EES projects is still a relatively new field, and significant developments are expected to unfold in the coming years. The REFINE project has laid a solid foundation by highlighting current best practices and lessons learned, but the dynamic nature of the industry necessitates ongoing adaptation and evolution. As market dynamics shift, regulatory frameworks evolve, and new financing mechanisms emerge, refinancing in the EES sector will continue to evolve, creating new opportunities and challenges that demand continuous learning and innovation.

In conclusion, the REFINE project has been instrumental in advancing the understanding of refinancing of EES projects, providing key conclusions and specific learnings that can guide stakeholders in this emerging field. By leveraging the knowledge gained from the REFINE project and remaining open to future advancements, stakeholders can unlock the full potential of refinancing in driving sustainable energy initiatives and accelerating the transition to a greener future.

3 MARKET ASSESSMENT

This first phase of the project aimed to deepen the understanding of the current state of the energy efficiency services market in the partner countries with a special focus on refinancing schemes and success cases within the EES sector. During the first half year of the project, several research paths were explored in order to gather the necessary information on which to build the schemes and tools that would be developed later in the project.

First, **case studies on existing refinancing instruments** in the national markets were explored, these were identified in the proposal phase. This analysis was expanded in order to diagnose the current state of the European EES markets and the possibility of integrating refinancing into their financial operations through a **literature and documents review**. It analysed aspects such as the availability of refinancing, attractiveness and barriers of existing refinancing instruments, customer and competitor landscape, costs, legal and insurance framework conditions, national and European guarantees, etc.

Having gained an in-depth understanding of the state of the EES market through the industry expertise of national partners and literature research, **qualitative experts interviews** with senior professionals from financial institutions, facilitators, legal experts and ESCO executives were structured. The issues addressed in these interviews focused on risk assessment of EES projects, coverage of risk, existing barriers to EES projects development, specific business models for refinancing schemes, coordination barriers and costs of refinancing in general, among other topics.

All the data collected through the various channels presented previously were synthesised in the **Refinancing Market Assessment Report**. This paper presents the conclusions drawn from the literature review and expert interviews comparing the different countries and disciplines involved. It also included a SWOT analysis of refinancing elaborated among the national partners based on the findings generated. Additionally, the lessons learned from this first project phase were presented.

3.1 Case studies on existing refinancing instruments

Market research on refinancing was initiated by examining 4 specific schemes that were taking place in different partner countries before the Refine project started. The four presented case studies can be divided into two groups according to the scope of energy efficiency improvement (EEI) measures implemented by EES projects:

The first three case studies describing **sale of receivables schemes** in Austria, Belgium and the Czech Republic focused on the implementation of technical EEI measures in building technologies, equipment, etc. as typical for standard EPC contracts.

They are based on a receivables purchase agreement that allows the EES provider to sell off expected receivables from its client. Such an agreement is arranged exclusively between the EES provider and the refinancing institution.

The figure below describes key steps of the refinancing process common among the case studies:

1. The EEI technology measures are implemented. After the functionality of installed equipment is proved by testing, the EES client signs a handover report stating that

the work was handed over without defects, and if there are any defects, how they will be removed.

2. The EES provider acquires the receivables. The EES provider issues an invoice billing the client for the full cost of the provided services (costs of design, equipment, installation and financing). The EES client signs the invoice confirming their liability to pay the invoiced amount in stipulated repayments according to the repayment schedule over the whole contract period.
3. Receivables are transferred to the refinancing institution based on the receivables purchase agreement with the EES provider and the invoice with the repayment schedule signed by the client. The EES contract remains in force for the entire maturity period of the receivables and the EES provider thus remains responsible for the technical element of the project.
4. The refinancing institution sends a lump-sum payment corresponding to the total value of the receivables sold to the EES provider.
5. The EES client sends regular repayments to the refinancing institution over the contract duration according to the repayment schedule confirmed previously by the client.

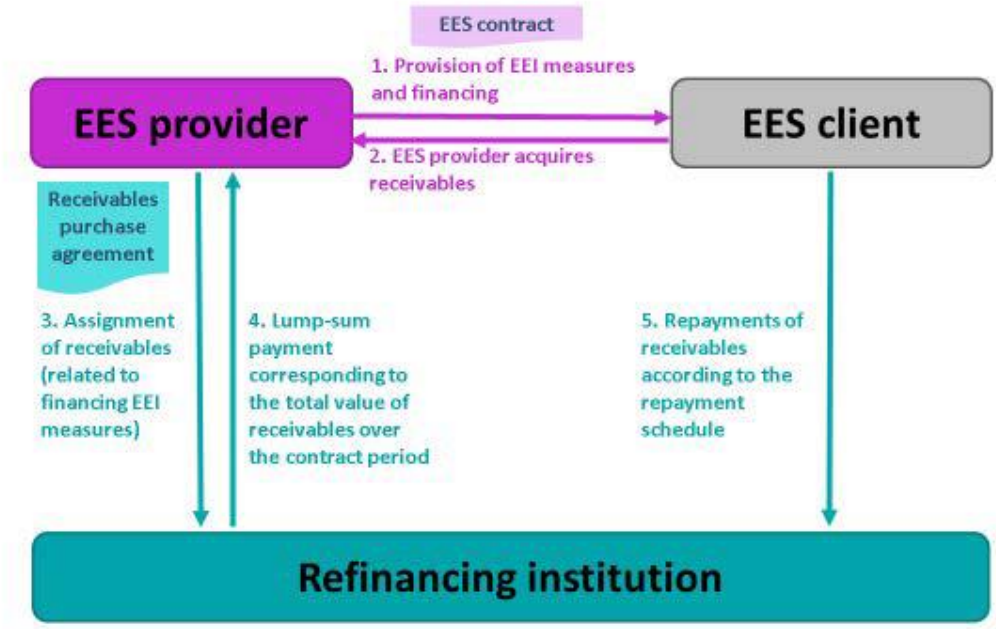

Figure 2: Standard sale of receivables process

Contract duration is up to 12 years in the Austrian and Czech case studies, and 14 years in the Belgian case study. The payback of the EEI measures is up to 10 years.

The other refinancing scheme, called **Building Energy Efficiency Facility (BEEF)**, set up first in Latvia, provides refinancing for comprehensive building refurbishment with EPC+ / EPC++ contracts with a duration up to 30 years. It is a private sector initiative focused on financing building renovation as a service, usually tailored towards the multi-family building sector.

This process is structured through a Special Purpose Vehicle (SPV) and managed by an specialized asset manager. The entire financing structure is agreed between the facility and the EES provider in advance of project implementation and a forfaiting agreement signed straight after the signing of the EPC contract. The forfaiting transaction is concluded before

the signing of the contract for the physical completion of the project. The service provider must follow the guidelines approved by the board of directors of BEEF.

3.2 Literature and documents review

The results of the literature review carried out by REFINE's national partners analysed the EES market from different perspectives, at market level, at the level of specific financial products and searching other similar EU projects. The main conclusions drawn are provided below:

At **market level** the main conclusion was that in the majority of partner countries, EES market is still in a developing stage. Only, four countries, Austria, Spain, Italy and the Czech Republic, were associated with some degree of maturity. Nevertheless, in most countries the EES market featured a growing trend.

Identified EES providers were frequently SMEs, although great heterogeneity was observed in this group. Financial institutions from Italy, Austria and Spain seemed more active in financing EES projects when compared to those from Eastern Europe, where public institutions normally prevailed as a source of funds. Remarkably, among the countries surveyed, access to financing for good quality projects was only considered easy at that time in the Czech Republic.

In the refinancing operations identified, the allocation of risks among the stakeholders involved was similar, usually the technical risks remain with the EES provider while the financial risk is transferred to the FI. However, the risk assessment and the ways to mitigate them vary among the different approaches. The main benefit for EES providers is to clear their balance sheet in order to being able to undertake more projects.

The main outcomes at **product level** related to the specific schemes identified and their specific features.

For the instalment purchase model identified in Austria, it is a type of sale of receivables oriented to CAPEX intensive projects. After installing the equipment, the EES provider issues an invoice to the client including the cost of installation with payment in periodic instalments. The EES provider then sells the receivables related to equipment delivery to a financial institution. The service component of the contract is invoiced to the client on a yearly basis for which the amount depends on the adherence with the savings guarantee. The only collateral is the retention of title that may be enforced by the refinancing institution in case of non-payment of the client.

The sale of receivables studied in Czech Republic is applied in EPC contracts, here the receivables are sold by the EES provider to a bank. The sale is agreed before the initial financing. It has been used mainly for public clients, enjoying good acceptance even without collaterals.

The LABEEF scheme develops a forfaiting concept in Latvia to ensure delivery of safety, health and comfort for homeowners. The repayment of the renovation cost is done by the building owner through on-bill repayment mechanism. Standardisation of the process and transparent investors' guidelines are strong assets in this scheme, allowing a decrease transaction costs.

The last section of the literature review focused on looking for **related EU projects** that had some bearing on the issues addressed in Refine. These projects were studied for scope overlaps, or related information that could be integrated into the Refine database. Some of

these projects were QualitEE, Transparense, Sunshine, SEAF, GuarantEE, TrustEE, DEEP platform, LAUNCH, EENVEST or FinEErgo-Dom.

3.3 Qualitative expert interviews

In addition to the case studies on refinancing instruments and the literature and documents review, the REFINE partners engaged relevant stakeholders to interview and obtain their opinions and perceptions about refinancing in the EES market. Altogether 65 expert interviews were conducted mainly through web-meetings, due to the pandemic restrictions at that time. The interviewed stakeholders came from 12 countries: Austria, Belgium, Croatia, Czech Republic, Greece, Slovenia, Spain, Ukraine, Italy, Germany, Slovakia and Poland.

The main outcomes from these interviews endorsed the conclusions from the literature review and the case study analysis.

- The Czech Republic was considered the most advanced in refinancing EES projects among the surveyed countries.
- The experts also citated some barriers to refinancing: the market being still not big enough in most countries, the sluggishness of the public administration and the lack of European or national guarantee funds, among others.
- In most of the countries the interview partners agreed that if a European or national guarantee fund for EE projects would be available, refinancing could be applied much more easily.
- The respondents were also inquired about the cost of refinancing schemes, the necessity to standardise the contract stipulation, and the impact of refinancing in the balance sheet of the EES provider and the client. Their answers complete the research adding perspectives from professionals that work day-to-day in the energy efficiency sector.

3.4 Refinancing Market Assessment Report

This report integrated the key findings derived from the research on EES markets and refinancing schemes across nine EU countries (Austria, Spain, Italy, Slovenia, Croatia, Greece, Czech Republic, Latvia and Ukraine). These were obtained, as explained before, through literature review, case study analysis, and expert interviews among relevant stakeholders.

In addition to serving as a summary of the work carried out throughout Work Package 2, this report also included the conclusions of a **SWOT analysis** carried out by all national partners and an extraction of **lessons learned**.

Some of the conclusions drawn from all the work carried out in the work package are summarised below:

The possibility to clean up the balance sheet of the EES provider is identified as a key driver for refinancing. However, in the case of BEEF, since the repayment is articulated through an on-bill mechanism, acts as any utility bill for owners. That means that for EES providers, there were not liabilities of sold receivables, and therefore refinancing did not present an additional advantage in this respect.

On the other hand, the fact that the credit risk of the project is transferred to a FI, who presumably would be better prepared to assess it, represents a major strength of the refinancing from the EES provider's standpoint. The reflection of this on the FI's side is

features another advantage: the FI does not bear the technical risk which remains with the provider, who is also better prepared to face it.

A common weakness that was identified among the refinancing schemes is the high transaction costs that they can entail. This weakness is exacerbated for private clients, who often pay a higher price for accessing refinancing.

Opportunities come hand in hand with the potential that standardisation has to streamline the refinancing process an diminish the costs (BEEF is an example of the benefits of standarisation). Other opportunities for refinancing are derived from the expansion of the scheme to other market segments and the establishment of state-backed guarantees.

3.5 Online Market Survey

In addition to the market assessment as described above, an online EES market survey was conducted between January and May 2022. The survey was developed by e7 and distributed by all partners of the REFINE project. It addressed exclusively to EES providers (ESCOs) and asked for more information about their (potential) interest in selling receivables from ongoing or future EES projects. By this way, the survey wanted to gain basic information about the current and expected future size of this business approach across Europe.

With a sample of 48 respondents from 10 EU countries, the survey indicated that among the EES providers the interest in refinancing, such as sales of receivables is high: 79% of the respondents have general interest in this financing instrument.

On this basis, Figure 3 and 4 show the approximate amount of receivables that possibly could be sold from ongoing or future EES projects among the respondents participating in the survey.

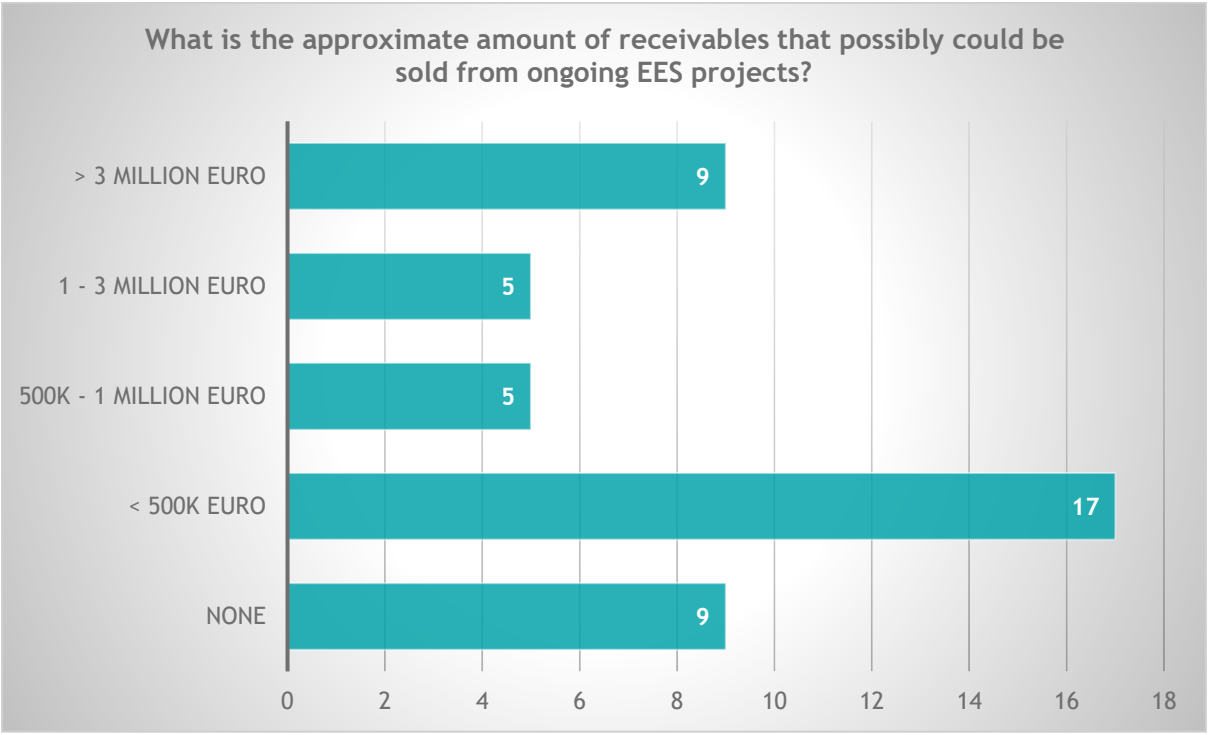

Figure 3: Possible amount of receivables that could be sold from ongoing projects

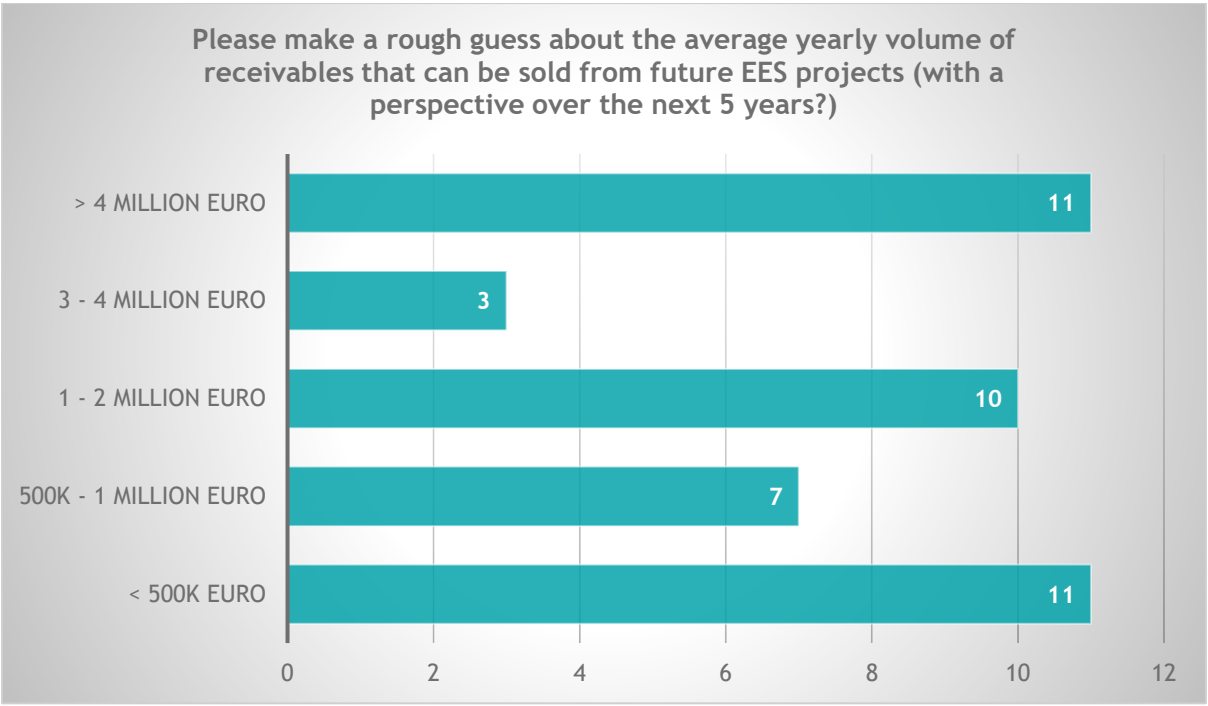

Figure 4: Possible amount of receivables that could be sold from future EES projects

4 GENERIC CONCEPTS AND TOOLS

4.1 Generic concepts

Through expert interviews, case study analysis, and extensive research, the project team has developed a comprehensive concept for various types of refinancing schemes. The market review and case study analysis have revealed their potential in different applications, which are reflected in their unique design features.

This chapter builds upon the premise and the distinguishing features of refinancing schemes which are:

- Client Sectors
- Type and amount of investments
- Possible collateralisation of receivables
- Approach chosen to handle performance risks
- Client collection payment responsibility
- Ensuring off-balance financing from client's perspective
- Ensuring non-public-debt financing for public clients
- Organisational set-up

Following from this we identified logical combinations of these features and derived generic refinancing schemes that can be effectively applied in specific fields. To categorize these schemes, we created a matrix that encompasses two dimensions: client sector and type of investment. Each intersection point within the matrix represents a specific application that necessitates a refinancing scheme tailored to its requirements.

Comprehensive information and a deeper insight into the topic are provided in the REFINE-report "Generic Concepts of Refinancing Schemes for Energy Efficiency Services" and the accompanying eBook. These resources can be accessed through the REFINE website.

Type of investment / Client sector	Comprehensive refurbishment	EEI measures	ESC
Residential buildings (MFH)	A1	(B1)*	C1
Public buildings / facilities	A2	B2	C2
Commercial buildings	A3	B3	C3
SMEs/industry	(A4)*	B4	C4

* The schemes in brackets refer to boxes in the matrix which have comparably little relevance for EES business

Table 1: Basic categorisation matrix for refinancing schemes

4.2 Standardized contract stipulations

Overview

The consortium created a standardised set of stipulations that, if incorporated into the EES contracts, will increase the chance of a project being refinanced by a financial institution after it has been implemented. These **stipulations are not intended to be contractual clauses**, since each European country has its own legal system, instead they are meant to recommend concepts to be incorporated into EES contracts signed between the EES provider and the customer.

Furthermore, the proposed stipulations do not capture all the peculiarities of the different kinds of EES which are offered on the European market, and which are reflected in specific contractual details. Instead, in formulating standardized contract stipulations, one assumes an ideal-typical energy performance contracting project, while in explanatory remarks differences that may arise for other forms of EES are discussed.

In providing standardized contractual stipulations, we can distinguish between two stipulation types in any refinancing arrangement:

- Stipulations whose incorporation would be advisable in contracts for energy efficiency projects (e.g., residential buildings, public buildings, public lightning, factories, etc.) in order to facilitate subsequent refinancing by a traditional banking institution.
- Stipulations whose incorporation would be advisable in refinancing contracts signed by financial institutions EES providers.

The stipulations proposed are based on the minimum conditions for energy performance contracts established in Directive 2012/27/EU. Furthermore, the European Code of Conduct for Energy Performance Contracts, concerning the values and principles that are deemed fundamental for the successful and transparent preparation and implementation of EES projects in European countries, has also been considered.

Finally, for each of the stipulations proposed for the EES and refinancing contracts, a distinction has been made between the:

- **Must-have-stipulations** are deemed indispensable in order for the EES contract to be refinanced at a later date. Should they not be included, the chances of the operation not being refinanced at a later stage are high.
- **Nice-to-have-stipulations** that, if included in the EES contract or the refinancing contract would increase the chances of it being refinanced at a later date, but if they were not included it would not lower the probability of the refinancing operation taking place.
- **The consortium created a checklist which is available on the project website**. Its aim is that it should support stakeholder in setting up EES contacts which are refinanceable. More detailed information on contract stipulations can be found in the report on standardized contract stipulations for refinancing of energy efficiency services on the project website.

4.3 EES contract stipulations

The provisions that relate to EES contracts are grouped the following way:

1. Object, duration, and conditions of the contract		1.1. Object of the contract
		1.2. Duration of the contract
2. Energy efficiency measures and results		2.1. Energy efficiency measures
		2.2. Equipment / Installation
		2.3. Energy efficiency results
		2.4. Continuous improvement
3. Key steps to implementing the proposed measures and associated costs		
4. Measuring savings		
5. Financial implications of the project and the distribution of savings		Distribution of savings
		Project financing
6. Key reference dates and milestones		
7. Provider's and customer's obligations	7.1. EES provider obligations	7.1.1. Operation & maintenance
		7.1.2. Design, construction, installation & performance
	7.2. Client Obligations	7.2.1. Payments
		7.2.2. Access to equipment location
		7.2.3. Secure property or rental property
		7.2.4. Protection & care
		7.2.5. Operation & manipulation
8. Savings, quality controls and guarantees		8.1. Savings
		8.2. Quality controls
		8.3. Guarantees of project operation
		8.4. Public warranties
9. Contracts with third parties		9.1. Preliminary audits
		9.2. Transfer of rights and obligations
		9.3. Waiver of objection to payment rights cession
		9.4. Third party insurance
10. Penalties for non-compliance		10.1. Force majeure and liability exemptions
		10.2. Dispute resolution procedure
		10.3. Exemption if service provider changes.
11. Modifications of the framework conditions affecting the terms and conditions of the contract		
12. Changes made throughout the project		12.1. Design rectifications
		12.2. Early termination

Table 2: EES contract provisions

4.4 Refinancing contract stipulations

The provisions that relate to refinancing contracts are grouped the following way:

1. Credit Cession	1.1. Legitimate and not otherwise compromised
	1.2. Correspondence
2. Client payment due date	
3. Duration	
4. Non-recourse	
5. EES provider´s liability for underperformance	
6. Purchase price	
7. Title to equipment / facilities	
8. Default interest rate	
9. Financial Information	
10. Environmental information	
11. Contract resolution	
12. Step in rights	
13. Assignment of emission savings	

Table 3: Refinancing contract provisions

4.5 Risks of EES projects and rating system

In the context of the REFINE project, the credit rating is seen as a summary appraisal of the **refinanceability of EES projects**.

The aim of such a rating system for quick risk evaluations of EES projects is to supports the process of mainstreaming refinancing schemes. This is because financial institutions dedicate substantial resources to assessing the risk of possible investments, and thus require suitable tools to implement this task.

As EES investments are not yet considered as common or typical investments, risk evaluations of EES projects are even more demanding. Rigid risk evaluation of EES projects can be attributed to the overall lack of standardised documentation and contractual agreements. Therefore, the REFINE consortium decided to use a methodology which takes into account the perspectives of both the financial institutions and the EES providers, thereby lowering due diligence costs and facilitating the approval process.

Given the complexity and the number of parties involved it is necessary to assess the risks of refinancing EES projects through a multi-stage process which must be fully standardised in order to keep the cost of due diligence low. In general, two layers of risks can be identified with respect to the refinancing of EES projects:

1. The technical risk (performance risks): If the refinancing model is well established, the full technical risk – including the risk related to the actual generation of cash-flow through energy savings – remains with the EES provider. For example, for EPC the EES provider fully compensates for cash flow gaps due to non-achievement of

energy savings. A form of guarantee may be required if the EES provider is new to the market or does not provide a high number of successful projects.

2. The financial risk is carried by the refinancing institution and is assessed depending on the client's creditworthiness. The financial risk of the EES client is not directly linked to the technical risk of the specific project. Therefore, financial risks can still be evaluated as high, even though the EES project is perfectly implemented and generates the expected cash flows. The assessment of the financial risks is a basic requirement and a default process in the financial sector. Financial institutions are best equipped to evaluate and carry these risks.

In the context of refinancing of EES projects, the following risk factors were identified:

- **EES provider risks:** These consist of credit and operational risk. The evaluation of both risk categories can be done by traditional bank risk rating approaches.
- **Client risks:** These consist of credit, contractual, and legal risk. The evaluation of these risk categories can be done by traditional bank risk rating approaches.
- **EES project risks:** These include risks during project preparation & execution phases, operation and maintenance risks, performance, regulatory, country, and energy price risk. From a financial institutions perspective, the project evaluation process must easily identify and evaluate the risks that transfer to the refinancing institution, whereas the risks that remain with the EES provider are of less importance.
- **Project refinanceability risk:** These risks are related to the preparedness of contractual stipulations for the refinanceability of an EES project. The most important risk mitigant in this case is the use of standardised contract stipulations.

In order to create a suitable risk assessment tool for the refinancing of EES projects the afore-mentioned risk elements were categorised into **three different risk layers** from a payment default perspective. These risk layers are also used as the main structure of the rating template available as an Excel-file.[1] Here are the different risk layers:

- **L1. Standard Financial Institution Default Risk Evaluation:** This layer refers to the daily traditional default probability evaluation of any financing operation being analysed by a financial institution. This layer includes risks such as credit risk, operational risk, legal risk, contractual risk, fraud risk, country risk, etc.
- **L2. Energy Efficiency Service Project Risk Evaluation:** This layer refers to the specific risks and mitigants associated with a project that has the goal of providing the client with energy savings, thereby leading to a cash surplus that will i be used to repay the investment associated with the project.
- **L3. Contractual Preparedness Risk Evaluation:** This layer refers to the risk that may arise from the absence of recommended standard EES contract stipulations on a project that is being refinanced. The recommended EES contract stipulations relate closely to the risk items in L2.

In general, L1 and L3 are the risk evaluation layers that have to be satisfied in order to enable the refinancing of an EES project. L1 describes the first and general default evaluation level of financial institutions, which borrowers have to pass. If an EES client does not manage to pass L1, because the financial risk is evaluated as too high, then the refinancing process of the EES project will usually not proceed.

[1] The Excel-file with the rating system template is availabe on the REFINE-website https://refineproject.eu/

The risk assessment in L3 ensures the sufficient split between technical and financial risks as defined in the EES contract and in the refinancing contract. The recommended standard EES contract stipulations[2] seek to ensure that ultimately only the financial risks lie with the financial institutions, and the technical risks remain with the EES provider. The inclusion of the "Must-have" contract stipulation ensures that the project is refinanceable by a financial institution, from the contractual point of view.

The quality of the EES project (L2) adds information to decide on the interest rate. In particular, L2 gains importance when the credit risk of the EES client is evaluated as medium risky. In this case a positive evaluation of the project in L2 can increase the likelihood of refinancing.

The following figure 5 summarises the inter-related risk layers as described above.

Figure 5: Overview of the risk layers related to refinancing EES projects

Following the above considerations, the consortium developed a specific rating system that helps to assess the refinanceability of EES projects which is directly applicable for the evaluation of EES projects.

4.6 Analysis of guarantee instruments

Within the project the consortium analysed the role that various guarantee instruments may play in facilitating the **EES business in general,** and the **application of refinancing schemes for EES projects in particular**. Seen from the perspective of refinancing schemes, existing guarantee schemes are not automatically useful for covering risks of forfeited receivables derived from EES projects. Therefore, the partners developed a generic approach about possible options for structuring guarantees to support the refinancing of investments in EES projects.

The consortium started with the assessments of the guarantee instruments and in particular highlighting the difference between two forms of risks: **performance risks** and **credit risks**. Emphasizing and differentiating the various forms of risk proved to be crucial for the consortium's communication with stakeholders. Moreover, analysing these distinct risk forms has provided a solid foundation for assessing guarantee instruments.

[2] More details and additional explanations of the required contract stipulations for EES as well as for refinancing contracts can be found in the guidelines entitled "Standardised Contract Stipulations for Refinancing of Energy Efficiency Services" which is acessible at the REFINE-website: https://refineproject.eu.

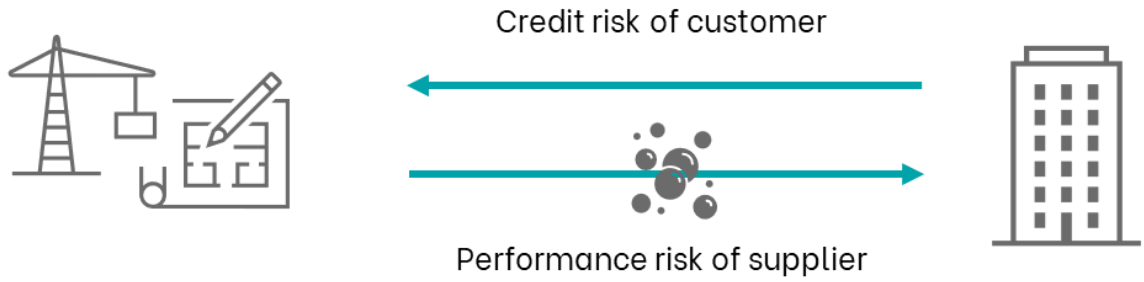

Figure 6: Explanation of credit risks and performance risks in EES projects

In general, credit risks are dependent on the creditworthiness of the customer – if the credit rating of a counterpart is high, then this risk is low. To cover the credit risks of customers, a commercial credit insurance can be acquired, if such insurance is available with appropriate terms, usually up to three years. The availability and cost of the insurance premium are dependent on the credit standing of the counterpart.

For lower credit ratings and for longer payment terms, guarantees by third parties often public guarantees are necessary. These guarantors reduce counterparty credit risk, for industry with smaller projects and for SME involvement, this also applies in the residential sector for residents with lower incomes.

Performance risks are dependent on the physical and operational quality of assets and processes in an EES project, which are under the control of the owner of those assets. Customers and financial investors expect these risks to be borne by the EES providers. Usually, performance risks are mitigated and managed by contractual warranties, and performance guarantees issued by equipment suppliers, who are ultimately also depending on the creditworthiness of the suppliers or EES providers. Insurance solutions like property insurance, business interruption insurance, and equipment breakdown insurance may be added. For some components like LEDs or PV panels insurance policies can be bought to cover all technical performance risks; insurance solutions for other EES contracts might also be available under certain conditions.

To avoid performance risks altogether, a third-party guarantee will cover performance promises of suppliers. Moreover, EES providers could provide additional comfort to financial investors and eventually also to public sector asset owners. An **unconditional third-party payment guarantee** would cover both risk types, as it could be called upon whenever a payment becomes overdue, irrespective of the reason for non-payment.

Credit risks and performance risks are embedded in the receivables purchased by forfeiting scheme investors. The distribution of those risks is defined in the contractual terms of the EES contract. Standardised technical and financial project assessment and standardized contract terms are necessary to enable quick and low-cost risk assessments by financial investors. If the customer does not enjoy a strong credit rating, the credit risk has to be covered by credit insurance or by guarantees of third parties with high credit ratings (banks or state-backed institutions). Credit risk coverage is at the same time a prerequisite for securitization.

- Furthermore, through our analysis from a public policy perspective, we have arrived at the conclusion that it is most advantageous to offer public guarantees for the following reasons: The main and well-acknowledged reason for public guarantees for long-term investment loans in the manufacturing sector is market failure and to thereby give SMEs equal access to financing. Thus, such guarantee instruments are

established in most member states and supported by guarantee facilities provided by EIB and EIF. This type of guarantee is available for EEI investments in the manufacturing sector in many countries.

- For the housing sector, either state-backed loan facilities or Public Guarantees for long-term loans are mostly motivated by the goal of offering housing also to less creditworthy individuals or families, thereby acting as instruments of social policy considerations.
- The reason for providing state-backed guarantees for financing and refinancing EEI investments can be justified differently. Their objective would be to speed up CO_2 reduction in the buildings and industrial sector, thereby contributing to climate policy objectives. In this regard, such guarantees are pursuing objectives comparable to long-established export guarantees, where the main advantages are benefits for economic growth and employment policy. At the same time, it can be shown that such guarantees are particularly effective for SMEs to help them to grow exports much faster.[3] The long-standing experience with export guarantees can be used to help structure EEI investment-related guarantees.

As a next step, the REFINE team analysed the suitability of existing guarantee types. Loan guarantees play a significant role in supporting long-term investments for both companies and homeowners, particularly in the housing sector. State-backed housing loan programs often include an "implicit guarantee" to assist debtors who wouldn't qualify for commercial loans. These guarantees typically come into effect when the debtor becomes insolvent, covering around 80% of the loan amount to incentivize the guaranteed bank to manage the loan exposure proactively. While this type of guarantee protects creditors from potential asset value losses and facilitates asset-based financing, it is insufficient for meeting the ambitious goals of building renovations and large-scale decarbonization in industrial processes.

In the context of refinancing energy efficiency and securitization-backed forfeiting schemes, traditional credit guarantees are not suitable. Loan guarantees typically cover loan repayments made by the debtor, but in forfeiting, the credit risk is transferred to a financial investor who purchases future receivables without granting a loan. Export guarantee systems in many member states offer guarantees that can be invoked in case of payment arrears, protecting suppliers against customer payment defaults. However, these guarantees are not unconditional and only provide coverage for the actual damage suffered, acting as a form of "loss insurance."

Consequently, the most ideal guarantee for refinancing energy efficiency investments through forfeiting receivables would be an unconditional bank guarantee that covers scheduled payments precisely when due. Such a guarantee would offer comprehensive protection against customer payment defaults and better address the needs of financial investors. In summary, while loan guarantees are beneficial for asset owners and working capital loans in energy efficiency projects, they are not suitable for refinancing investments. Export guarantees can cover payment risks but may not fully protect financial investors. An unconditional bank guarantee aligns more closely with the requirements of refinancing energy efficiency investments through forfeiting receivables.

Three options for guarantees to support financing of EES projects were presented in more detail:

[3] https://voxeu.org/article/effects-export-credit-guarantees-firm-performance

- Option 1: Guarantees loans for asset owners (model investment loan guarantee)
- Option 2: Loss insurance for client payments (model export guarantee)
- Option 3: Unconditional payment guarantee (model bank guarantee on first demand)

The detailed analysis of can be found in the report "Analysis of guarantee instruments for EES projects" on the project website.

Following this analysis, we came to the conclusion that he best protection for financial investors purchasing receivables against the risk of payment default by the customer, would be an **unconditional payment guarantee** on scheduled payments by the customer. Such a payment guarantee would even protect the financial investor against the case that payment is not made by the customer because of the energy/ energy savings supplier non-performance.

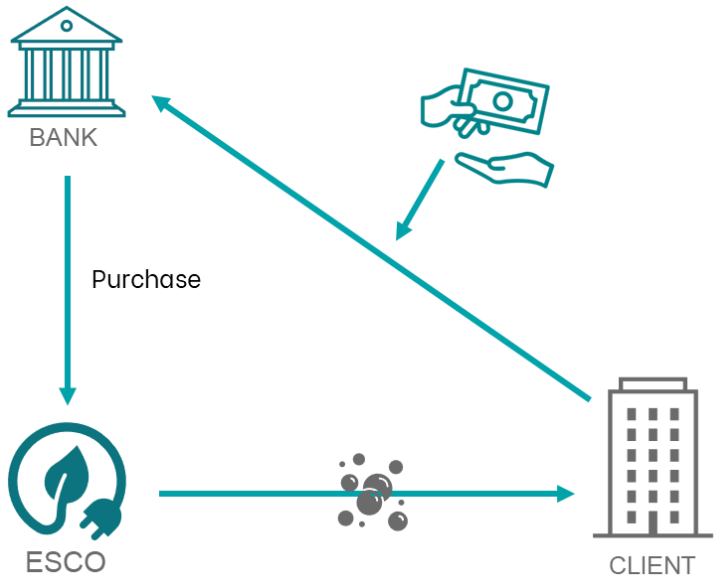

Figure 7: Schematic representation of an unconditional payment guarantee in an EES project

The financial risk of an investor acquiring receivables is payment on time whenever it becomes due. Guarantees covering this risk can facilitate capital-market based refinancing schemes for EEI investments if they are:

- Unconditional
- Assignable
- Callable when the payment becomes due.

The "ideal" guarantee for refinancing EEI investments via forfeiting receivables, would be an unconditional bank guarantee which covers the fixed scheduled payment amount when due.

Unconditional payment guarantees are usually not provided directly by public guarantee schemes. But if a public loss insurance according to "Option 2" is available, a payment guarantee by a private bank can be structured using the loss insurance as a credit risk backstop. When refinancing by selling the receivables to financial investors is secured, a public loan guarantee (Option 1) will be easily available on a working capital loan to the supplier or the EES provider for financing the construction phase.

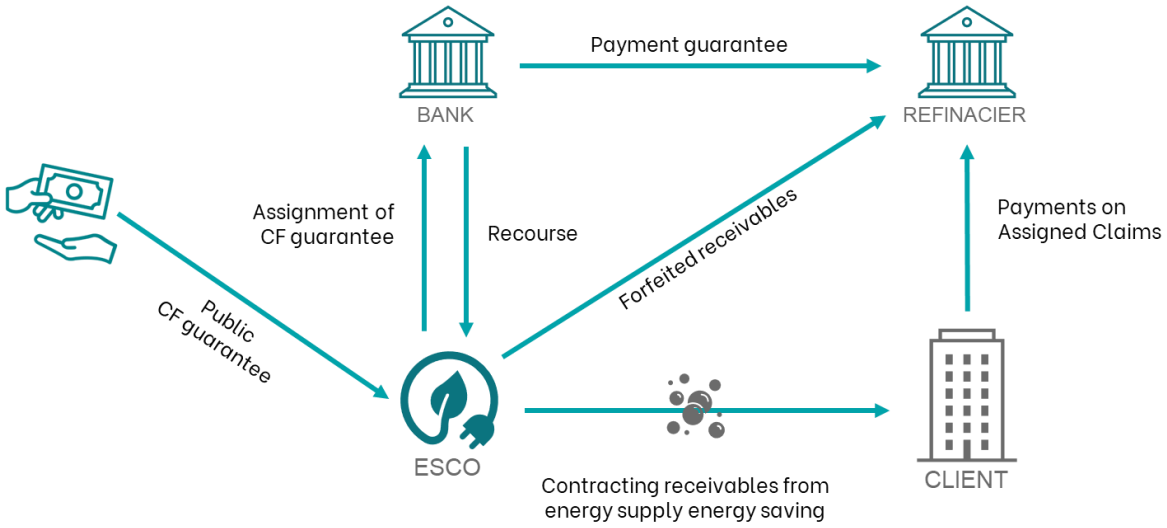

Figure 8: Combination of private and public guarantees facilitating forfaiting in EES projects

The diagram above shows the steps and the structure of an approach which combines private and public guarantees:

1. The EES provider applies to the public guarantee agency for a guarantee for a working capital loan by its bank. The loan is used to finance the EE investment and to fulfil the investment obligation of the EES provider in the EES contract with the customer.
2. After installation, the EE investment is tested for compliance with the performance promise in the EES contract and commissioned by the customer. The customer starts the payments for the delivered energy or energy savings.
3. The EES provider applies for a cash shortfall guarantee at the public guarantee agency, and asks his bank to provide a payment guarantee to the financial investor who is offering to purchase the receivables against the customer. As a security for the payment guarantee, the EES provider assigns the cash shortfall guarantee to the bank.
4. The purchase price for the receivables is used by the EES provider to repay the working capital loan (refinancing) to his bank. The loan guarantee is either cancelled accordingly or may be utilized for another working capital loan on a revolving basis.
5. If the payment guarantee by the bank is called, the guarantee payment can be recovered from the public cash shortfall guarantee. Based on the guarantee contract between the EES provider and the bank, the bank has recourse against the EES provider for all amounts which are not recovered from the public guarantee.

In this structure, the public guarantee would cover the fundamental risk of a loss for the supplier by a payment default of the customer with 80% of this risk. Based on this guarantee backstop, by assigning the guarantee claims from the EES provider to the Bank, the Bank would fully cover (100%) the liquidity risk of pre-financing the payment default by the customer and would have recourse against the EES provider for the 20% deductible, and for possibly lower payments by the public guarantor because of cost savings. All obligations concerning reporting, monitoring etc. would remain with the EES provider as the original beneficiary of the public guarantee.

A part of the risk (corresponding to the risk which is not covered by the guarantee quota) will remain with the EES provider. Therefore, the structured guarantee approach will require EES providers with sound creditworthiness and equity endowment.

4.7 Business models for facilitation services

Facilitation services are a variety of services in the environment of a refinancing operation which act as a catalyst but without going into the core of the operation. These services can differ across the different stages of the refinancing process and the nature and the degree of connection with the refinancing operation. The provider of these services is called EES facilitator or FS (Facilitation Services) Provider.

As there are a wide range of services that could potentially be classified as facilitation services, a distinction between two types of facilitation services was deemed appropriate:

- **Core brokerage services**: those services that are essential for the realization of the refinancing operation.
- **Neighbouring facilitation services**: those services which are connected to the refinancing operation but not essential to the success of the operation

In any case, due to the differences among the national EES markets, and due to the variety of EES project typologies, many specific facilitation services could be identified for particular markets or even specific projects.

Nevertheless, through a collaborative deliberation process and after several feedback loops among REFINE partners and experts from the financial and EES sector, it was possible to identify some facilitation services that could be considered as mainstream due to their added value or adaptability to many types of projects.

The consolidated facilitation services are provided in the table below:

Stage of the process	Description	Type of service
Market Development	During the pre-financing stage, facilitation services help to dynamize the market promoting the use of EPC as a financing service. Both financers and IEE services are often looking for good opportunities and they could benefit from matchmaking support and related activities.	Neighbouring
Project appraisal	A refinancing operation starts often with a project appraisal. This document must include: • Introduction of the business opportunity and overall context of the operation in its sector • Operation and financial structuring: Alignment of interests between parties, determining the volume to be refinanced, expected revenues and timeline, CAPEX and OPEX, compatibility with public subsidies if available.	Neighbouring

	• Timing and status: how much has been executed and which is the volume left for refinancing) • Client's profile: who is the beneficiary of the refinancing. • Contractor's profile: who is selling the project	
Search for refinancers	Facilitation services can help to identify potential buyers (refinancers) and contribute to the overall alignment of their interests with the client's refinancing needs. This phase, if successful can end with the signature of a Non- Disclosure Agreement (NDA).	Core
Estimation of the operation returns	A profitability calculation model will be needed for its distribution among potential buyers and price negotiation. This model will include (at least) the expected revenues, costs, and IRR at least. Guarantees can be added to the model.	Neighbouring
Due diligence during the refinanceability check	Due diligence of the project is crucial in the refinancing process. Normally banks will perform their own risk assessment on the client, but facilitation can be useful to understand the risks of the project. Depending on the circumstances, a due diligence of the contractor might be also requested. It can also include the eligibility of the project based on EU Taxonomy. [4]	Core
Verification of energy savings	The success of most projects involving EES services is centred on achieving long-term, stable energy savings that will enable the client to make the periodic payments associated with the debt generated by the project. Often the financial institution does not have the capacity to verify the savings, and if it is done by the ESCO that has carried out the project, there may be a conflict of interest. An independent company (which could be another ESCO) could carry out this verification prior to the refinancing process or on a regular basis. Reducing the risks perceived by the refinancing institution.	Neighbouring
Concluding the operation	Standardized contracts offered by facilitators can help in the final stage of the refinancing operation. The operation concludes with the contract elaboration and its signature.	Neighbouring

Table 4: Identification of facilitation services

[4] The EU taxonomy is a classification system, establishing a list of environmentally sustainable economic activities. Further information on EU Taxonomy, please consult https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en

The long-term objective of these facilitation services is to expand the refinancing market, but this does not mean that refinancing cannot succeed without them. In fact, in some cases, the more mature an EES market is, the less it may be necessary to provide some of the services identified.

The work of this task was not limited to the identification and description of facilitation services. The objective was to go deeper into defining their business models.

For this purpose, two methods were used, firstly the Lean Canvas Model to study the most important aspects of the implementation of the business models (the problem, the customer groups, the solution provided, the added value and how it differentiates from competitors, etc.) Two different Lean Canvas Models were developed, one oriented to FIs and the other to EES providers.

The second methodology applied was the Value Stream Model, which is well suited to represent highly innovative business models and whose main characteristic is the possibility to clearly define the nature and direction of the relationships of the stakeholders in the business model. It also allows the business model environment to be segmented according to its connection with the core of the operation.

This technique was used, for example, for the facilitation service "**Search for refinancers**".

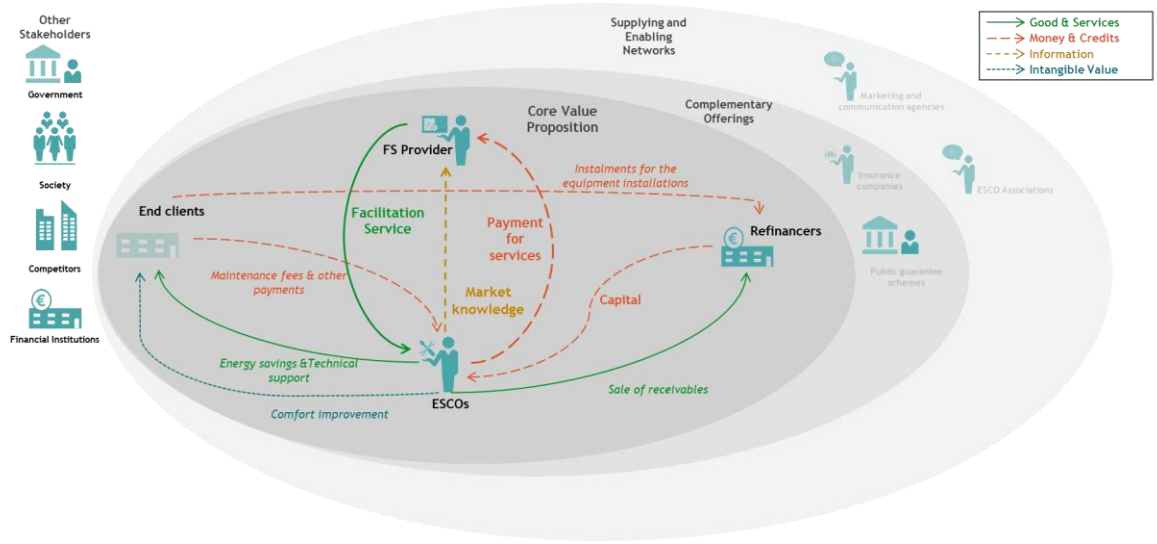

Figure 9: Value Stream Model for the facilitation service "Search for refinancers"

In the refinancing market, the fragmentation of the sector and the lack of connection between ESCOs and refinancers was identified as a major barrier. Therefore, a service that consists of intermediating between both actors and generating the necessary connections for a refinancing process to be successful has been identified as a core service. In the case of "Search for refinancers", the service is provided to the ESCO, which has been identified as the main interested party in processes of this kind.

This second facilitation service which was assessed by the Value Steam Model is the **"Due diligence during the refinanceability check"**. It has the same actors as the previous one, being the main difference for whom the service is provided. In this case, it is the refinancing institution that requests a Due Diligence service from a facilitation company expert in the energy efficiency market.

This service consists in carrying out an investigation, audit, or review in order to provide input for the decision on refinancing. This service is commissioned by the refinancing institution to obtain an objective assessment of the potential refinancing operation.

5 EXPLORATION OF SELECTED PILOT APPLICATIONS: INSIGHTS AND FINDINGS

The research and implementation of the pilot applications was one of the final stages of the REFINE project. In this process the aim was not only to apply the knowledge and contents developed in REFINE, but also to get feedback from the companies involved in order to improve and further shape the developed contents.

The objectives initially set for this process have been largely met, both quantitatively and qualitatively. In terms of quantitative objectives, the indicators set for this phase have been exceeded by more than two times, with 43 different pilot processes successfully completed.

Qualitatively, the engaged stakeholders came from a wide range of organisations (FIs, ESCOs, facilitators, public bodies, associations etc.), and so conclusions have been drawn from a variety (often opposed) points of view. This intensive bilateral work with a wide range of organisations has provided a clear picture not only of the state of the EES services sector across Europe, but also of how work of REFINE can help to stimulate and unleash the potential of this sector.

In the section below a selection of only three pilot projects will be presented which led to some of the most innovative and interesting associated insights and findings.

<table>
<tr><th colspan="4">Psychiatric Hospitals Bohnice & Kosmonosy</th></tr>
<tr><td colspan="4">Pilot details and tested areas</td></tr>
<tr><td>Country</td><td>EES Provider</td><td>Client type</td><td>Tested areas</td></tr>
<tr><td>Czech Republic</td><td>Veolia Energie ČR
D-energy
ENETIQA</td><td>Public organisation</td><td>• Refinancing instruments
• Contract stipulations</td></tr>
<tr><td colspan="4">Presentation</td></tr>
<tr><td colspan="4">In the Czech Republic, there were psychiatric hospitals that were to be energy retrofitted through an ESCO contract, for them a specific scheme was developed.. All participants in this project were very interested in participating in the designed scheme, as it allowed them to execute a highly innovative operation, refinancing an EPC project, while the client receives subsidies and the ESCO is pre-paid to mitigate the impact of rising interest rates.</td></tr>
<tr><td colspan="4">Process followed and solution</td></tr>
<tr><td colspan="4">REFINANCING INSTRUMENTS
The test application test a new model of refinancing EPC projects at the sites operated by contributory organization Psychiatric Hospital Bohnice and Kosmonosy. Features of the refinancing model are the following:
• Financing of the EES project includes subsidy, thus the set of EEI measures must fulfil the requirement of 30% energy savings to be eligible for the subsidy program. There are two financial flows – firstly, the State Environmental Fund (SEF) provides subsidy to the EPC client and secondly, later, the EPC client pays the same financial amount to the EPC provider.
• Supplier credit, which will be later refinanced was limited by maximum threshold.
• Own resources of the client were also used.
In the Czech Republic, the EPC provider (ESCO) typically sells receivables to the bank after the implementation of the energy saving measures, and thus obtain funding for other projects. Until recently, sale of receivables was not allowed for EPC projects that used subsidies from the Operational Programme Environment (OPE) operated by the State</td></tr>
</table>

Environmental Fund (SEF). The reason was that the subsidy programme, which always financed only part of the contract, strictly required that the remaining part of the project costs be reimbursed within 10 days after the subsidy was provided. At the same time, each payment had to be supported by a bank statement proving that the client had paid the amount from its bank account directly to the account of the provider. However, this was not possible in the case of the sale of receivables, because in such a case the provider would receive the payment for receivables from the bank, not from the client.
Therefore, the effort was made to find a way to meet the requirements of the subsidy programme and at the same time allow refinancing so that the EPC provider can eliminate the long-term debt burden. After complex negotiations, a **tripartite agreement** was proposed, which replaced the required proof of reimbursement of the cost by the client. The agreement obliges the bank, the provider and the client to take a common procedure in the form of preparing the sale of receivables before receiving the subsidy and transferring funds to the provider no later than 10 days after receiving the subsidy.
During the process of pilot project implementation, adjustments to the concept had been negotiated with SEF to enable implementation of the EPCs subsidized from OPE and to increase the economic viability of the projects. SEF enabled **to adjust the set of EEI measures and reallocate the subsidy amount** after procurement procedure. This is a necessary precondition as during EPC procurement via competitive procedure with negotiation the set of EEI measures and thus costs of measures change during the process. Key economic parameters in tender documentation have to be adjusted accordingly during procurement process.
CONTRACTUAL STIPULATIONS
The goal was to amend guidelines of the OPE subsidy program operated by the State Environmental Fund (SEF), so the standard EPC projects may be combined with OPE subsidies. Importantly, this means EPC provider will be able to meet the requirements while selling receivables to a bank after the implementation of the energy saving measures. Also, the aim was also to allow for certain changes in the set of EPC measures after submission of the subsidy application as such changes usually occur during the competitive procedure with negotiation used to select an EPC provider.
When applying for the subsidy payment, the Rules for applicants and beneficiaries of support in the Operational Programme Environment for the period 2021-2027 require the beneficiary to provide the following:

- proof of the payment;
- an approved and signed “EPC Application”;
- the relevant invoices and their possible partial payment;
- a Tripartite Agreement between the provider, the bank and the beneficiary, where the exact amount of the assigned receivables will be specified; Tripartite Agreement may also be replaced by two contracts (provider x bank + provider x beneficiary), with the same legal impact as in the case of the Tripatite Agreement;
- a bank statement proving the payment of the assigned receivable by the bank to the provider.

The new stipulations in the Guidelines allow that the Tripartite Agreement between the client, ESCO and financial institution replaces the proof of reimbursement of the cost by the client required by SEF.
The new table added to the Guidelines provide calculation of changes in budgets between submission of subsidy application and the final set of EEI measures of the EPC project. Changes have to be reflected in an amendment to the EPC contract.
SEVEn has also created a methodology approved by SEF on how the allocated subsidy funds can be rolled over from one measure to another.

Country specific conclusions

The pilot applications in the Psychiatric Hospital Bohnice and Kosmonosy has shown that the refinancing concept is applicable for the comprehensive renovations of buildings in the Czech Republic, which combine EPC with subsidies from OPE. Adjustments are being

included in the OPE rules, making it more accessible for EPC projects. The following conclusions can be extracted from these experiences:

- Months of negotiations were needed to amend the SEF public scheme rules so the receivables from EPC projects subsidised may be sold to banks. In particular, the following barriers were removed:
  - A tripartite agreement among the ESCO, the private bank and the client replaced the proof of cost reimbursement claimed by the ESCO to the client that SEF usually requests.
  - A change on the selected EEI measures with respect to the original plan foreseen at the subsidy application. Although SEF grants the subsidy based on the original proposal, certain degree of flexibility for reallocating the funds to different EEI measures was allowed.
  - The early payment to the ESCOs was introduced as an optional feature catered to bridge the up-front financial gap and to mitigate the impact of inflation.
- The success of this adjusted refinancing scheme brought positive results for the EES market, namely:
  - Growing interest among providers -- currently there are more than 20 most of 20 EPCs in preparation and most of them are combined with subsidies.
  - Growing interest among potential clients as it is possible to obtain subsidies for EPCs.
  - The average size of the EPCs multiplied by four from 1 to 2 mil. € to 4-8 mil. €.

General lessons learnt

- Combining EPC with subsidies enables **combining technology measures and construction measures** in **deep renovation** projects – otherwise would be possible only with a large proportion of the client's own resources.
- Sale of receivables allow SMEs as EPC providers to implement combinations with subsidies (not just large companies).

Czech case provides an example of **procurement procedure** which ensures that inclusion of subsidies do not prevent the client to select the **economically optimal solution.**

Table 5: Pilot application - Psychiatric Hospitals Bohnice & Kosmonosy

Collaboration with the Solas Sustainable Energy Fund (SSEF)			
Pilot details and tested areas			
Country	EES Provider	Client type	Tested areas
Spain	Several	Financial Institution	• Refinancing instruments • Contract stipulations • Guarantee Instruments • Facilitation services

Presentation

Solas Capital is a financial services company based in Switzerland but operating throughout Europe, one of its main activities is to manage the Solas Sustainable Energy Fund (SSEF).

The SSEF has been created under the condition of only funding projects that strictly comply with the sustainability metrics promoted by the European Commission. For this reason, it has received 30M EUR from the EIB as a cornerstone investment. This investment is backed by the European Fund for Strategic Investments (EFSI), the main pillar of the Investment Plan for Europe. This institutional investment is provided.

The SSEF also participate in the Private Financing for Energy Efficiency (PF4EE), which is a joint initiative of the EIB and the European Commission to facilitate investment in energy efficiency, PF4EE support is structured around two pillars:

- The Risk Sharing Facility mitigates partner banks' credit risk when financing EE projects. The risk protection covers 80% of losses from individual loans, up to a maximum agreed amount.
- The Expert Support Facility provides consultancy services to improve bank's knowledge of the energy efficiency market and support the financing of EE investments.

These guarantee schemes, although they force the fund to invest in underdeveloped segments or highly innovative projects, greatly reduces the perceived risks associated with these investments.

Process followed and solution

The analysis of the SSEF as a pilot application focused on several points:
First, it was examined whether the financial products offered by the fund can be considered refinancing and depending on what factors.
Next, the impact of the European guarantee schemes that the fund enjoys is studied, and how this impacts on its approach to financing ESCOs.
Another of the contents studied consists of reviewing the contract model for the long-term financing of ESCOs that was developed by Creara for the SSEF.

Country specific conclusions

- SSEF is offering a financial product in the Spanish ESCO market that in many cases can be considered refinancing and is proving to be very attractive for ESCOs
- The Spanish ESCO sector has shown itself to be very receptive to this financial product. The main reasons are its flexibility and its specific focus on the energy services sector, unlike commercial banks and other traditional financial partners

General lessons learnt

- The differences between the financial solutions offered by a fund backed by public guarantees and those offered by traditional FIs show the importance of public guarantee in helping to bridge the gap between ESCOs and FIs
- The importance of the facilitation services provided lies in the low penetration of refinancing in this sector, where a well-placed expert partner can bring a lot of value

Table 6: Pilot application - Collaboration with the Solas Sustainable Energy Fund (SSEF)

Office Building in Greece owned by a Greek public body

Pilot details and tested areas

Country	EES Provider	Client type	Tested areas
Greece	Not defined yet	Public	• Facilitation services

Presentation

The Centre for Renewable Energy Services, a public body governed by private Law, partner of the REFINE project offered its facilitation services. The client is planning to upgrade its HVAC installations of its central office building in the near future. The upgrade will consist of:

- The replacement of the diesel oil – fired boiler and air-cooled chiller with a newly designed high-efficiency geothermal heat pump for meeting the thermal and cooling needs of the building.

- The re-design and replacement of the existing supply and return piping of the HVAC installation.
- The re-design and replacement of the existing terminal units (Fan-Coil Units) of the building.
- The design and installation of a monitoring and control system for the new HVAC installation.

Process followed and solution

The Technical Services department of the client is interested in tendering this project as an Energy Services Contract in which the Energy Service Provider would finance this project with a guaranteed performance or shared savings Energy Performance Contract with refinancing clauses.
Although the client was initially very enthusiastic about implementing a project which would demonstrate both innovative, for the public sector in Greece, technologies (ground-cooled geothermal heat pump with remote monitoring and control, financing mechanisms (100% ESCO financing with a Tender for Energy Services) and refinancing mechanisms, it backed down before the launch of the Tender.

- The main reason for this withdrawal of interest was their hesitancy in trying something different that they were not familiar with.
- The project has been put on hold and is currently being re-evaluated by the Technical Services Department of the client.

General lessons learnt

- Similar projects in the market have very limited interest to market stakeholders as:
  - The relatively small budget and financial returns are of limited interest to large companies which have access to sources of financing.
  - Smaller companies or consortiums with interest for such projects do not have access to sources of financing (mainly due to the lack of guarantees for the financial risk) and they also usually cannot provide the necessary guarantees for the performance risk (i.e., lack of insurance or surety bonds).
  - There are currently no readily available re-financing services available.

Table 7: Pilot application - Office Building in Greece owned by a Greek public body

6 CAPACITY BUILDING AND TRAINING MATERIALS

6.1 Training materials

In order to effectively share the findings and tools developed in the REFINE project with stakeholders in the EES market, comprehensive training materials were created for the utilization during training events conducted by the project consortium. Furthermore, these materials were designed for wider dissemination of project results and findings through the e-learning centre, accessible on the REFINE project website.

The training materials encompass three slide decks, various e-learning modules, and concise instructional videos. The e-learning modules include brief videos that provide clear explanations of the key topics addressed within the REFINE project as well as eBooks that are available for distance training of interested stakeholders. These resources were carefully developed to ensure that the information is effectively conveyed to the target audience and facilitates their understanding and application of the project's outcomes.

The training materials and modules are designed in a manner that enables interested individuals to gain insights into the EES market, including its drivers, barriers, and the solutions developed as part of the project.

The first module explores the characteristics of the EES market and differentiate between various EES types, such as EPC (energy performance contracting) and ESC (energy supply contract). In this module, different stakeholders in EES market are identified and their roles further explained. Challenges in financing energy efficiency investments that differ from one stakeholder category to another are further elaborated. The first module also gives a short insight in business case of EPC and ESC models outlining main benefits for clients. At the end of module 1, refinancing concept is presented as a solution for overcoming barriers identified in financing energy efficiency investments.

Following the first module, where a general explanation of what exactly energy efficiency services was, a second module gives an insight into how to use refinancing instrument to finance those services. The second module recaps on the challenges of financing the energy efficiency investments and explains the refinancing model and its benefits. A brief overview of refinancing models in the EU, as well as the refinancing market assessment is also included in this module.

The third module focuses on presenting developed REFINE tools aimed at providing financial institutions and EES companies with tools that will encourage the use of refinancing mechanisms. These tools include a standardised set of stipulations, a rating system, and a set of facilitation services that, if adopted and/or incorporated in EES contracts, could expedite the refinancing process, and increase the chance of projects being refinanced by a financial institution after they have been implemented.

In general, the learning modules are ready-made materials that can be used by the banks, clients and EES providers in their internal training sessions, enabling the sustainability of REFINE results and know-how after the project ends. Modules are produced in English and each module has an accompanying document explaining the concepts described in that module in REFINE consortium languages.

6.2 Training events

The training sessions were designed to increase awareness about the benefits of refinancing schemes and their positive impact on the financial feasibility of EEI investments as well as to promote refinancing schemes and tools developed in the frame of the REFINE project.

Training events were implemented as physical and webinar sessions, with project partners being responsible for organizing and conducting four training sessions per country. The target groups included financial institutions and EES providers, with a focus on providing business development guidance for refinancing energy efficiency services and specialized training for their specialists. During the first phase of the REFINE project, project partners identified gaps in the national EES market preventing the implementation of EES projects as well as refinancing instruments. Within this task project partners worked on addressing those identified gaps and reducing disparities between clients, financial institutions and EES providers through training sessions.

The training sessions aimed to provide in-depth knowledge about EES projects, legal and technical regulations of EES projects, evaluating performance risks, and utilizing developed tools and services within the project as well as to create a common ground for financial institutions, EES providers, and other stakeholders. The topics covered included the EES market, examples of EES projects, financing options, risks in EES projects, and the concept and benefits of refinancing.

To support successful delivery of the training events, in a first work step each project partner developed a training plan. The training plan outlined the structure, target groups, format, topics, and potential collaborations for each training session. The plan enabled efficient organization and productive delivery of the training sessions. Most of the initial training plans were modified during the project based on the varying levels of interest from targeted stakeholders.

In relation to different market maturity in partnering countries and to different interests of stakeholders, set of following general topics for training events was identified:

- **EES market** – examples of EES in the project consortium, its specifics, how it differs from other markets, how is it usually financed, stakeholders, what are EES contracting options (EPC, ESC, its specifics, contracting parties), what are EES financing options (different options for financing EES, common barriers, risk coverage, legal and financial implications)
- **Refinancing** – what is it, its benefits, how can it be implemented, examples of refinancing in the project consortium, risk coverage, legal and financial implications, contractual stipulations which would allow refinancing.
- The rating system and guarantees models in the EES business

Also, to lay the groundwork for establishing a supportive refinancing environment in the EES market, especially amongst EES providers and financial institutions, the following key takeaways from training sessions were pinpointed:

Financial institutions (FI)	EES provider
▪ insight in EE projects ▪ insight in legal and technical regulations of EPC projects ▪ recognising main technical/performance risks ▪ how to properly evaluate performance risks ▪ how to use developed tools and services within WP3	▪ key advantages of refinancing ▪ required data for refinancing institutions ▪ insight into FI's perspective on EES projects and involved risks ▪ how to reduce/mitigate risks and structure projects to be more favourable for refinancing ▪ how to use developed tools and services within WP3

Table 8: Key takeaways from REFINE training sessions

The training events started in 2022 and continued until Q2 and Q3 of 2023. The project partners adapted their initial training plans based on the specific needs and interests of participants in each country. Bilateral in-house training events were mostly organized for financial institutions, while open multilateral workshops were organised for other stakeholders to facilitate discussions amongst different market players. Most training events were in physical or hybrid form to ensure active participation and engagement. Feedback from participants indicated satisfaction with the organized trainings.

Overall, project consortium successfully conducted training sessions to promote refinancing schemes and enhance the understanding and use of these schemes in the EES market. The project consortium exceeded its targets, reaching over 800 participants and engaging over 22 financial institutions in 44 different training events. The training materials and sessions provided valuable insights into EES projects, refinancing benefits, risk mitigation, and the promotion of new financial instruments to targeted audience. The project partners will continue disseminating and promoting the project's findings and tools to further support refinancing as a solution for EES providers.

7 KEY CONCLUSIONS AND INSIGHTS: COUNTRY-SPECIFIC AND EUROPE-WIDE LEARNINGS

The REFINE project has provided valuable insights and key takeaways related to improving the financing structures of EES projects based on refinancing approaches. In accompanying a large number of test cases, REFINE has uncovered several important insights that have the potential to shape the future of the use of refinancing in the EES business.

Overall, refinancing in the European EES market is a niche approach which is very successful in a few select contexts, but which is not broadly used across Europe. Although reasons vary among countries and sectors, some common conclusions can be drawn, these are that:

Current EES market conditions limit the need for refinancing

- There are a variety of financial services in the EES sector that are better established, have a longer proven history, and are sufficient to supply the sector with financing under current market conditions. Refinancing therefore often fails to replace these other options and establish itself in the market.
- The size of the EES sector, and its assumed development trends, do not justify in many countries, an effort by financial institutions to develop refinancing schemes. Despite the growing demand for sustainable financing and the desire to green loan portfolios, commercial banks remain cautious about adopting this business model. However, in certain countries, specialized funds can serve as a viable alternative and possess the necessary expertise in this domain.5
- The EES market is considered to be stagnant in most of the REFINE partner countries. If EES providers are not saturated with projects, cleaning up their balance sheet is not a priority. So, refinancing is also unlikely to be an option that will be pursued from the EES side.
- Moreover, in selected market segments exaggerating public funds (e.g., from the structural funds) “spoil” the EES market. In these market segments, refinancing is no longer interesting or necessary.
- In most EU countries, the EES market still focusses on the project types with low to medium capital-intensity. EES projects in connection with deep renovation will require capital-intensive investments which are still rather scarce.

In the future, we expect the importance of refinancing to increase

- Against the backdrop of increasingly challenging frameworks including, decarbonisation goals, ESG rules, energy saving and renovation targets according to the EED recast – deep renovation is gaining importance for public and private portfolio owners and managers. If EES providers discover deep renovation and decarbonisation projects as a market opportunity, the demand for financing sources in the EES business will significantly increase.

[5] Generally, the following funds offer refinancing solutions for the EES sector at the European level, however, with different focus areas and regions: SUSI Partners AG (www.susi-partners.com), Solas Capital AG (www.solas.capital), Funding for future (https://fcubed.eu). In the Czech republic CSOB Banka and other banks offer forfeiting for EES providers.

- When traditional loans are difficult to obtain, even if the underlying investment qualifies for a green loan, refinancing through forfaiting emerges as an appealing alternative because it can be largely standardised.
- Many European EES providers are SMEs with limited access to sources of financing for EPC and other kinds of capital-intensive projects. This financing gap can be largely filled by refinancing.
- There are other highly innovative types of energy services (for example: ESC with self-consumption PV, energy efficiency as a service, energy services related to decarbonisation of buildings or neighbourhoods, etc.) that are promising and interesting for financial institutions. Refinancing can help EES providers meet the funding needs of these energy services.
- In certain countries, the reliance on national and European subsidies appears to impede the acceptance of innovative financing approaches, like refinancing. However, in countries where refinancing is well-established, such as the Czech Republic, the combination of public programs that blend grant subsidies, from the EU or national sources, with private funds has demonstrated cost-effectiveness for deep renovation projects conducted through the Energy Performance Contracting (EPC) model. These projects offer guaranteed savings and are perceived as having lower risks. The Czech pilot projects also show that the refinancing of a deep renovation EPC projects are implementable. In the Czech Republic there exists a considerable pipeline of similar projects, but it is obvious that the success of this refinancing agreement can also be replicated in other EU countries.

Public guarantee schemes as game changers

The results of REFINE confirm that public guarantee schemes are a way to overcome many of the financing barriers in the EES sector, and to also close the gap between EES providers and refinancers. These guarantee schemes reduce the risks perceived by financial institutions, thereby helping them to finance or refinance innovative project types and to offer better financing conditions, while reducing the cost of risk assessment.

During the REFINE project, it was possible to analyse guarantee schemes of this kind promoted by the European Commission, for example:

- The Risk Sharing Facility mitigates partner financial institutions' credit risk when financing EE projects. The risk protection covers 80% of losses from individual loans, up to a maximum agreed amount.
- The Expert Support Facility provides consultancy services to improve financial institution's knowledge of the energy efficiency market and support the financing of EE investments.

These guarantee schemes, which can be complemented by cornerstone investments backed by the European Fund for Strategic Investments (EFSI), encourage the beneficiaries to invest in energy services or projects fully aligned with the decarbonisation and energy efficiency targets set by European policies.

The main advantage for the participating financial institutions is the coverage of losses in case of default by the invested company, which reduces the greatest risk perceived by financial institutions.

Having analysed these guarantee schemes, it was possible to verify their impact through interviews with EES providers that have received financing supported by these schemes. The interviewees have highlighted major differences with respect to traditional financing channels, in particular:

- Better financial conditions.
- Better knowledge of the EES market, which leads to flexibility and tailor-made solutions for each company.
- Long-term perspectives in the relationship between the EES provider and the refinancier.
- Reduction of risk assessment cost and duration, both for the EES provider and for the end-client.

The role of facilitation services

- Until refinancing schemes become fully mainstream in the EES business, facilitation services will play a major role, mainly related to technical due diligence and matchmaking.
- The financing of EES projects is a topic that must be integrated into a broader facilitation service, which is usually commissioned by the EES client. The test applications of REFINE show that the addition of clauses facilitating refinancing in energy service contracts is simple for EES providers, consequently it is generally accepted by clients and attractive for potential refinancers.
- Facilitation services should also be directed to potential EES clients in the form of training sessions, for example, when considering deep renovation and use of EPC in underdeveloped markets. These good practices provided in trainings will usually enhance the results of energy efficiency investments.

8 POLICY RECOMMENDATIONS

Although policy aspects were not in the focus of the REFINE project, some of its key learnings refer to the policy framework that is required to enhance the EES business across Europe, in general, and to facilitate the financing of EES projects, in particular.

So far, the individual EU member states have in place only selective policy instruments that specifically target the development of the EES market. Comprehensive policy roadmaps for the enhancement of EES are largely lacking, although the EED 2012/27/EU (amended as 2018/2002/EU) included a number of key policies which Member States should have implemented. As the latest EU assessment of energy performance contracting markets across Member States[6] shows well-known barriers to the broader adoption of EES continue to be effective:

- Lacking awareness and information of potential EES clients.
- Competence gaps at the client side and too few programmes for technical assistance
- Finance-related barriers, such as uncertainty regarding debt treatment, or lack of affordable financing for EES providers.
- Administrative burden and procurement barriers in the public sector.
- Subsidy allocation: In many Member States stakeholders observe that subsidy schemes, if not appropriately designed, represent a major barrier for the provision of energy services.

For this reason, Article 29 of EED recast from 2023, underlines the commitment of Member States to develop a policy framework that broadly supports the use of EES. This Article requires Member States to implement a number of mandatory policy measures that enhance the use of energy service by clients from all sectors, including:

- Effective information and dissemination measures ensuring easy access to information on energy service contracts, financial instruments, qualified and/or certified energy service providers, M&V methodologies, advisory bodies, and quality labels).
- Setting up and promoting advisory bodies and independent market intermediaries.
- Qualification, quality assurance and certification.
- Implementation of regular feasibility-checks by public bodies, whether energy efficiency or deep renovation projects could be implemented through EES.
- Development of specific model contracts for public bodies meeting the requirements of the Eurostat Guidance Note.

Furthermore, Article 30 of the EED recast requires MSs to create financing measures for energy efficiency investments available to all sectors. Funds specified in this Article cover three categories of financial measures: Energy Efficiency National Funds (EENFs); other financial measures; and de-risking tools, such as public guarantee facilities. Also, besides existing emission reduction targets at European and national levels, the EED recast introduces new targets for the public sector: Final energy consumption reduction targets according to Article 5 as well as renovation targets for the public building stock in Article 6.

[6] Moles-Grueso, S., Bertoldi, P., Boza-Kiss, B., (2023), Energy Performance Contracting in the EU – 2021-2022, JRC-Report, May 2023

Both targets will increase the pressure to increase the implementation rate, which can be seen as a change for more EES projects in the future.

When **transposing** the above-mentioned elements of the **EED recast**, Member States can draw on the **experience and lessons learned from the REFINE project** to design a consistent policy roadmap that specifically incentivizes public bodies and private companies to adopt EES approaches more often and more widely, especially when the inhouse implementation of energy efficiency or deep renovation measures is difficult or even impossible, for whatever reason. The main policy recommendations which can be derived from the three years' work in the REFINE-project can be summarized as follows:

- **Long-term planning instruments such as decarbonisation or sustainable energy plans**, which will have to get compulsory for public bodies according to Article 5(6) of the EED recast from 2023, should be also incentivized for private clients, mainly for those holding larger portfolios. In most cases, long-term plans will clearly show the financial and/or personnel limits of inhouse implementation, thus paving the way for EES approaches to close the implementation gap.
- In the context of long-term decarbonisation or sustainable energy plans, the use of **EES becomes an option for deep renovation and decarbonisation of the building stock** also, which currently is hardly the case. If public portfolio owners would increasingly tendered also these kinds of projects in the form of an EES approach, this would accelerate the transformation of the EES market towards higher investments, which would also increase the importance of suitable (re)financing approaches.
- With respect to the **model contracts**, which Member States are required to develop and publish according to Article 29(1) of the EED recast from 2023, it will be important to **design them in a way which makes refinancing operations possible**. In particular this is true for the EES model contracts for the public sector, which should be compliant with the Eurostat Guidance Note on the recording of energy performance contracts in government accounts. The model contract should make optimal use of the flexibility offered by the Eurostat Guidance Note, in order to enable its practical application on as large a scale as possible. For example, according to Eurostat for off-balance-sheet-accounting the remuneration to the energy service provider must be flexible. This does not mean, however, that a division of the remuneration into a fixed CAPEX part alongside a flexible OPEX part is impossible, so long as it is guaranteed at the same time that the energy service provider compensates the customer in full for a shortfall in performance.
- Some of the country experts who participated in the REFINE-project reported that exaggerated investment subsidies, in many cases resulting from EU Recovery and Resilience Plans (RRP), led to considerable distortion of the EES markets in their counties, e.g., in Italy, Croatia and Greece. To allow for a steady development of the EES business, it is thus important to **ensure that grants can be easily combined with energy services projects**. This also includes ensuring that the share of public subsidies does not exceed the level that is absolutely necessary to make a project cost-efficient in a life cycle assessment. In the case of deep renovation projects, the share of public subsidies is more likely to be in the range of 30-40% of the total costs and not 80-100%, as was often the case for RRP projects in the countries mentioned above. In this way, the leverage of public funds can be considerably increased, thus leading to a higher implementation rate of deep renovation and decarbonisation projects.
- The instrument of **public guarantee schemes** is an important element to back EES providers in taking over credit risks from their clients, which deter them from accepting larger projects with new clients, even if they are perfectly able to carry

the technical risks of these projects. At the same time, public guarantee schemes reduce the risks perceived by financial institutions, thereby helping them to finance or refinance EES projects, to offer better financing conditions and to reduce the risk assessment cost. In this way, guarantee schemes can support the tradability of receivables on the capital markets (securitisation).

- Currently the number of financial institutions in Europe who offer to refinancing products for EES projects, prevailingly through the sale of receivables, is very limited. Although green financing and taxonomy conformity are pushing factors in for financial institutions, significant barriers exist for them to offer refinancing products for the EES sector, with the small-scale nature of EES projects being particularly crucial. For example, investment funds want to be sure that a sufficient project pipeline is available (at least 15 to 20 mil. €), before they are willing and able to set up fund structures accordingly, whereas EES providers want to know the financing conditions at first before they commit to refinancing arrangements: A typical **hen-egg-dilemma**. In this situation, the public authorities can provide start-up support, for example by initiating the **creation of an investment fund focussing on the purchase of receivables from EES projects**. Once the scheme is established and running, such an investment fund can be transferred to the private capital market and the public sector can retreat to providing public guarantees to cover the client's credit risk, as outlined above.
- Another important way to ensure jump-starting the flow of private capital into financing the EES sector is to **support the development of larger project pipelines** with public funds. This addresses the **essential importance of facilitation services in the pre-investment phase**, which are hardly marketable especially in underdeveloped EES markets. In this context, the ELENA programme has demonstrated that technical assistance grants for facilitation services are a good means to overcome project development obstacles that are particularly critical in the pre-investment phase, including the development of financing models in close collaboration with clients and EES providers. The replication of the of the ELENA-programme by individual Member States is thus recommended. This would also offer the possibility to finetune such programmes to the particular needs of the EES business in a specific country.

9 FURTHER REFINE REPORTS

All below listed reports are accessible through the REFINE website
https://refineproject.eu/

CONCEPTS & TOOLS

The REFINE concepts and tools have been created using expert research with the aim of mainstreaming refinancing schemes as an enhancer for the implementation of energy efficiency service projects.

Generic concepts of refinancing schemes for energy efficiency services

This report aims to contribute to the reduction of transaction costs for the preparation and implementation of refinancing schemes by developing generic concepts which address specific requirements of different application fields.

Standardized contract stipulations for refinancing of energy efficiency services

Refinancing is not a common practice in most of the countries involved in the project. Therefore, with this document, the REFINE project intends to facilitate a standardised set of stipulations that, could increase the chance of projects being refinanced.

Rating system on refinanceability of EES projects

This document provides an introduction to a specific rating system that helps to assess the refinanceability of energy efficiency service (EES) projects. This document is elaborated in a template PDF file that is directly applicable for the evaluation of EES projects.

Excel template of the rating system

This template outlines a specific rating system that helps to assess the refinanceability of energy efficiency service (EES) projects. It is an elaboration of the introductory document titled 'Rating system for refinanceability of EES projects' and is directly applicable for the evaluation of EES projects.

Analysis of guarantee instruments for EES projects

In particular, this document provides an analysis on the role that various guarantee instruments play in facilitating the energy efficiency service (EES) business in general and the application of refinancing schemes for EES projects in particular.

Business models of facilitation services

This report delves into the identification of facilitation services, the description, and the different types of services that can contribute to the realization of the refinancing operations.

Refinancing of EES services: an underrated business opportunity related to green finance

There exists a general consensus among experts that large potentials of cost-efficient energy efficiency (EE) investment are currently untapped. Furthermore, these potentials are steadily expanding due to technological innovation.

Market growth models for energy efficiency financing: eceee paper

The paper explains the way, how refinancing models contribute to the growth of EE Financing. It analyses the European-wide market and cases studies showing the current importance of refinancing models for EE markets.

MARKET OVERVIEW

REFINE has identified a lack of attractive financing options for EES projects as a major barrier to the development of a functioning, robust EES market in Europe. In its research, the project will deliver an ongoing market overview to analyse the status of refinancing service markets across Europe.

Refinancing market assessment report

This report analyses the status of the refinancing service markets in nine European countries. The report shows differences across Europe: Whereas in some countries refinancing schemes have become a standard for the EES business, in other countries, none are applied.

Case studies on existing refinancing instruments for energy efficiency services

This report performs a thorough analysis of best practices in refinancing instruments for energy efficiency service (EES) in four REFINE project partner countries: Austria, the Czech Republic, Belgium and Latvia.

The potential of refinancing schemes in the European EES market

The summary presents the key results of the EES market survey which was conducted between January and May 2022 with EES providers (ESCOs) to gather their (potential) interest in selling receivables from ongoing or future EES projects.

The sale of receivables provides financing for most EPC projects in the Czech Republic

The sale of receivables is the most common method of financing Energy Performance Contracting (EPC) projects in the Czech Republic, which makes it different from other EU countries.

KEY REFINE PUBLICATIONS

Refinancing of Energy Efficiency Services

An underrated business opportunity related to green finance' – There exists a general consensus among experts that large potentials of cost-efficient energy efficiency (EE) investment are currently untapped. Furthermore, these potentials are steadily expanding due to technological innovation. This succinct analysis outlines the basic challenges in financing energy efficiency investments and introduces the 'refinancing' concept as a solution that offers a business opportunity for Financial Institutions which are searching for promising green finance investment.

Article – Sale of Receivables in the Czech Republic

The sale of receivables is the most common method of financing Energy Performance Contracting (EPC) projects in the Czech Republic, which makes it different from other EU countries. This method has been used to fund most public sector EPC projects completed since 2005, although it has been used only rarely in the private sector. This article provides an overview of the refinancing scheme for energy

efficiency services projects using its practical function in the Czech market as a key example.

Case Studies on Existing Refinancing Instruments for Energy Efficiency Services

This in-depth report outlines a thorough analysis of best practices in refinancing instruments for energy efficiency service (EES) in four REFINE project partner countries: Austria, the Czech Republic, Belgium and Latvia. The case studies are a showcase for different refinancing instrument concepts which are suitable for other EU countries as well. A structured description of each case study provides uniformity and comparability of the refinancing schemes.

Refinancing Market Assessment Report

This report analyses the status of the national refinancing service markets in nine Austria, Spain, Italy, Slovenia, Croatia, Greece, Czech Republic, Latvia and Ukraine. Legal and organisational framework conditions for admissibility of refinancing instruments for EES in each country have been researched through different methods (literature review, analysis of case studies and stakeholder interviews). The report shows large differences across Europe: Whereas in some countries refinancing schemes have become a standard for the EES business, in other countries, they are not applied at all.

Market Growth Models for Energy Efficiency Financing

Limited access to financial resources represents a serious restriction for the market growth of EE markets. Energy efficiency service (EES) providers often must include financing into their service packages while respecting their own credit limits. For financial institutions (FIs), EE investments are cumbersome and cash flow is generated from cost savings instead of sales on the market. This paper uses European-wide market assessment and case study analysis to explain how refinancing models contribute to the growth of EE financing.

Generic Concepts of Refinancing Schemes for Energy Efficiency Services

There exists a general consensus among experts that large potentials of cost-efficient energy efficiency (EE) investment are currently untapped due to a bundle of barriers, such as lack of trust in savings forecast, high cost for project preparation and procurement, split incentives, lacking awareness for non-core activities such as energy efficiency, perceived low energy prices, etc. Within this set of interlinked barriers, the access to attractive financing represents a serious restriction for the expansion of energy efficiency (EE) investments.

Standardised Contract Stipulations for Refinancing of Energy Efficiency Services

Refinancing, as defined in the REFINE project, is not a common practice in most of the countries involved in the project. Therefore, with this document, the REFINE project intends to facilitate a standardised set of stipulations that, if incorporated in EES contracts, could increase the chance of projects being refinanced by a financial institution after they have been implemented. These stipulations are not meant to be contractual clauses, since each European country has its own legal reality, but are meant to show which concepts are recommended to be incorporated in EES contracts signed between the EES provider and the client.

Rating System on Refinanceability of EES Projects

This document provides an introduction to a specific rating system that helps to assess the refinanceability of energy efficiency service (EES) projects. This document is elaborated in a template PDF file that is directly applicable for the evaluation of EES projects. Altogether, the risk assessment system supports the application of refinancing schemes in the EES business by incorporating elements specific to energy efficiency projects, reflecting on the impact which the client's cash surplus derived from energy savings can have on the improvement of the client's creditworthiness and diminishing financial institutions' due diligence and transaction cost.

Template EES Project Refinanceability Rating System

This template outlines a specific rating system that helps to assess the refinanceability of energy efficiency service (EES) projects. It is an elaboration of the introductory document titled 'Rating system for refinanceability of EES projects' and is directly applicable for the evaluation of EES projects. Altogether, the risk assessment system supports the application of refinancing schemes in the EES business

Analysis of Guarantee Instruments for EES Projects

In particular, this document provides an analysis on the role that various guarantee instruments play in facilitating the energy efficiency service (EES) business in general and the application of refinancing schemes for EES projects in particular. Seen from the perspective of refinancing schemes existing guarantee schemes, are limited use for covering risks of forfeited receivables derived from EES projects.

Business Models of Facilitation Services

This report delves into the identification of facilitation services, the description, and the different types of services that can contribute to the realization of the refinancing operations. The methodology chosen to implement this part is the Lean Canvas Model. This technique is especially helpful to understand the problem in focus and the value that it creates for the customer groups, which is the first step for a successful strategy to launch new services to the market.

The Potential of Refinancing Schemes in the European EES Market

The summary presents the key results of the EES market survey which was conducted between January and May 2022 with EES providers (ESCOs) to gather their (potential) interest in selling receivables from ongoing or future EES projects. It's findings provide insight into the current and expected use of refinancing as a business approach across Europe to support EES providers in overcoming financial bottlenecks and gain leeway for the expansion of their business.

OTHER PROJECT DOCUMENTS

- Test method description and overview on test applications
- Training materials
- REFINE brand strategy
- REFINE communications collateral pack
- REFINE website
- Dissemination and communication strategy

- Dissemination and communication strategy – Interim report
- Dissemination and communication strategy – Final report
- Proceedings from REFINE final event