CASE STUDIES ON EXISTING REFINANCING INSTRUMENTS FOR ENERGY EFFICIENCY SERVICES

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REFINE

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CONTENTS

DEFINITIONS

Definitions of important terms in the context of the REFINE project

In view of 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 of whether these investments are related to hardware installations or to services.

Energy efficiency service (EES): An agreed task or tasks designed to lead to an energy efficiency improvement and other agreed performance criteria. The EES will 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 will be provided. The improvement of energy efficiency will be measured and verified over a contractually defined period 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, etc.) and assumes 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 to restructuring of the initial financing set-up that may have been ensured through the EES provider's cash flow, credit financing, leasing financing or other funds.

Sale of receivables or sale of claims: An 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-term 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: A 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: A 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 therefore 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 financing, in contrast to on-balance sheet financing (loans, debt and equity), bases its collateral on a project's cash flow expectations, not on an individual's or institution's creditworthiness. It is off-balance sheet financing. 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 programmes 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 an 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 INTRODUCTION

The objective of this report is to perform 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 will serve as model examples for the further development of the refinancing instrument concepts suitable for other EU countries. A structured description of each case study provides uniformity and comparability of the refinancing schemes.

This report has been developed as part of the "REFINE – Mainstreaming of refinancing schemes as enhancer for the implementation of energy efficiency service projects" supported by the EU's Horizon 2020 programme. The REFINE project aims to contribute to the supply of sufficient and attractive financing sources to EEI investments through the enhancement of refinancing schemes, which are understood as important amplifiers of market growth. The project will find ways to ensure the admissibility of refinancing schemes for energy efficiency projects. It will also reduce the transaction costs of refinancing schemes through standardisation and facilitate risk assessment through increased transparency and use of credit guarantees. The wider uptake of refinancing schemes in the energy efficiency business hinges on know-how on the practical side of implementation. Therefore, the refinancing concepts developed in the first phase of the REFINE project will be applied in real EES projects and actively shared with the target groups involved (EES providers, EES clients, financing institutions).

2 COMMON FEATURES AND DIFFERENCES IN THE CASE STUDIES

2.1 Scope of energy efficiency improvement measures

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 focus on the implementation of technology EEI measures in building technologies, equipment, etc. as typical for standard EPC contracts. 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 fourth scheme, which operates as a standalone Building Energy Efficiency Facility (BEEF), set up first in Latvia, provides refinancing for comprehensive building refurbishment with EPC+ / EPC++ contracts with a duration of 20 – 30 years.

In addition to the investment measures, the projects refinanced within the schemes presented also include energy management services. However, these are paid for based on bills issued regularly by an EES provider over the contract period and these payments are not part of the forfaited amount.

2.2 Sale of receivables in the Austrian, Belgian and Czech case studies

The three cases studies describing sale of receivables in Austria, Belgium and the Czech Republic follow a very similar refinancing process and are further grouped under the term “sale of receivables”. They are based on a **receivables purchase agreement** that allows an EES provider to sell off expected receivables from its client. Such an agreement is arranged exclusively between the EES provider and the refinancing institution. All three case studies present sale of receivables without recourse, meaning the seller of the receivables is not liable for a client’s non-payment.

2.2.1 Key actors

The main actors involved in the three refinancing schemes are the EES providers, clients and refinancing institutions. While project facilitators play a considerable role in defining and tendering EES projects in the public sector, they are usually not involved in arranging and refinancing the projects.

Refinancing institutions in the Belgian and Czech case studies are commercial banks, while in the Austrian case study it is an FI closely tied to the EES provider.

EES providers are experienced, privately owned companies with whom the refinancing institutions usually have established long-term collaboration and mutual trust. In Austria, the EES provider is affiliated to the refinancing institution by having the same parent company.

The vast majority of **EES clients** come from the public sector and measures are applied at buildings operated by municipalities, regions or central government. In the Austrian and Czech case study, only the most creditworthy private clients have a chance to participate in the scheme. In Belgium, the scheme is applicable to those clients that have a zero or very low default risk. In practice, these turn out to be public sector clients or equivalent.

2.2.2 Refinancing process

The approval of sale of receivables is in most cases negotiated with the EES client in advance and incorporated in the EES contract. In the Czech Republic, however, sale of receivables without including such a stipulation in the contract is legal and possible.

The agreement on future sale of receivables between the EES provider and the FI is usually signed before the procurement procedure begins. All details of the financing agreement are arranged exclusively between the EES provider and the FI. It is important that the FI offers the EES provider a fixed discount rate already at this stage, so the provider can reflect it in the EES contract.

The **EES provider concludes an EES contract** with the EES client consisting of EEI technology measure installations and a service component.

The figure below describes key steps of the refinancing process common among the case studies describing sale of receivables in Austria, Belgium and the Czech Republic:

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. Non-usage defects are not an obstacle to the purchase of receivables.

2. The EES provider acquires the receivables. The EES provider issues an invoice billing the client for the installation of the equipment (consisting of 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.

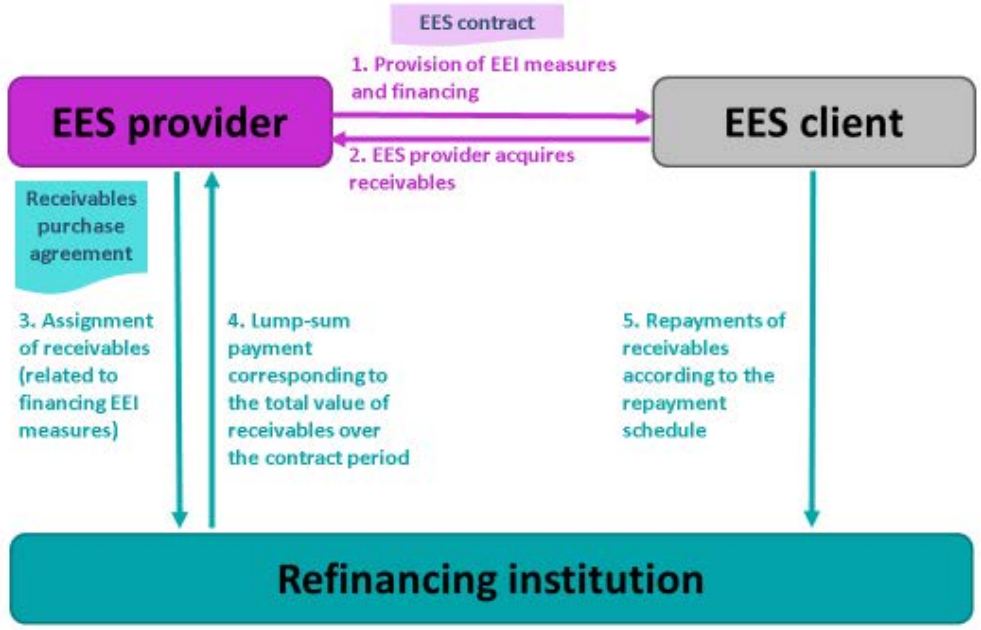
3. Receivables related to the financing of the EEI measures are assigned to the refinancing institution based on the receivables purchase agreement with the EES

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 1 Process of sale of receivables in Austria, Belgium and the Czech Republic



2.3 Building an energy efficiency facility model

The Buildings Energy Efficiency Facility ("BEEF") model is a private sector initiative developed and managed by Funding for Future B.V., focused on advanced deep renovation of buildings. It was first applied in Latvia, where the anchor investor is the European Bank for Reconstruction and Development, and is now being implemented in Austria, Bulgaria, Poland and Slovakia.

Whilst the other three case studies focus on financing technology measures in the public sector, the BEEF model focuses on financing building renovation as a service, currently tailored towards the multi-family sector.

2.3.1 Key actors

In this model, a separate BEEF is set up as a special purpose investment vehicle (SPV) and managed by a specialised asset manager, such as Funding for Future B.V., to purchase long-term EPCs for buildings based on compliance with its eligibility criteria and standardised processes.

In contrast to the other case studies, **providers** implementing the EES projects are not only typical EES providers but can also be construction companies.

Clients are to be found in the public sector (as in all the other case studies), but also in the multifamily and social housing sector.

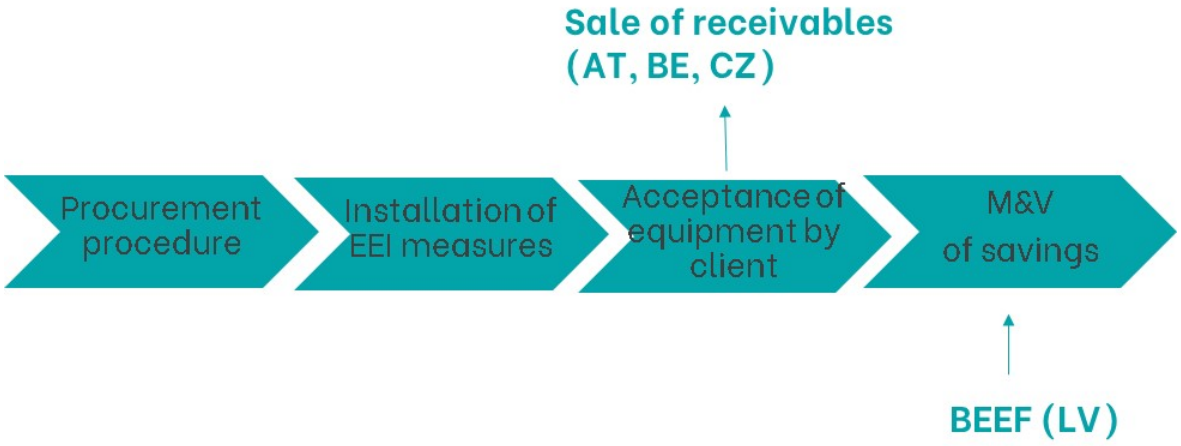
2.3.2 Refinancing process

The process applied in the BEEF model is very similar in all countries of application and is described in detail in the BEEF case study.

There are several differences compared to the process applied in the other three case studies:

- The BEEF acts as a "gatekeeper" for owners by ensuring that the BEEF's Investment Policy Guidelines and Standards are met. Therefore, all project parameters, including implementation, forfaiting, maintenance and rights and obligations of all parties are defined before the design stage.
- There is a different timing of refinancing, as can be seen in the figure below. Refinancing does not take place right after the installation of EEI measures (as in the other case studies), but later, after an independent auditor verifies the energy savings achieved during the first heating season.

Figure 2 Timing of refinancing



2.4 Risk management

In all four case studies, the **refinancing institution** assumes the risk of the EES client's insolvency and the **EES provider** holds the technical risks.

In all case studies, the sale of receivables is without recourse, which means that after the receivables are sold, the EES provider is not liable for non-payment by the EES client to the FI.

The EES client bears the risk of the EES provider's insolvency, but only to the extent related to delivery of services and not different as compared to a case without refinancing.

In all case studies, the EES provider assumes the contractually agreed performance risks of the project throughout the duration of the EES contract. The EES contract does not change after receivables are sold and the EES project is implemented according to the contract.

The tables below compare the use of various risk management mechanisms applied across the case studies for several scenarios with different levels of creditworthiness of the EES client and EES provider. The tables are illustrative and assume that various refinancing institutions may assess the risk differently and therefore apply different risk management mechanisms:

- Typical EES clients with high creditworthiness are public institutions, while a client with medium creditworthiness would be a public institution with some debts or a large and stable private company.
- Typical EES providers with high creditworthiness would be experienced ESCOs that have implemented at least a couple of successful EES projects. EES providers with low creditworthiness would be ESCOs that have entered the market recently and have not implemented enough EES projects to prove their competency to the refinancing institution.

The mechanisms which may be required on the EES client's side are:

- **invoice (with total costs for installations)** signed by the client proving the FI' liability of the client to pay the forfaited amount according to the repayment schedule;
- **bank guarantee** establishing the liability of a bank to pay in case the client does not pay according to the repayment schedule;
- collateral by property of the client;
- **third-party guarantor** who is liable for payments in case of the client's insolvency (e.g. the parent company or organisation that founded the client, such as a regional government in the case of a hospital, etc.);
- **equity,** i.e. financing from the client's own sources.

The mechanisms which may be required on the EES provider's side are:

- **guarantee of savings** stipulated in the EES contract;
- **bank guarantee** (e.g. a bank may guarantee payment of compensation to the EPC client if the EPC provider does not compensate for savings shortfalls);
- **third-party guarantor** (e.g. the parent company of the EES provider);
- **equity**, i.e. co-financing from the provider's own sources.

2.4.1 Sale of receivables in the Austrian, Belgian and Czech case studies

The tables show that **across the Austrian, Belgian and Czech case studies** when both EES client and EES provider are assessed as highly creditworthy, the situation is similar. The lower the creditworthiness of the client and the provider, the more various mechanisms to manage the risk are applied across the case studies.

Across all scenarios, the difference is that while in the Czech Republic the guarantee of energy savings is strictly required, in the Austrian and Belgian case study it is seen as an advantage by a refinancing institution. In the Austrian case study, the refinancing institution requires a title on equipment installed (asset-based collateralisation of receivable), while no such collateral is required in the Belgian or Czech case study.

In **case study projects** in Austria, Belgium and the Czech Republic, the provider bears the risks of not achieving contractually agreed savings as well as design risks, implementation risks and risks related to the operation of installed measures. If an EPC project fails to achieve performance specified in the contract, the EPC provider is obligated by the contract with the client to compensate savings shortfalls that occurred over the life of the contract.

By selling receivables, the risks associated with the EES project are divided into technical and financial risks. While technical risks remain with the EES provider, credit risk is transferred to the refinancing institution:

- On the technical side, it is possible to prepare projects in such a way that the desired results are mostly achieved. EES providers have the advantage of being able to avoid a large proportion (in most cases at least two-thirds) of technical risks by verifying the expected performance with technical calculations. The remainder of the technical risks can be mitigated using the experience of the EES provider.
- It is crucial for the FI that the EES client fulfils the repayment obligations, so they mainly assess the client's creditworthiness. If it is high, the risk to the FI is minimal. If it is low, the FI will request a risk mitigation mechanism or withdraw from the purchase of receivables.
- If an EES provider is new to the market, a guarantee from a parent company or a bank guarantee will probably be required to make the provider eligible for sale of receivables. However, FIs with long experience in purchasing receivables do not consider technical risks if the EES provider proved its ability by means of successful projects. Over time, it has been observed that the

more experience refinancing institutions acquired, the less risk mitigation requirements the FI imposes.

Table 1 Risk management mechanisms required on the EES client side

	Creditworthiness of		Mechanisms required on EES client side				
	EES client	EES provider	Invoice (total costs) signed by the client	Bank guarantee	Collateral by property of the client	Third-party guarantor	Equity (client's own sources)
AT	high	high	required	-	title on equipment required	-	-
	high	low	required	-	title on equipment required	-	-
	medium	high	required	possibly yes to a limited amount	title on equipment required; collateral by building in client's ownership possibly yes	required	-
	low	low-high	required, but not sufficient	possibly yes to a limited amount	title on equipment required; collateral by building in client's ownership possibly yes	required	-
BE	high	high	required	-	-	-	-
	high	low	required	-	-	-	-
	medium	high	N/A	N/A	N/A	N/A	N/A
	low	low-high	N/A	N/A	N/A	N/A	N/A
CZ	high	high	required	-	-	-	-
	high	low	required	-	-	-	-
	medium	high	required	bank guarantee provided by third party*	-	-	co-financing required*
	low	low-high	N/A	N/A	N/A	N/A	N/A
LV	high	high	confirmed repayment upon delivery of results				

Notes: N/A - not applicable, as it is not accepted by the bank for sale of receivables
Both or one of the mechanisms marked with "*" on the client side is required.
The darker the colour, the stricter the refinancing institution's requirement.

Table 2 Risk management mechanisms required on the EES provider side

	Creditworthiness of		Mechanisms required on EES provider side				
	EES client	EES provider	Guarantee of savings in contract	Bank guarantee	Property collateral	Third-party guarantor	Equity
AT	high	high	is a pro, not required	-	-	-	-
	high	low	is a pro, not required	possibly yes to a limited amount	-	-	-
	medium	high	is a pro, not required	-	-	-	-
	low	low-high	is a pro, not required	possibly yes to a limited amount	-	-	-
BE	high	high	is a pro, not required	-	-	is a pro, not required	-
	high	low	is a pro, not required	-	-	is a pro, not required	-
	medium	high	N/A	N/A	N/A	N/A	N/A
	low	low-high	N/A	N/A	N/A	N/A	N/A
CZ	high	high	100% guarantee required with sanctions	-	-	-	-
	high	low	100% guarantee required with sanctions	-	-	guarantee by parent company	-
	medium	high	100% guarantee required with sanctions	-	-	-	-
	low	low-high	N/A	N/A	N/A	N/A	N/A
LV	high	high	100% guarantee (performance); step-in rights	-	-	-	required for first few years

Notes: N/A - not applicable, as it is not accepted by the bank for sale of receivables
Both or one of the mechanisms marked with "*" on the client side is required.
The darker the colour, the stricter the refinancing institution's requirement.

2.4.2 Building an energy efficiency facility model

Currently, the **Latvian BEEF scheme** is applied to the residential building sector, so the refinancing mechanism requires different rules and approaches than in the other three case studies.

The EES provider finances the installation of measures. Up to 80% of the receivables is purchased upon verification of results after one heating season. Subject to performance, up to 100% of the receivables can be purchased in subsequent years. The refinancing institution has step-in rights allowing it to replace the EES provider if it is not performing according to the guidelines and the contract. In Latvia, the 100% technical performance including achieving the guaranteed savings is required from the EES provider. Collateral is not required by the BEEF in Latvia.

2.5 Accounting and tax issues

2.5.1 Balance sheet treatment

Initially, the **EES provider** invests in EEI measures on its own balance sheet. In all case studies, once the receivables are sold the obligations are removed from the provider's balance sheet. This is a key benefit of refinancing for EES providers.

Sale of receivables does not affect the **EES client's balance sheet**. The equipment remains activated on the client's balance sheet. The assignment of the receivable does not change the EPC client's obligation, as it remains a trade obligation (i.e. a supplier credit) and does not change into a bank loan.

Nevertheless, the financing of some EPC projects may influence **governmental debt.** In the case of **public EES clients**, whether such an obligation contributes to governmental debt depends on EUROSTAT rules. For EPC projects, the conditions that need to be fulfilled for such an obligation not to influence the statistical treatment are stipulated in A Guide to the Statistical Treatment of Energy Performance Contracts (Eurostat and European Investment Bank 2018), although the application of these conditions and rules differs across EU countries. Therefore, the issue appears too complex to be analysed in full in this study.

2.5.2 VAT taxation

In all case studies VAT is applicable on the price of technical equipment and its installation at the EES client as well as on services (energy management) provided by the EES provider to the EES client. However, VAT is not applicable on sale of receivables to the refinancing institution.

VAT related to the installation of EEI technology measures is due when invoicing the EES client, which is in the initial phase of the EES project. It depends on the tax treatment on the client side. This may be a burden for clients who cannot deduct VAT (e.g. public sector clients), which is why in the Czech Republic, if the EES client

is interested, the loan for VAT payment becomes part of the services provided by the provider and part of the sale of receivables to the refinancing institution.

In **Latvia**, within the BEEF scheme, the general concept of reverse VAT applies, where EES providers, as recipients of construction services, can pay for outsourced services net of VAT. They become liable to report VAT upon issuance of bills to final beneficiaries (residents), which includes VAT.

VAT on services is due at the regular invoicing of the service part of the contract over the EES contract duration.

3 INSTALMENT PURCHASE MODEL IN AUSTRIA

3.1 General overview of the refinancing mechanism

3.1.1 Category of refinancing scheme

Instalment purchase model - Sale of receivables based on equipment delivery with agreement on instalment purchase

3.1.2 Country

Austria

3.1.3 Scope

- National
- Applicable to all EES projects (EPC and ESC) with high share of equipment delivery ("hardware") as compared to the service component (design, operation, maintenance, etc.) of the EES.

3.1.4 Key actors

Financing institution providing refinancing

- FIs with a close relationship to the EES provider.
- According to our current information, the approach is applied by the EES provider. The refinancing offer provided by the FI tied to the EES provider through the same parent company is not accessible for other EES providers in Austria.
- We do not know yet if any other EES providers apply a similar approach.

Providers

The FI acquires receivables from experienced privately owned EES provider(s). [From the market research implemented so far, we understand that only an extremely limited number of EES providers are successful in selling receivables to FIs – this is based on a very close relationship between the EES provider and the FI.]

Client sector

The sale of receivables is implemented for public clients (federal state, municipalities) and for private clients with high creditworthiness.

Involvement of project facilitators

Generally, facilitators play a considerable role in defining and tendering EPC/ESC projects in the public sector, but they are usually not involved in the development of the financing approach, which is arranged exclusively between the EES provider(s) and the FI(s). This also applies to the refinancing approach described in this case study.

Programme administrator

There is no special programme or administrator of the sale of receivables mechanism. The sale is organised individually for each project between the EES provider(s) and the FI(s). Clients are not directly involved in defining the financing mechanism, but they must agree to certain clauses in the EES contract that enable the sale of receivables by the EES provider to the FI.

3.1.5 Related energy efficiency service

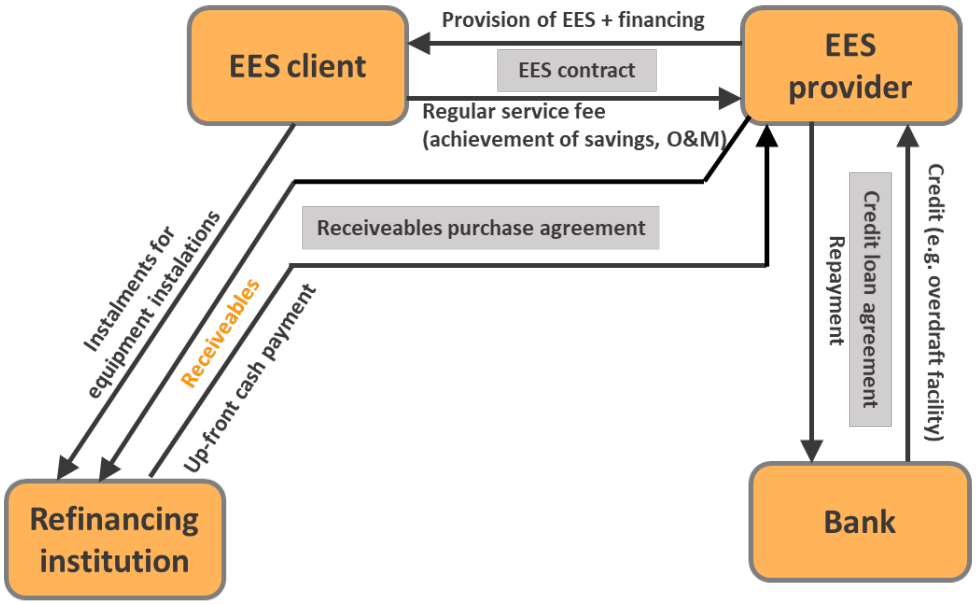
- EPC – guaranteed savings model
- ESC

3.1.6 Refinancing process

- The EES provider concludes an EES contract consisting of hardware installations and a service component.
- The costs of installing equipment (consisting of design, equipment and installation costs) and the financing costs are invoiced immediately after installation. The client, however, does not have to pay the invoice at once, but in equal – usually annual – instalments distributed over the whole contract period. Generally, the scheme can be applied to EES projects with different lengths of contract periods. Most EES contract periods, however, are between 7 and 10 years in Austria and are longer only in a few cases.
- After the equipment is installed, an acceptance procedure is implemented, which confirms the delivery of the equipment as agreed and the price of installation (taking into account potential deviations from the offered price due to changes in the scope of delivery), thus constituting justified receivables of the EES provider against the client.
- On this basis, forfaiting without recourse against the provider becomes feasible. The EES provider sells the receivables related to equipment delivery to the FI. The FI can be generally sure to receive regular payments from the client because the client already confirmed the delivery, including its price. Therefore, independently from the fulfilment of the saving guarantee or other contractual duties by the EES provider, the client must pay the forfaited amount in any case. However, the default risk in case of the client's insolvency remains with the FI.

- In case of non-payment by the client, the refinancing institution has an enforceable title on the installed equipment. The agreement between the EES provider and the client also stipulates a retention of title, which is transferred to the refinancing institution.
- The service component of the contract is invoiced to the client on a yearly basis. The amount of the yearly payments depends on adherence with the savings guarantee. This part of the receivables is not forfaited.

Figure 3 Process of sale of receivables in Austrian case study



3.1.7 Overall results, success and bottlenecks

- The approach is used by a limited number of EES providers and is not a standard financing approach for EES projects in Austria.
- Generally, the client must activate the purchase of equipment immediately after receipt of the invoice, which negatively impacts its credit ratio. In terms of credit ratio, the approach does not provide any advantage compared to credit financing of the equipment installations by the client. This aspect, however, is not a big burden for some clients. The approach can also give additional financial leeway to clients who wish to save up the funds available through an overdraft facility.
- Most FIs do not accept sale of receivables for EES projects because of perceived uncertainty with respect to risk management, accounting and taxation. To our knowledge, the approach described in the case study is applied only by one larger EES provider in Austria.

3.1.8 Risk management

- The FI assumes the risk of the client's bankruptcy (default risk). The only collateral is the retention of title on equipment that may be enforced by the refinancing institution in case of non-payment by the client.
- Technical and operative risks (e.g. related to non-fulfilment of savings guarantee in case of EPC) remain with the EES provider.

3.1.9 Contractual stipulations

The following contractual stipulations are required as a precondition for the application of the scheme:

- Differentiation of costs for equipment installation (consisting of design, hardware, installation and financing costs), which are generally due after installation, and service costs, which are invoiced regularly (usually annually) during the contract period.
- Stipulation on instalment payments for equipment delivery (basis of the payment amount, duration, waiver of objection related to this part of the remuneration).
- Stipulation on acceptance procedure that must be implemented after the equipment has been fully installed.
- "Safeguarding" article stating that for those cases where the promised energy saving guarantee were completely missed and the due remuneration for service costs were negative, the EES provider must refund the possible negative balance to the client.
- Retention of title on equipment installed.
- General permission of the EES client to the EES provider to sell the receivables / stipulations on required information to the client.

3.1.10 Taxation

Since the installation of equipment is invoiced immediately after its completion, the VAT is due at the beginning of the contract. This is of little relevance for clients who are eligible for a VAT deduction, but may be a disadvantage for most public clients, since they must pay the VAT related to equipment installation all at once. This puts – a burden on available budgets, as the price of equipment installation usually accounts for 40-60% of the total project cost.

3.1.11 Cost structure of the refinancing model

The approach is only attractive for those EES projects that have a significant share of equipment costs in the overall cost structure (at least 40-60% of upfront cost related to equipment installation).

There is little information available about the cost of the scheme, mainly related to the discount which the EES provider must accept when selling the receivables. According to our interview partners, the cost depends on the creditworthiness of the client and coincides with the market-based interest rate for arrangements without collateral.

3.1.12 Subsidy/Incentive

Currently subsidies do not play any role related to the selection of the financing model.

4 SALE OF RECEIVABLES FOR EPC PROJECTS IN THE CZECH REPUBLIC

4.1 General overview of the refinancing mechanism

4.1.1 Category of refinancing scheme

Sale of receivables without recourse to the EES provider agreed before initial financing of the project

4.1.2 Country

Czech Republic

4.1.3 Scope

- National
- Applicable to all EPC projects

4.1.4 Key actors

Financing institution providing refinancing

- Banks holding a Czech National Bank banking licence, in particular:
- Export and commercial financing department of Československá obchodní banka, a. s. (ČSOB)
- Department of Energy Financing and Department of Factoring of Komerční banka (KB)

Providers

Banks acquire receivables from experienced EES providers, who in the Czech Republic are solely private companies. Currently there are up to six active providers implementing EPC projects on the Czech market, who all use a sale of receivables mechanism. While most of these providers began to operate as SMEs, now four of them are owned by large companies.

Client sector

The sale of receivables is mostly implemented for public clients. Most of these are municipalities and clients from the healthcare and education sectors.

Based on the experience of EES providers in the Czech Republic to date, it can be said that the sale of receivables is not especially suitable for EES clients from the private sector, especially in the case of EPC projects. Although the providers asked

an FI for an offer of financing for an EPC project, the interest offered for assigning receivables was too high or the maturity of receivable too short for private EES clients and they preferred to pay the agreed price to the provider from their own resources or from a regular loan.

According to refinancing institutions the risk connected with a long-term loan (10-12 years) is too high for private companies. In private industry, the payback period is accepted if it is less than seven or eight years.

In the case of refinancing projects where the EES client is a private company, the EES client is usually a client with whom the refinancing institution has already had a good experience.

Involvement of project facilitators

The projects are facilitated by EPC facilitators established on the market. Project facilitation is conducted in the Czech Republic only by private organisations that operate as consultants in the energy efficiency and energy sector. Facilitators play a considerable role in defining and tendering EPC projects in the public sector. However, they do not participate in the preparation of financing for the projects.

Programme administrator

There is no special programme or administrator of the sale of receivables mechanism in the Czech Republic. The sale is organised individually for each project between the EPC provider and the FI.

4.1.5 Related energy efficiency service

EPC – guaranteed savings model

4.1.6 Refinancing process

- **An agreement on the future sale of receivables** between an EES provider and an FI is usually signed before the start of the procurement procedure. It is important that the FI offers the EES provider a fixed discount rate already at this stage. The FI will purchase the receivable at this rate after the completion of the EES project, provided that the time parameters are met. The provider can therefore work with this fixed rate from the very beginning and incorporate it into the conditions of its project. (Szomolányiová and Čada 2020)
- **An agreement on the future sale of receivables** between the provider and the FI is usually signed before the procurement procedure begins. At the latest it must be completed before final tenders are submitted and the winning provider is selected. All details of the financing agreement are arranged exclusively between the EES provider and the FI.

- **The approval of the sale of receivables** is usually negotiated with the client in advance and incorporated in the EPC contract. In some cases, the client specifies the type of company which is allowed to buy the receivables (e.g. a bank holding a licence from the Czech National Bank and its subsidiaries). In some cases, the name of the specific FI to which the receivable will be assigned is included in the EPC contract prior to the signing (it is known because the agreement between the FI and the provider was already signed earlier). However, the sale of receivables is legally possible even if not mentioned in the EPC contract.
- **The EES provider concludes the EPC contract** with the EES client consisting of EEI technology measures installations and a service component.

The steps below are part of the process of the sale of receivables in the Czech Republic:

1. The EEI technology measures are implemented according to the EPC contract.

- After the functionality of installed equipment is proved by testing, the EES client signs a **handover report** stating the work was handed over without a defect and, if there were any defects, how they will be removed. Non-usage defects are not an obstacle to the purchase of receivables.

2. The EPC provider acquires receivables:

- **The EES provider issues an invoice** billing the client for the installation of equipment (consisting of costs of design, equipment, installation and financing).
- **The EES client signs the invoice** confirming its liability to repay the invoiced amount in stipulated repayments over the whole contract period. The client thus confirms the final price, usually accepting some deviations from the tendered price because of changes in the scope of EEI measures delivered.

3. Receivables related to the financing of the EEI measures are assigned to the refinancing institution based on the receivables purchase agreement with the EES provider and the invoice with repayment schedule signed by the EES client. The EPC contract remains in force for the entire maturity period of the receivables and, therefore, the EES provider remains responsible for the technical part of the project. The assignment of the receivable does not change the obligation of the EPC client, as it remains a trade obligation (i.e. a supplier credit) and does not transform into a bank loan.

4. The refinancing institution sends a lump-sum payment to the EES provider corresponding to the total value of the receivables.

5. The EES client sends regular repayments to the refinancing institution over the contract duration according to the repayment schedule previously confirmed by the client.

4.1.7 Overall results, success and bottlenecks

- The sale of receivables is the most common way of financing EPC projects in the Czech Republic. This method was used to finance most EPC projects completed since 2005 in the public sector.
- According to the results of the QualitEE project survey (Szomolányiová and Keegan 2018) the vast majority of Czech EPC providers and facilitators (approx. 75%) were involved in EPC projects financed by the sale of receivables. The agreement on the future sale of claims is very well accepted as a main collateral in the Czech Republic (91% of respondents in the QualitEE survey 2019 stated that it is accepted in most cases and the rest stated that it is accepted in all cases).
- Sale of receivables is generally well accepted without any collateral in public buildings and has proved to be an extremely successful method. It is not used as often in the private sector, as the costs of sale of receivables are higher and banks need to conduct a more detailed financial analysis in advance.
- The sale of a receivable does not change the client's status, since no contractual relationship is established between the client and the refinancing institution from an accounting or legal perspective.
- Bottlenecks:
    - For many years, governmental organisations (e.g. ministries) have been forbidden by law from accepting any supplier's credit, which is why financing provided by the EES provider with sale of receivables usually has been rejected. Therefore, public sector clients tend to be limited to municipalities, regions and buildings in their ownership (hospitals, schools).
    - In general, the costs of receivables are considerably higher in case of private EES clients. Moreover, banks do not accept receivables from risky industrial branches (e.g. the textile industry).

4.1.8 Risk management

The FI assumes the risk of the client's bankruptcy only. All other risks stay with the EES provider. After the receivables are sold, the EPC project is implemented according to the original EPC contract (including the guarantees and liabilities of the provider).

The sale of receivables is carried out **without recourse on the EES provider**, the liability being eliminated from the EPC provider's accounting upon sale. The purchase of receivables on a non-recourse basis for a provider is a financial product that is unsecured from the bank's point of view, meaning unsecured by the borrower (unlike when the bank provides a loan to a borrower and wants to have it secured, for example, by the borrower's real estate). If a receivable is purchased from an EES provider, the FI has a contract only with the provider and not with the EES client

(borrower), so it cannot bind the borrower in any way or demand collateral from it. Therefore, the FI must know the borrower very well and trust its risk and reputation throughout the project repayment period. (Szomolányiová and Čada 2020)

The EES provider assumes the contractually agreed performance risks of the project throughout the duration of the EPC contract. These include the risks of not achieving contractually agreed savings as well as design risks, implementation risks and risks related to the operation of installed measures.

If an EPC project fails to achieve performance specified in the contract, the EPC provider is obligated by the contract with the client **to compensate savings shortfalls** that occurred over the life of the contract. Contractually agreed savings as well as achieved savings are determined by a Measurement and Verification (M&V) report using appropriate methodology (such as IPMVP) as defined in the contract after data for the respective year are available. If the annual M&V report shows that savings shortfalls have occurred, there are two options:

- In most cases, the amount of the shortfall is lower than the payment for energy management for the previous year (EUR 10,000 – 20,000), and the shortfall is deducted from the client's energy management payment.
- In exceptional cases, the shortfall is more than the energy management payment and the client will issue an invoice for the amount of the shortfall to the EPC provider.

The client-fixed payments to the EPC provider are paid each quarter or each half a year. Hence the shortfall cannot be deducted from such fixed payments, as the value of the shortfall is determined only the following year (usually in February – March) by the M&V annual report when all fixed payments for the relevant period have already been paid.

Most public institutions are trustworthy clients for the FI. The risk of bankruptcy in a municipality is low in the long term (for instance, a municipality that is subject to public control and is not aggravated by inappropriate debt). No shadow guarantee by the government is assumed by the FI. In contrast, in the case of private clients, FIs are much more careful and require detailed analyses in advance. For some industries, FIs reject purchase receivables in all cases (e.g. for textile companies).

4.1.9 Contractual stipulations

General contractual preconditions

According to the Czech legislation, sale of receivables is allowed in any project if it is not banned in the contract. In the Czech EPC model contract the client approves the sale of receivables in advance. The reason is twofold:

a) to inform the client about the future sale of receivables (transparent conduct of the provider);

b) to open discussion on how the client's requirements would be reflected in the refinancing process.

Financial payments by the client

The EES client commits to the regular payments in the EPC contract:

> *The Parties agree on deferred incremental payment of the price for the implementation of Measures in instalments; their amounts and dates will be stipulated in Appendix No. 3. The Client undertakes to pay interest in the amount of __ percent, per annum, for such deferred due date of payments of the price, to such extent as defined in Appendix No. 3.*

Project risks

The FI buys only financial receivables, while the liability for the technical condition remains with the EES provider under the provider-client EPC agreement. The underlying EPC contract is not ceded to the FI.

The FI purchases receivables immediately after all the energy saving technologies have been installed, tested, commissioned and handed over to the EES client.

The handover report states whether the work was handed over without defects, and if there are any defects, how they will be removed. Non-usage defects are not an obstacle to the purchase of receivables. The EPC contract remains in force for the entire maturity of the receivables. Therefore, the bank does not assess technical risks. The FI does not require annual evaluation reports, but each year the EPC provider must inform the bank whether the guaranteed level of savings has been achieved.

Thus, project risks are mitigated with two main remaining risks:

a) low performance; and

b) the EES client's insolvency.

EES provider insolvency is not a risk in the case of a well-designed project. As the energy management is paid for annually, another EES provider can take over and continue providing these services to the EES client.

If an EES client goes bankrupt, the FI will usually not receive any compensation and the unpaid part of the receivables will be a loss for the FI. If the contract is terminated for other reasons, the client is still obliged to pay the whole amount of the receivables to the FI.

Reasons for contract termination

To specify the reasons for contract termination and its implications, the Czech model contract uses the following stipulation:

1. The present Contract will terminate upon the fulfilment of the subject-matter and the purpose hereof, in compliance with the Project Implementation Timetable.

2. The present Contract may be terminated prior to the fulfilment of any commitments contained herein:

a) upon agreement of the Parties;

b) by means of a withdrawal notice made in writing.

3. Each Party may withdraw from the present Contract:

a) if the other Party enters into liquidation;

b) if the other Party is in bankruptcy;

c) if bankruptcy has been finally declared in respect of the other Party;

d) in cases specifically stipulated in the present Contract;

e) if the other Party materially breaches its contractual obligations or statutory duties.

6. If such a withdrawal occurs:

a) within Basic Measures Application Term, ESCO will be entitled to a portion of the price for the implementation of Measures corresponding to the scope of the genuinely implemented Measures;

b) on the part of the Client at the time of the provision of the Guarantee, ESCO will be entitled to the repayment of all receivables to which it had been entitled under the present Contract pursuant to Article 25, with the exception of costs incurred by ESCO in connection with early repayment as specified in Article 25.1(b);

c) on the part of ESCO at the time of the provision of the Guarantee, ESCO will be entitled to the repayment of all receivables to which it had been entitled under the present Contract pursuant to Article 25.

Stipulations ensuring that technical and operational risks remain with the EES provider

If an EPC project fails to achieve performance specified in the contract, the EPC provider is obligated by the contract to compensate savings shortfalls that occurred over the life of the contract.

The concrete stipulation establishing penalties for failure to achieve guaranteed savings can be for example as follows:

> *1. The Parties agree that, if lower Costs Savings have been generated within a specific Billing Period during the term of provision of the Guarantee than Guaranteed Savings in respect of that Billing Period, exclusively due to reasons on the part of ESCO or entities assisting ESCO in the fulfilment of its commitment, ESCO undertakes to pay the Client a penalty in the amount as specified in Appendix No. 5 in respect of such Billing Period.*

4.1.10 Taxation

The client must pay VAT just after the invoice is delivered to it. In some cases, the loan for VAT payment becomes a part of the services provided by the EES provider.

4.1.11 Cost structure of the refinancing model

The costs of sale of receivables equal the difference between the amount of money received by the FI from the EES client and the amount of payment received by the EES provider from the FI that purchases the receivables.

The EES provider's costs for selling receivables consist mainly of **paying a discount**. In addition to the discount, the EPC provider also pays a **fee for the assignment of receivables** or processing of relevant contracts. When receivables are sold to ČSOB bank, this fee is not high, but reaches EUR 800 at most. (Szomolányiová and Čada 2020)

The discount interest is the sum of the basic market rate corresponding to the maturity of the receivable and the margin of the FI reflecting the creditworthiness of the borrower (EES client). The discount therefore primarily reflects the creditworthiness of the EPC client and the length and frequency of repayment of the receivable. (Szomolányiová and Čada 2020)

The discount rate is generally lower for public EES clients than for private sector EES clients. The risk for municipalities or state-funded organisations is therefore generally lower than corporate risk, which is also reflected in the amount of the discount rate or bank margin.

In case ČSOB purchases receivables from the EPC project where the EES client is a municipality, the margin included in the discount rate for repayment over a period of 10 years will be between 1% p.a. and 1.5% p.a. For example, the lowest margin for the EPC project was 0.15% p.a., but the borrower in this case was one of the Czech regions, which represents first-class creditworthiness for the financing bank. (Szomolányiová and Čada 2020)

If the EES client is a private company, the interest will almost always be higher than 1.5% p.a. For a financing bank to be able to offer an EES provider the purchase of a receivable from a private client to the provider on a non-recourse basis, it is

desirable that the EES client (borrower) is already a client of the financing bank. (Szomolányiová and Čada 2020)

In most of the EPC projects implemented in the Czech Republic, the **EPC projects considered do not include operation** and therefore entail no operational costs. In most cases, all operational costs (including maintenance) are paid by the EES client, as the client is usually responsible for proper operation. There are only two exceptions where the EES provider bears the costs of improvement:

1. Repair is needed during the warranty period (usually about three years for technology and five years for construction).

2. Repair and/or maintenance is needed due to a mistake in project design (insufficient output of the pump or boiler, etc.).

In an unusual case, when the ESCO is responsible for operation, then regular repair and maintenance up to a certain percentage of investment costs is covered by the ESCO. Expenses exceeding this limit are covered by the client, or the ESCO and the client share the costs according to the contract.

4.1.12 Subsidy/Incentive

No subsidies or other special incentives are needed or common for the sale of receivables for EPC projects in the Czech Republic. However, some of the EPC projects make use of governmental subsidies. Then the only difference is that the payment that is the subject of the sale of receivables is reduced by the amount of subsidy in comparison to a case without a subsidy.

4.2 Example case: EPC project in the Břeclav Hospital

4.2.1 Location

Břeclav Hospital in the City of Břeclav, Czech Republic

4.2.2 Key actors

Financing institution providing refinancing

Komerční banka (https://www.kb.cz/en) is a universal bank providing a wide range of services in retail, corporate and investment banking. Komerční banka is experienced in buying receivables from well-established EPC providers on the Czech market.

Provider

EPC provider: Amper Savings (http://www.ampersavings.cz/)

Project facilitator

SEVEn – The Energy Efficiency Center, z.u. (www.svn.cz) is a not-for-profit consultancy in the area of energy efficiency.

Client

Břeclav Hospital, City of Břeclav (http://www.nembv.cz/) is a public organisation as it is owned by the South Moravian regional office.

4.2.3 Related energy efficiency service

EPC – guaranteed savings model

4.2.4 Refinancing

Subject of refinancing

EPC project costs consist of three parts:

- funds invested in EEI measures;
- the costs of financing;
- annual payments for continuous service of energy management.

As usual, only the first two parts – investment costs and financing costs - were subject of sale of receivables immediately after the implementation of EEI measures in the hospital.

Share of the expected contracting rate actually forfaited

- sale of receivables volume: EUR 2.4 million (i.e. 85% of the whole contract price)

Refinancing instruments

Project financing

4.2.5 Refinancing process

The EES provider:

- used a short-term loan from a bank and installed the EPC project for the client;
- issued a complete invoice once all energy saving measures were installed and taken over by the client and submitted it to the client for review (the bank required the client's countersignature);
- subsequently assigned the receivables to the bank and released the debt from Amper Savings' accounting;

- continues to bear the whole risk of project failure concerning any energy saving technology and provides energy management in the hospital.

The bank:

- has been providing short-term loans to the EES provider for many years, so knows the provider well;
- deducted the amount of investment costs from the company's previous obligations.

The EES client:

- redirected repayments of investment costs from the provider's bank account to the bank;
- pays the costs of energy management directly to the bank account of the EPC provider.

4.2.6 Economic summary

The following values do not include VAT:

- Guaranteed savings: EUR 4 million
- Contract length: 10 years
- Investment costs: EUR 2.2 million
- Costs of financing: EUR 0.24 million
- Energy management: EUR 0.25 million
- Annual guaranteed savings: EUR 0.4 million / 8.6 GWh

4.2.7 Subsidy/Incentive

No subsidies or other special incentives have contributed to the project in the Břeclav Hospital.

4.2.8 Timetable

The EPC contract with the Břeclav Hospital in the City of Břeclav was signed in June 2017. The installation of energy saving measures began in July 2017 and was completed in December 2017. Energy and costs savings are guaranteed from January 2018 to December 2027, when the contract terminates.

4.2.9 Construction measures

No construction measures were taken in the Břeclav Hospital.

4.2.10 Energy efficiency improvement measures

- Complete reconstruction of the hospital's boiler house.
- Switch from steam boilers to hot water boilers and reconstruction of the local energy network.
- An energy management monitoring and control system was installed. In addition, a set of energy saving measures was implemented (removal of heat exchangers, instalment or reconstruction of heat stations, thermostatic valves, etc.).

5 SALE OF RECEIVABLES DEVELOPED BY BELFIUS BANK AND WATTSON IN BELGIUM

5.1 General overview of the refinancing mechanism

An important requirement with respect to financing EPC projects is the **scale of investments**. Setting up a special purpose vehicle (SPV) is only worthwhile when sufficient investments can be bundled into one project having a cumulative size of at least EUR 1-5 million. For smaller projects, **alternatives to setting up an SPV (or other types of project financing**) are deemed required.

To address this need, Wattson[1] (SME EES provider) and Belfius bank[2] have developed an alternative financing method[3]: "**sale/cession of receivables without recourse"**. The rationale is that an EES provider is normally not interested in having the assets of an energy saving project on its own balance sheet. An EES provider is first and foremost a company that designs, implements and finally manages EPCs during the term of the EPC contract; it is not a financial expert.

Keeping the investments on-balance of the EES provider has some significant drawbacks. First, not many EES providers are able to take huge amounts of assets on their balance sheet. This is especially true when it comes to start-up EES providers. Even more important, however, is the outstanding credit risk of the counterparty. EES providers are accustomed to dealing with energy savings and know well how to mitigate the associated risks. But EES providers are less equipped to evaluate and secure credit risk.

The alternative approach is structured as follows:

- Initially the EES provider - Wattson - invests in EEI measures (hardware) on its own balance sheet.
- As soon as these assets are commissioned, they are sold to the client via a so-called instalment sale. At the same time, the EES provider initiates a sale of receivables with an FI.

The advantage of this approach is twofold: the assets disappear from the balance sheet of the EES provider and the FI now assumes the credit risk. Because of the sale of receivables, a direct link is established between the client and the FI, the EES provider still having a financial relationship with the client via the service fee (paid quarterly and verified once a year). This service fee covers the maintenance and monitoring cost of the installations.

[1] www.wattson.be
[2] www.belfius.be
[3] Text based on report from FALCO project, Financing Ambitious Local Climate Objectives, D2.4, Report on general aspects FLC, March 2019

Finally, it is remarked here that the EPC business case has been designed in such a way that the total cost of repayment of an annuity to the bank together with the service fee to the EES provider should be smaller than or equal to the expected energy savings from the business case. This way the provided solution remains cash flow neutral for the client. This also means that in a situation where the energy savings are smaller than expected, the service fee will be adjusted downwards, whereas in a situation where the energy savings are higher than expected, the difference will be divided over the EES provider / client (typically 50/50). Consequently, the EES provider is incentivised to focus on realising the agreed level of energy savings, but without being exposed to the potential credit risk of the client and without having these assets on its own balance sheet. **This built-in incentive** may be an additional argument for the FI to grant the refinancing option.

In conclusion, the proposed concept may be appropriate to finance smaller EPC projects. **Nevertheless, it remains an absolute necessity that the transaction costs be kept to a minimum**.

Finally, it is uncertain to what extent this approach will provide a solution for *non-public sector* clients. Given the credit risks associated with private clients, the FI buying the accounts receivables from the EES provider will apply a risk premium on the purchase price. Hence, the EES provider's price setting for the instalment sale to its client is likely to take this risk premium into account, which would drive the price upward. On the other hand, the concept may offer interesting perspectives for public actors such as municipal administrations, schools and hospitals, since for these clients the risk premium related to their creditworthiness is very close to zero.

5.1.1 Category of refinancing scheme

The principle of sale of receivables is agreed between the EES provider and the EES Client *before* the initial financing of the project. It is already incorporated in the EPC contract between these two parties.

5.1.2 Country

The concept of sale of "receivables" as developed by Belfius bank is only commercialised in Belgium.

5.1.3 Scope

The scope of the refinancing scheme is national. There are no limitations with respect to sector or type of measure. The system is in principle applicable to all EPC contracts, the only requirement being that the implementation of the EPC contract starts with installing equipment that has a considerable financial share in the EPC, as the **refinancing concept only applies to the installation part of the EPC**, not to the service part.

5.1.4 Key actors

Financing institution providing refinancing

So far only Belfius bank is providing this refinancing solution in Belgium.

Providers

Any EES provider is eligible in principle, although the scheme is likely to be more attractive for smaller EES providers involved in smaller EPC contracts that do not allow an SPV or other similar off-balance sheet mechanism to be set up.

Client sector

The scheme is intended for those clients that have a low/zero default risk and hence are able to sign the "without recourse clause" in a credible manner. In practice, these turn out to be public sector clients. In case other types of customers could provide similar levels of creditworthiness, e.g. via guarantee funds or insurance systems, they could be candidates as well.

Involvement of project facilitators

Although the role of EPC facilitators is deemed highly relevant in the qualitative development of an EPC project, their assistance is not required in setting up a refinancing solution.

Programme administrator

In Belgium, there is no programme administrator or promotor involved in the scheme.

5.1.5 Related energy efficiency service

The FI is in principle willing to offer the refinancing service for any EES, so long as the performance risk of the particular EES remains with the EES provider. The terminology sometimes used by the FI is **cession of "abstracted" receivables, meaning that the receivables are "abstract" from the performance risk ("without recourse").**

5.1.6 Refinancing process

The process of refinancing basically consists of three steps:

1. **At the time of drafting the EPC contract between the EES client and the EES provider**, a clause is included that states that the EES provider is entitled to transfer the receivables related to the execution of the EPC project (particularly those receivables that are related to investments in EEI hardware, hence the CAPEX part) to the FI.

2. **At the start of the implementation of the EPC contract**, an agreement[4] is signed between the EES provider and the FI on the future sale of receivables.
3. **At the provisional commissioning** (a legally defined term[5]) of the installed equipment that is needed to realise the energy efficiency measures, the sale of receivables becomes effective.

5.1.7 Overall results, success and bottlenecks

So far, the scheme has not been especially successful in Belgium, for various reasons.

The scheme assumes that EES clients are able and willing to accept the "non-recourse" clause, which is a very hard line being drawn between financial and performance risk (cf. Article 5 of the Financial annex to the EPC contract). The "non-recourse" clause implies that the EES clients must pay the instalments to the refinancing institution, no matter what. This means, for example, that the EES client cannot reduce its payments to the refinancing institution justifying it by insufficient performance of the EES provider, nor by any other external or internal circumstance. Public sector clients in principle fall into this category. However, public sector clients may also consider obtaining funds via a *direct* loan from a bank compared to third-party finance through the EES provider (including the option of sale of receivables). Direct loans are less expensive, which explains why the system of sale of receivables is not always attractive, hence not often used. This may change if other reasons prevail, e.g. off-balance sheet requirements as described in the EUROSTAT guidance note.

When considering non-public sector clients, to be able to sign a "non-recourse" clause, they would need to reach this creditworthiness status by buying this via an insurance premium, which would increase the financing cost. Another option might consist of being covered by a national/regional guarantee system that backs the creditworthiness of the EES provider. However, such a system does not exist yet in Belgium/Flanders.

5.1.8 Risk management

The refinancing institution only assumes the risk of a client's bankruptcy. All other risks (e.g. performance risks) remain with the EES provider.

The sale of receivables is without recourse, which means that the client pays the refinancing institution in any case. The terminology used by the refinancing institution to describe this non-conditional repayment by the client to the bank is "abstracted" cession of receivables.

[4] Dutch: *Overeenkomst inzake overdracht van schuldvorderingen*.
[5] "Provisional acceptance" is a legally defined term in the Belgian construction realm. It means that the equipment is conditionally handed over to the client, while both parties agree which amendments still need to be made.

So far, no other guarantee mechanisms have been implemented in Belgium. The Belgian ESCO association, BELESCO, has been advocating the establishment of some sort of guarantee mechanism in the last several years.

Financing through sales of receivables may be attractive to EES providers for several reasons:

1) The credit risk is transferred from the EES provider to the refinancing institution.
2) The performance risk does not concern the refinancing institution, since the EES provider guarantees the savings towards the final beneficiary, who in turn pays the instalments to the refinancing institution.
3) The financing of the EEI hardware does not have a long-term impact on the EES provider's balance sheet, implying that more EPC projects can be absorbed by the EES provider over time, which enables the EES provider to grow.

5.1.9 Contractual stipulations

The overall process consists of three steps (cf. 3.1.6 above):

- **At the time of drafting the EPC contract between EES client and EES provider** a clause is included that states that the EES provider is entitled to transfer the receivables, which are related to the execution of the EPC project (related to the investments in EEI hardware, hence the CAPEX part), to the FI without approval by the EES client.
- **At the start of the implementation of the EPC contract**, an agreement[6] is signed between the EES provider and the FI on the future sale of receivables.
- **Soon after the provisional commissioning** ("*voorlopige oplevering"* in Dutch, this is a legally defined term) **of the installed equipment** that is needed to realise the energy efficiency measures, the sale of receivables becomes effective.

To make this three-step process work, several conditions must be met:

- Implementation of an EPC contract by **distinguishing between hardware to be installed and services to be provided**. The refinancing arrangement is only applicable to the hardware part.
- A clear **distinction between credit and performance risk**, by having an EES client that is able and willing to accept the "non-recourse" clause which is imposed by the refinancing institution on the EES client after the instalment sale.
- A **commissioning process that is well defined** and leaves no room for interpretation. This is important, as the success of implementing an EPC

[6] Dutch: *Overeenkomst inzake overdracht van schuldvorderingen*.

project may be jeopardised from the start by an incorrect installation of equipment. This, in turn, will have an impact on the cash flow generation that is supposed to enable the repayments to the FI after the instalment sale.

5.1.10 Taxation

- As in any other commercial transaction, VAT is charged by the EES provider to the EES client both on the equipment provided and the services delivered.
- The VAT on the equipment (hardware) is due at the commissioning. This means that a significant amount of VAT will have to be paid at the start of the EPC project. This may be a burden for those customers who cannot deduct VAT (e.g. public sector customers).
- The VAT on the services is synchronised with the invoicing of the EPC services, which normally takes place quarterly.
- There is no VAT applicable on the sale of receivables from the EES provider to the FI.

5.1.11 Cost structure of the refinancing model

The refinancing cost equals the cost of similar financing approaches. It is actually 0.2 – 0.4% more expensive than a direct loan to an end client. This additional cost is justified by the FI as being the additional administrative work to be conducted by the FI. The financial risk is the same.

5.1.12 Subsidy/Incentive

There is no refinancing incentive or subsidy in Belgium. Belfius bank was supported by the EIB under the Private Finance for Energy Efficiency (PF4EE) facility.

5.2 Example case: EPC project at the Sint-Jozefinstituut school in Bokrijk

5.2.1 Location

Bokrijk, Province of Limburg, Belgium

5.2.2 Key actors

Financing institution providing refinancing

Belfius Bank

http://www.belfius.be

Provider

EPC Provider/ EES provider: Wattson

https://www.wattson.be/

Project facilitator

None

Client

School: Sint-Jozefinstituut in Bokrijk, Belgium.

5.2.3 Related energy efficiency service

The EES provider delivers EPC services based on the shared savings model.

5.2.4 Refinancing

Subject of refinancing

The refinancing only pertains to the assets which were installed at the client's premises (the "CAPEX" part – the hardware) not to the EPC service contract (the "OPEX" part).

Share of the expected contracting rate actually forfaited

100% of the CAPEX investments are forfaited.

Refinancing instruments

The initial financing approach of the EES provider is on-balance debt financing.

5.2.5 Refinancing process

Initially, the EES provider - ESCO Wattson - invested in EEI measures at the EES client's premises with a loan from Belfius bank. As soon as these assets were commissioned, the assets were sold to the client via a so-called instalment sale. Until that moment, the assets were on its own balance sheet. Simultaneously, the EES provider initiates a sale of receivables with an FI. The process is described in more detail in paragraphs 5.1.6 and 5.1.9 above.

5.2.6 Economic summary

The total investment cost amounts to EUR 900,000.

The EPC contract was launched in 2018 and lasts 14 years. An energy reduction of approximately 35% is to be expected. With regards to CO_2, a reduction of 50% is anticipated.

Meanwhile, the first operational year (2019) is administratively processed and assessed. The achieved savings correspond with the estimated savings in the business case.

5.2.7 Subsidy/Incentive

The project has not received any subsidies specifically related to promoting the concept of EPC. That being said, Belfius bank was able to offer more competitive financial conditions than other banks due to support from the PF4EE-facility from the EIB.

5.2.8 Construction measures

No major construction measures were taken in the Sint-Jozefinstituut school. The focus was on more efficient technical installations, renewable energy sources and insulation measures.

5.2.9 Energy efficiency improvement measures

The EEI measures deal with lighting replacement, new boiler rooms, smarter HVAC control and monitoring, insulation and a small PV system.

6 PRIVATE FINANCE BUILDING ENERGY EFFICIENCY FACILITY ("BEEF")

6.1 General overview of the (re)financing mechanism

The **Buildings Energy Efficiency Facility ("BEEF") model** is a private sector initiative, **developed by Funding for Future B.V.** focused on advanced deep renovation of multifamily/social housing and public buildings to deliver a safe, healthy and comfortable environment guaranteed by energy savings. The first facility was set up in Latvia and is now being replicated in several EU countries.

Given its importance and the looming housing crisis, BEEF first concentrated its effort on the multifamily residential buildings on the vertical value chain. The methodology follows a multi-disciplinary approach necessary to meet the complex translation from project finance to a standardised bankable process.

In addition to an energy audit, the EES provider also undertakes a structural analysis of the building. The essential components of the BEEF methodology are established in a set of Investment Policy Guidelines and Standards, which govern eligibility, process, and contractual arrangements from the legal, technical and financial perspectives. The purpose of pre-defined technical, legal and financial guidelines for energy efficiency improvement measures and building renovation is to create an investment environment with uniform criteria that guides the decision-making process.

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 based on, at minimum, government regulations and EU directives. Confirmation from an independent auditor that the contractual targets have been achieved will trigger the agreed disbursements. The entire structure ensures that the building owner receives a service ensuring the good order of the buildings, including maintenance during the contract period. The owner pays through an on-bill repayment mechanism, as a single bill is received, which includes heating, services (management and maintenance) and capital expenditures. Property managers, housing associations or even the EES providers can act as the administrator in the payment process.

6.1.1 Category of refinancing scheme

Forfaiting as a subset of pre-defined Investment Package.

6.1.2 Country

The BEEF model already exists in Latvia ("LABEEF") and Bulgaria ("BULBEEF") and is currently in the process of being set up in other countries, including Austria, Poland, Slovakia and potentially Croatia.

6.1.3 Scope

- International
- List of measures – includes all EE building measures together with optional structural measures (e.g. investments into safety or comfort) and aesthetic measures.

6.1.4 Key actors

Financing institution providing refinancing

- BEEF is a special purpose investment vehicle (SPV) managed by specialised fund managers, set up to purchase long-term EPCs for buildings based on compliance with its standardised processes, legal documentations and investment guideline targets.
- Private sustainability investors and multilateral banks provide funding to BEEF.

Providers

Any service provider with the necessary know-how as well as construction companies. Standardised and transparent contractual arrangements allow for multiple players and consortiums to provide the service.

Client sector

Multifamily housing, social housing and the public sector.

Involvement of project facilitators

Considering the scheme is relatively new and innovative, the role of project facilitators has been minimal. To date, the onus for project development has been on the EES developers as well as the facility managers. As a facility is being registered across EU countries, the role of project facilitators will become more important. Given lack of trust in building renovation, particularly in the multifamily sector, one strategy that was followed in Latvia was to set up a specialised NGO that provides support to owners before, throughout and after the renovation process.

Programme administrators

The facility is operated and managed by the facility manager only. Administration of any public funding available for specific projects in the form of grants falls outside the scope of the facility.

6.1.5 Related energy efficiency service

There are two investment packages available: EPC+ and EPC++ based on required minimum energy efficiency improvements, regulatory health and safety measures and additional measures (such as staircase improvements, strengthening of suspended balconies, entrance hall refurbishment, etc.).

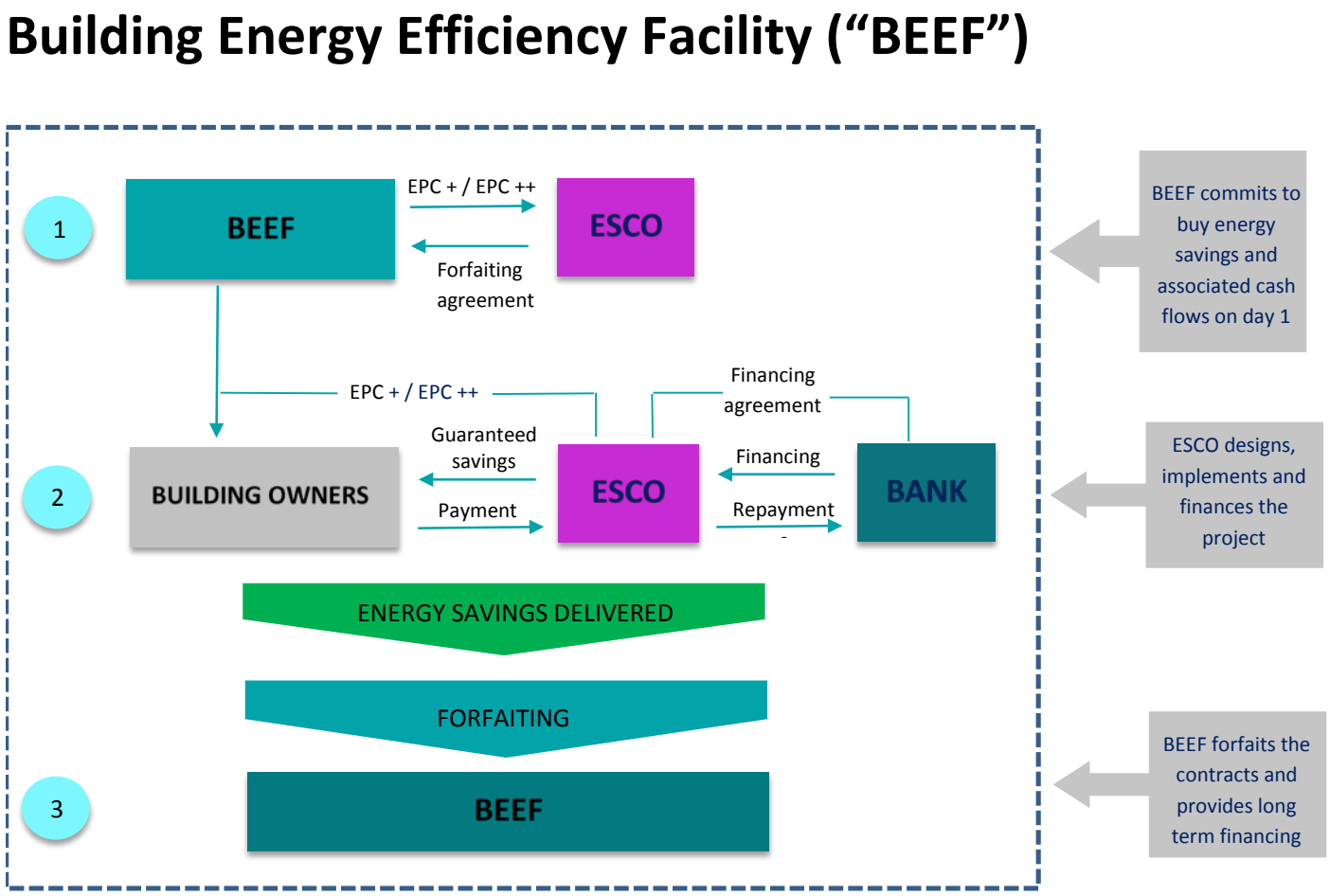
- Every project opportunity commences with the **completion of both an energy audit**, completed by an independently certified energy auditor, and a **technical inspection of the building** (civil engineering appraisal), given the focus of the scheme is to deliver "Guaranteed Safety, Health and Comfort"™.
- **The renovation project is designed** so that it meets BEEF's Policy Investment Guidelines and Standards. Therefore, all project parameters, including implementation, forfaiting, maintenance and rights and obligations of all parties are agreed as inputs to the design stage.
- Project financing approval, monitoring and reporting is managed through an online platform.
- Upon receiving **approval/commitment for purchase[7] of long-term cash flows** from BEEF, the EES provider is responsible for **arranging the financing for the implementation phase** of the project. BEEF acts as a "gatekeeper" for owners by ensuring standards and guidelines are met. With such a commitment made at the pre-implementation phase, the company can approach the bank to secure bridge financing.
- Once the bridge financing is secured, the EES provider can start **implementing the project**, following each country's specific rules and regulations.
- One heating season after project commissioning, an independent auditor **will verify the achieved energy savings**.
- Once the savings are verified, BEEF provides the **financing by purchasing at least 80% of the receivables from the EES provider** (in case of a bank loan, funds are transferred to the corresponding bank account for the relevant amount).
- **A maintenance agreement** is also signed between the building owner and the EES provider or a third-party maintenance company. The maintenance fee is not forfeited, but BEEF has rights to replacement of the contractor. Maintenance is not tied to the savings guarantee, but ensures savings are delivered. The energy savings can cover the fee, depending on the length of the contract.

[7] According to the REFINE project definitions and from a cash flow perspective, the transaction is defined as refinancing. However, from an ESIF financial instrument perspective, "the forfaiting transaction is not considered as refinancing, because the arrangement is a necessary part of the project implementation and concluded before the physical completion of the project".

- **The investment cost is repaid** through an on-bill repayment mechanism and is usually administered by the house maintenance company in conjunction with BEEF.

6.1.6 Refinancing process

Figure 4 BEEF refinancing process



6.1.7 Overall results, success and bottlenecks

- Innovate private finance mechanism already established in Latvia (LABEEF) and now introduced in several EU countries.
- Addresses significant market gap in terms of long-term financing for buildings renovation (20-30 years).
- Although the first set of projects were completed in the multifamily housing sector, the investment package is applicable to both the residential and public sector.
- Bottlenecks:
    - In the public sector, regulatory limitations on the duration of EPC contracts and on-/off-balance sheet treatment (in Latvia and Slovakia this issue has now been addressed).
    - In the multifamily housing sector, the fragmented ownership structure is a challenge.

6.1.8 Risk management

Throughout the implementation process the risk remains with the EES provider. Once the project has been implemented and the facility purchases up to 80% of receivables, the repayment risk is transferred to the facility. The remaining 20% provide financial resources/incentives for contractors to remain committed to deliver savings.

Subject to performance in subsequent years, up to 100% can be purchased. In terms of payment flows, 100% is paid to the facility and then 20% to the EES provider.

The performance risk after implementation remains with the EES provider or can be transferred to a third party, subject to approval by the facility. The EES provider guarantees performance for the works that have been undertaken. Standardised building insurance and a project performance guarantee are put in place.

6.1.9 Contractual stipulations

The process is contractually governed through a set of pre-defined **Policy Investment Guidelines and Standards**. All contracts and agreements are agreed in advance of the works.

The Investment Policy Guidelines include eligibility of the EES provider (track record) and final beneficiary (payment history). The guidelines contain well-defined and transparent contract templates and agreements, including specific EPC for multifamily buildings, forfaiting agreement and maintenance agreement, all of which have been verified and approved by international consultants and multilateral development banks.

6.1.10 Taxation

In Latvia, the concept of reverse VAT, where the EES provider is liable for VAT only upon issuance of invoices to the final beneficiary, has been introduced.

6.1.11 Cost structure of the refinancing model

The cost structure is project specific and driven by the final beneficiary and EES provider. The cost of financing is again dependent on whether it is a public or residential building and the extent of guarantees provided. However, given that the contracts and procedures are standardised, these costs are kept to a minimum, especially as scale builds up. Approval also takes place through an online platform, which further minimises costs and streamlines the whole process.

6.1.12 Subsidy/Incentive

In Latvia, a programme run by the Altum Development Bank has provided subsidies for EPC projects for residential buildings. Projects obtaining a subsidy from Altum Development Bank may also be a subject of financing by BEEF.

6.2 Example case: Multifamily residential building in Riga

6.2.1 Location

City of Riga; building type: 467 residential building series; floors: 5; staircases: 5; total area: 3,433 m²; number of households: 60; year of construction: 1970.

6.2.2 Key actors

Financing institution providing refinancing

Latvian Building Energy Efficiency Facility (LABEEF)

Investors

Funding for Future B.V., European Bank for Reconstruction & Development, third-party institutional investors

Provider

EPC provider: RenEsco

Project facilitator & facility manager

Ekiburijs (NGO) & Funding for Future BV

Client

Residents through a homeowner association

6.2.3 Related energy efficiency service

EPC+ energy efficiency improvement measures and additional structural safety improvements (balcony slabs reinforcement, roof cover and drainage, etc.)

6.2.4 Refinancing

Subject of refinancing

- On average, 80% of the receivables of the EPC+ contract was financed after one heating season, when savings were verified by an independent auditor.
- 49% of the investment costs were provided as a subsidy by Development Bank Altum under an EU programme.

Share of the expected contracting rate actually forfaited

- Project costs: EUR 671,881;
- 49% of the costs were financed by a subsidy;
- 51% of the project costs were financed by own financing / LABEEF via EPC+ contract;
- EUR 274,127 was forfaited by LABEEF post-implementation, agreed in advance.

Refinancing instruments

The funding is provided through the purchase of long-term EPC+ contract with a duration of 20 to 30 years, which removes the liabilities from the EES provider's balance sheet.

6.2.5 Refinancing process

The EPC+ provider:

- arranges the financing for project implementation;
- signs the Investment Package, which incorporates EPC+, Maintenance Agreement and Forfaiting Agreement prior to project implementation;
- receives the pre-agreed payment from LABEEF, once the savings are verified by an independent auditor;
- provides maintenance throughout the contract or can outsource to third-party subject to LABEEF approval.

The beneficiary:

- signs the EPC+ contract with the EES provider;
- pays the costs of energy management directly to LABEEF through a housing management company / maintenance company (through an on-bill repayment

mechanism), which pays to the provider the part of the financing that was not forfaited (the repayment profile is agreed in advance, but often done in 12 equal instalments).

6.2.6 Economic summary

The following values do not include VAT:

- Guaranteed savings: 309.3 MW/h year;
- Contract length: 20 years;
- Investment costs: EUR 671,881;
- Other costs: maintenance fee 3%; data collection and administration 3%.

6.2.7 Subsidy/Incentive

Subsidy from Development Bank Altum: 49% of investment costs.

6.2.8 Timetable

The whole implementation process was commenced in September 2017 by an initial discussion with the owners and was completed in February 2020.

The major steps of the project process included an energy audit, identification of measures, homeowners' decision (majority), procurement of construction company, Altum approval, EPC+ and other supporting documents negotiations, and construction (24 weeks).

The actual implementation took 6-9 months depending on project specifics.

6.2.9 Construction measures

Structural improvements (balcony slabs reinforcement, roof cover and drainage, etc.)

6.2.10 Energy efficiency measures

Situation before the project:

- outdated space heating system;
- centralised domestic hot water system in critical condition;
- insufficient number of air exchanges;
- large heat loss through the building's façade elements;
- roof leakages and damaged rainwater canalisation system.

Energy efficiency measures implemented:

- thermal insulation of all building envelope (ventilated façade);

- replacement of original windows and doors;
- new heating and hot water system;
- ventilation system repairs.

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