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REFINE 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 purchases 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 INTRODUCTION

This report was developed as part of the REFINE project, funded by the EU's Horizon 2020 programme. The project aims to contribute to the supply of sufficient and attractive financing sources for EEI (Energy Efficiency Improvement) investments through the enhancement of **refinancing schemes**, which are important amplifiers of the market growth.

In particular, this document provides an introduction to a specific **rating system** that helps to assess the **refinanceability of energy efficiency service (EES) projects.** This rating system has been developed in the frame of the EU-project REFINE.

The REFINE consortium designed a risk assessment system which can be applied specifically when a financing institution analyses the refinanceability of an EES project. The rating system was developed by the project partner BANKIA with major contributions from e7 and FUNDING FOR FUTURE.

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
- diminishing financial institutions' due diligence and transaction costs

The rating system consists of two documents:

- The rating system template, which is an elaborated Excel-file directly applicable for the evaluation of EES projects¹;
- This documents consisting of explanatory notes for the use of the rating system

1.1 EES projects and cashflows

EES (Energy Efficiency Service) projects are implemented by EES providers that conduct Energy Performance Contracting (EPC) or Energy Supply Contracting (ESC) projects for EES clients (e.g., municipalities, industry, SMEs etc.). Given that for EES clients energy efficiency investments are not a priority, the EES provider steps in and provides an all-in-one service which includes in many cases the financing of the energy efficiency (EE) investment.

The basic principle of the **Energy Performance Contract (EPC)** is all implemented EE investments are prevailingly financed through the realized savings (see Figure 1).

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



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After the start of the EES contract and the implementation of the EE investments, the savings generate cash flows which are used to pay the costs of the project (investment plus services). The risk of unachieved savings (technical risk/performance risks) remains with the EES provider who has to compensate the gap in cash flows.

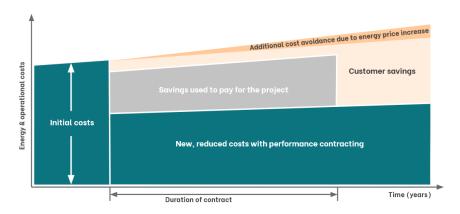


Figure 1 Cash flow generation in an ideal-typical EPC project

In Energy Supply Contracting (ESC) the EES provider implements efficient supply (from fossil and/or renewable sources) in new or existing facilities of the public, industrial, commercial and large residential sectors. The EES project remuneration is performance-based and depends on the useful energy output delivered. Therefore, the ESC model provides an incentive to increase the efficiency of the energy conversion and to reduce primary energy demand. ESC contract covers the outcome and all costs of the services, as well as the commercial, technical and operational risks of the project. ESC projects are a significant boost in efficiency, clear and optimized operational costs, better supply security and the application of the most recent safety standards.

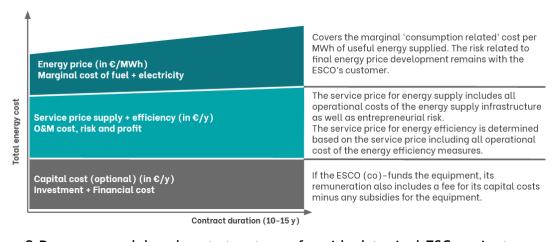


Figure 2 Revenue model and cost structure of an ideal-typical ESC project



1.2 Refinancing of EES projects ²

EPC and ESC contracts are well established practices. In particular, **EES providers** may 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.

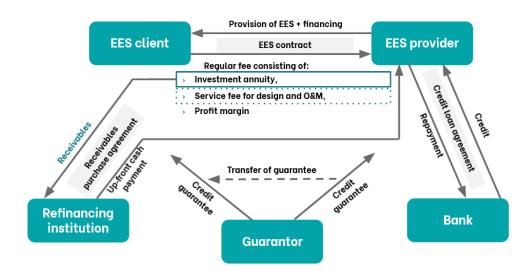


Figure 3 Overview refinancing of EES projects

Refinancing schemes - as schematically shown in Figure 1Figure 3 - 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

² Further information on EES market assessment, refinancing schemes and tools can be found on the REFINE website https://refineproject.eu.



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otherwise. Therefore, the possibility of applying refinancing schemes is a major element supporting the growth of the EES provider.

In this context, it has to be underlined that EES providers, as companies that design and manage EES projects, are usually not prepared to face credit risk, nor are they interested in having the assets of an energy-saving project on their balance sheets, which is especially the case for SMEs. Therefore, they can benefit from refinancing models by accessing easier financing for performance-based EE investments. Finally, refinancing presents a business opportunity with limited risk for **financial institutions**, since they only bear the credit risk on the client side (technical risks generally remain with the EES provider).



2 RISKS OF EES PROJECTS AND THE IMPORTANCE OF RISK ANALYSIS

Credit rating systems are used to define the creditworthiness of a borrower and the transaction. They determine the likelihood that the borrower will be able to pay back a loan within the confines of the loan agreement without defaulting. A high credit rating indicates a strong probability that the loan will be paid back; a poor credit rating suggests that there may be troubles with repayments. Furthermore, credit rating systems determine, if a borrower will be approved for a loan and the price (interest rate) at which the loan will be offered. Credit rating can be applied to any entity, being an individual, a corporation, a provincial authority, or a sovereign government that seeks to borrow money.

In the context of the REFINE-project, rating is seen as a summary appraisal of **refinanceability of EES projects**. Creating a rating system for quick risk evaluation of EES projects supports the mainstreaming process of refinancing schemes, since financial institutions dedicate substantial resources to the risk assessment of a possible investments and thus require suitable tools to implement this task.

As EES investments are not yet considered as common and typical investments, risk evaluation of EES projects is 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 risk assessment approach proposes a methodological structure taking into account he perspectives, both of financial institutions and of EES providers, thus lowering due diligence costs and facilitating the approval process.

Given the complexity and the number of involved parties it is necessary to assess refinancing risks of EES projects through a multi-stage process, which has to 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 (e.g., for EPC the EES provider fully compensates for cash flow gaps due to non-achievement of energy savings). Some sort 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 to carry these risks.

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

- EES provider risks: They consist of credit risks and the operational risk. The
 evaluation of both risk categories can be done by traditional bank risk rating
 approaches.
- Client risks: They consist of credit risks, contractual risk and legal risk. The
 evaluation of these risk categories can be done by traditional bank risk rating
 approaches.
- EES project risks: They include risks during project preparation & execution phases, operation and maintenance risks, performance risk, regulatory risk, country risk, energy price risk. From a financial institutions point of view, the project evaluation process has to identify and evaluate easily those risks that end-up with 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 to the refinanceability of an EES project - therefore, the most important risk mitigant in this context is the use of standardised contract stipulations.

In order to create a suitable risk assessment tool for refinancing of EES projects the above-mentioned risk elements were categorised into **three different risk layers** from a payment default point of view. These risk layers are also used as main structure of the rating template available as an Excel-file³:

- L1. Standard Financial Institution Default Risk Evaluation: This layer refers to the everyday traditional default probability evaluation of any financing operation being analysed by a financial institution. It takes into account 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 to a project that has the inherent goal of providing the client with energy savings leading to a cash surplus that will in turn be used to repay the investment associated to the project.
- L3. Contractual Preparedness Risk Evaluation: This layer refers to the risk associated to a project being refinanced that may arise from the absence of recommended standard EES contract stipulations. 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

³ The Excel-file with the rating system template is availabe on the REFINE-website https://refineproject.eu/



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client does not manage to pass this Standard Financial Institution Default Risk Evaluation (L1) with the financial risk being evaluated as too high, the refinancing process of the EES project will usually not proceed.

The risk assessment in L3 secures the sufficient split between technical and financial risks defined in the EES contract and in the refinancing contract. The recommended standard EES contract stipulations⁴ have to ensure that in the end only the financial risks lie with the financial institutions and the technical risks clearly remain with the EES provider. The inclusion of the "Must-have" contract stipulation makes sure that the project is refinanceable by a financial institution.

The quality of the EES project (L2) adds information to the Go/No-Go decision as well as to the determination of the interest rate. In particular, L2 gains of importance when the credit risk of the EES client is evaluated as medium. In this case a positive evaluation of the project in L2 can increase the likelihood of the refinancing operation.

The following Figure 4 summarises the inter-relationship of the risk layers as described above.



Figure 4 Overview on risk layers related to the refinancing of EES projects

⁴ More details and additional explanations on the required contract stipulations for the EES as well as for the Refinancing Contracts can be found in the Guideline "Standardised Contract Stipulations for Refinancing of Energy Efficiency Services" which is accessible through the REFINE-Website https://refineproject.eu.



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3 DESCRIPTION

In this chapter the Excel rating template for the assessment of refinanceability of EES projects will be explained in more detail item by item⁵

As already introduced in chapter 2 the Excel rating template consists of the following parts as shown in the table below.

Parts/Levels	Description
Risk Analysis Dashboard	The risk analysis dashboard provides a summary of the results of the three evaluation layers (L1, L2, L3).
L1 - Standard Default Risk Evaluation	L1 is dedicated to the EES provider and client risk. Given that financial institutions will implement default risk assessment their own way, this part merely gives a general overview with the aim to inform EES providers, facilitators and EES clients.
L2 - EES Project Rating	This part of the rating system includes the evaluation of risks and mitigants associated to a specific EES project , mainly with respect to the assessment of the cashflow generated by the energy savings.
L3 - Contractual Preparedness for Refinancing	The EES Contract Risk Evaluation refers to the risk related directly to refinancing arrangements, which may come from to the absence of recommended standard EES contract stipulations. Therefore, L3 provides a checklist for contract stipulations.

The Excel rating template conflates the various risk items using **weighting factors**. It has to be underlined, however, that the weighting factors are just proposed values. The user is free to choose the weighting factors he likes. Furthermore, the use of weighting factors has the disadvantage that this approach does not correctly **capture of must-have criteria**. Since the evaluators may have different opinions on the selection of must-have criteria, the authors decided to keep this choice open as well.

Altogether, the Excel rating template provides a **good overview on the risk profile associated to the refinancing of an EES project**, incorporating the risk related to the client and the EES provider as well as the technical and contractual quality of a specific project.

⁵ The Excel template is acessible through the REFINE-Website https://refineproject.eu.



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3.1 Description of Risk Analysis Dashboard

The risk analysis dashboard provides a summary overview on the evaluation process bringing together the results of the three risk assessment layers (L1-L3). It includes following features

- Status of evaluation
- Degree of progress in evaluation
- Score of the evaluation

Furthermore, the dashboard offers the possibility to save the evaluation results at different evaluation times:

- Ex-ante assessment
- Pre-work assessment
- Post-work assessment
- Refinancing assessment

However, the risk analysis dashboard does not provide a single conclusive indicator related the risk of an EES project. The evaluator has to interpret the overall risk profile and derive the final assessment from it.

3.2 Description of L1 Standard Default Risk Evaluation

L1 refers to the traditional default probability evaluation of any financing operation being analysed by a financial institution. As a general provision, a due diligence and credit analysis will be carried out on the debtor and on the legal nature of the instruments being used to ensure that the eligible receivables being discounted are valid, eligible and enforceable.

The template incorporates three dimensions of risks:

- EES provider
- EES Client
- EES project

Since each financing institution has its own way to implement a Standard Default Risk Evaluation, the template proposed in L1 gives an overview on due diligence and credit analysis to be performed by financial institutions. It can be used as a "cheat sheet" for stakeholders on aspects such as the items analysed by financial institutions, mitigants and support documentation.

3.3 Description of L2 EES Project Rating

This part of the rating system includes the evaluation of risks and mitigants associated to a specific energy saving project. The EE Project Rating provides additional important information, since an EES projects generally reduces operating cost and thus improves the situation for the repayment of investment cost.



In this context not only the overall creditworthiness of the EES provider is rated, but the cash-flow generated through the (forecasted) savings of the specific project is taken into account. In the best-case scenario this cash surplus generated by the project gives the client the opportunity to cover directly the payments due by the investment.

As the expected savings are the basis for the cash-flow expectations an accurate and realistic savings calculation is a main requirement for a reliable risk assessment of an EES project. Furthermore, the effective savings achieved by the project have to be evaluated regularly and savings calculation have to be adjusted if necessary.

The proposed L2 rating approach combines weighted and descriptive evaluation of project risks by defining the significance and risk level of each risk item. The risk levels are categorised in low, medium and high risk, whereby the score calculated can be revised by mitigating factors reducing the initial risk level.

With regard to the project participants, the dimensions of the EES provider, the project itself and the client are considered. The template L2 incorporates the various risk items into a comprehensive evaluation scheme including the rating scale and the calculation of the risk score. A detailed description of the single risk items included into the template follows in the next chapters.

2.3.1 Risk items related to the EES provider

The evaluator examines the provider's overall experience in the energy service sector and beyond that the experience level in the specific segment/size of the project (risk items 1.1/1.2).

Moreover, the provider's technological know-how to implement an EES project is evaluated as well as the commercial organization. In this context the experience of the EES provider in explaining the potential savings to the client is assessed (**risk items 1.3/1.4**; Categories used for the above evaluations: experienced - not very experienced - no experience).

A further risk element in the project ranking is the remuneration scheme for achieved energy savings. At this point a remuneration system depending on realization of promised savings, such as saving guarantees or/and a bonus scheme, affects the risk level positively, since it ensures that the EES provider will be highly motivated to achieve the promised savings (risk item 1.5).

2.3.2 Risk items with regard to the project

The evaluation of the project itself reflects the core element of this part of the rating template.

The first aspect of the project ranking is the assessment of the equipment or installation. It sheds light on whether the equipment is protected by an insurance or warranty and for which period it is established (risk item 2.1).

Another factor is the possibility of a guarantee or collateral and to which extent a collateralization can be applied (risk item 2.2).



The technological standard used for the project is also evaluated. A technology which is widely applicable and already tested is considered as low risk, whereas a higher risk is recognized with completely new technology used in the project (risk item 2.3).

The reliability of the savings calculation is an additional criterion in the project rating. A detailed M&V plan according to accepted standards has to be in place for a low-risk evaluation. A mitigating factor can be the assignment of an independent expert for the verification of savings calculations (risk item 2.4).

A further issue is the reliability of the company which performs the operation and maintenance of the installation or equipment. The assurance of operation and maintenance through the EES provider is detected as a risk minimizing factor, whereas companies without track record affects the risk rating negatively (risk item 2.5).

The cash flow generated by energy savings by the project is calculated and assessed during the evaluation process. Cash flow which covers 120 % or more of the payments due can be considered as a benchmark for a low-risk rating (risk item 2.6).

Safeguards implemented in the contract clauses ensuring project continuity for situations that terminate the project (such as duration, force majeure or bankruptcy) are also reviewed in the risk rating (risk item 2.7).

The final aspect in the project assessment is the rating of the additional added value created by the project, such as a reduction of production costs or further competitive advantages (risk item 2.8).

2.3.3 Risk items related to the EES client

Reflecting the client's point of view within the project rating the first aspect evaluated is the client's cooperation in achieving the project goal. At this point it is assessed whether there are the necessary commitments and obligations in the EES contract, such as the assurance of free access for the EES provider to the equipment (risk item 3.1).

A further point is the acceptance by the client for the sales of receivables and the agreement that the client will not transfer his financial obligations to a third party without EES provider's consent (risk item 3.2).

The last criterion is the relationship between the EES provider and the client. This assessment sheds light on the already existing (from similar projects in the past) as well as the current relationship between the both parties (risk item 3.3).



3.4 Description of L3: Contractual Preparedness for Refinancing⁶

The L3 template refers to the risk that EES projects may not be sufficiently prepared due to the absence of recommended standard EES contract and refinancing contract stipulations. The recommended contract stipulations relate closely to the risk items in L2, therefore a reference on L2 template is given to the clauses in the EES contract checklist.

The L3 template is built as a checklist including recommended EES contract stipulations as well refinancing contract stipulations. For both kinds of contracts, the checklist contains two categories:

- Stipulations that must be included in an EES contract as well as in a refinancing contract to make the project refinanceable. If these contract stipulations are not available, financial institutions will not envisage a refinancing arrangement.
- **Stipulations that should be included** in an EES contract as well as in a refinancing contract in order to improve the project's risk valuation.

⁶ Further information on recommended contract stipulations can be found in the guideline "Standardised Contract Stipulations for Refinancing of Energy Efficiency Service Projects" that is available on the REFINE-Website https://refineproject.eu.



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