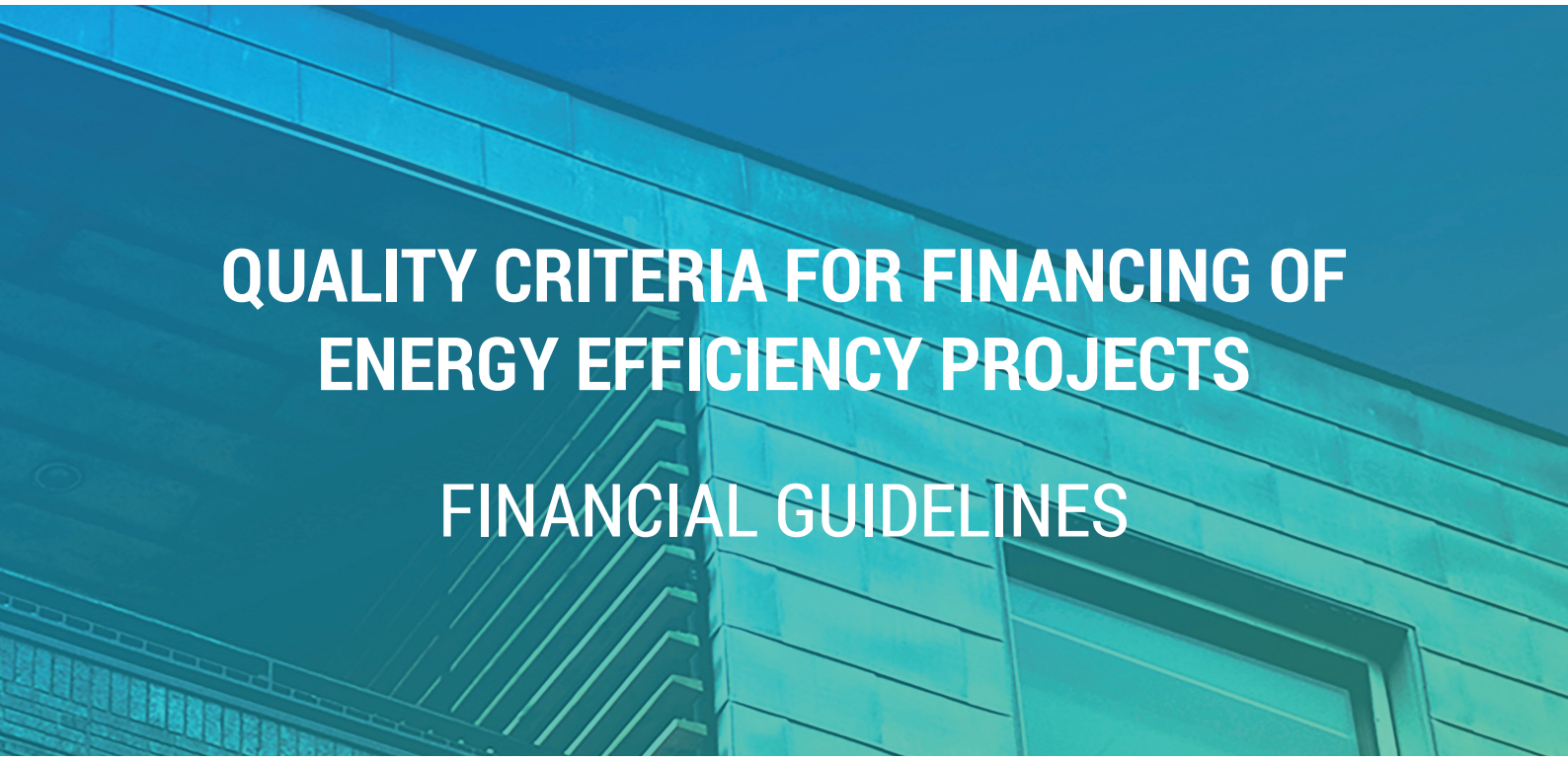

# QUALITY CRITERIA FOR FINANCING OF ENERGY EFFICIENCY PROJECTS

## FINANCIAL GUIDELINES

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# QualitEE PROJECT

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## Disclaimer

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# LIST OF ABBREVIATIONS

| | |
|---|---|
| Energy Efficiency | EE |
| Energy Efficiency Services | EES |
| Energy Performance Contracting | EPC |
| Energy Service Company | ESCO |
| Financial Institution | FI |
| Financial Quality Criterion | FQC |
| Renewable Energy Sources | RES |
| Operational Contracting | OC |
| Energy Supply Contracting | ESC |
| Measurement and Verification | M&V |
| Net present value | NPV |

# 1 INTRODUCTION

## 1.1 Bridging the Gap between Financial Institutions and Energy Efficiency Service Projects

In general, the market potential for the implementation of EES projects is still largely untapped in all European countries and one of the main barriers is in many cases the difficulty for EES projects to attract financing. For many financial institutions, appraisal of value as well as of risks of energy efficiency service projects is still unfamiliar territory. While the collateral value of most energy efficiency projects is generally rather low, generated cash flows as the main source of the value of EES projects are not recognized as being relevant as a source of repayment.

This document presents quality criteria relevant for financing of energy efficiency services (EES). It aims to establish a common understanding for the assessment of bankability of EES projects targeting at financial institutions (FIs), energy service companies (ESCOs) and clients. On the one hand, FQCs help financial institutions to assess the bankability of EES projects. On the other hand, the FQCs support the project developers (ESCOs, EES clients) to prepare and implement their project in a way that facilities financing. Depending on the type of FI and on the given project development phase different information will be relevant.

In this context, the following EES-related definitions apply:

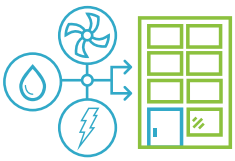
- **Energy Efficiency Service (EES):** Agreed task or tasks designed to lead to an energy efficiency improvement and other agreed performance criteria. The EES shall include energy audit as well as identification, selection and implementation of actions and verification. A documented description of the 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].

- **Partial services connected to EES:** Services that just include parts ("components") of the EES chain like for example energy audits or operational improvements, but are designed to directly or indirectly lead to an energy efficiency improvement.

When assessing the bankability of EES projects, the document puts a focus on the following types of EES:

**Energy Performance Contracting (EPC)**

A contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, verified and monitored during the whole term of the contract, where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial savings.

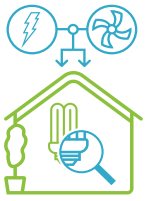


**Operational Contracting (OC)**

Operational contracting is a type of EPC without major investments and is here included under the term Energy Performance Contracting.

**Energy Supply Contracting (ESC)**

A contractual arrangement for the efficient supply of energy such as heat, steam or compressed air. ESC is contracted and measured in Megawatt hours (MWh) delivered[1].



**Integrated Energy Contracting (IEC)**

A combination of energy efficiency measures with energy supply contracting typically with short term ‚operational verification' rather than ongoing Measurement & Verification. In IEC energy is typically provided by use of RES.

1 This definition is a simplified version of IEA DSM Task force 16 definition. The model often includes purchasing of input energy fuels and is comparable to district heating or the French "Contract chauffage". The scope of energy efficiency measures is limited to the energy supply side ("before the meter").

The Financial Guidelines have to be interpreted in the context of the document Draft Guidelines of European Technical Quality Criteria, which has been published by the expert team of the QualitEE project in December 2017 (www.qualitee.eu). Whereas the Technical Quality Criteria address the target group of potential EES clients and enable them to select poor projects from good quality-projects, the Financial Guidelines aim at facilitating the communication between FIs, ESCOs and clients of EES projects by means of commonly called Financial Quality Criteria (FQCs).

Previous work on financing of energy efficiency has been carried out by several institutions like EVO (2009), IEA (2014), EDF (2014), CEN/CENELEC (2017), EEFIG (2017), and several more (cf. Bleyl et al. 2017). Therefore, these Guidelines build on the existing valuable experiences.

## 1.2 Technical Quality of EES Projects

According to the Investor's Confidence Project (ICP), well-conceived and well-executed energy efficiency projects can be divided in five life-cycle categories with specific project tasks and quality assurance tasks (EDF 2014):

- Baselining
- Saving calculations
- Design, construction, and verification
- Operations, Maintenance, and monitoring
- Measurement and Verification

This has been complemented by the QualitEE-project that has elaborated a list of Technical Quality Criteria specifically for EES projects, referring to the following technical characteristics of EES projects

- Adequacy of the analysis approach chosen by the EES provider
- Quality of implementation of technical energy efficiency improvement measures
- Design of the savings guarantee
- Approach applied for the verification of energy savings
- Value retention and maintenance
- Communication between the EES provider and the client
- Compliance with users' comfort requirements
- Information and motivation of users
- Comprehensible contractual stipulations for the definition of specific regulatory requirements

Generally, it is not necessary that FIs understand all technical details of EES projects but it is useful for them to understand where and how values are generated and secured in EES projects. This encompasses a sound understanding of cash flow calculations and it includes an assessment of risk. Clients or ESCO's that require external sources of financing for their projects will - on the other hand - have to understand basic principles of financing. Documentation of EES projects will have to be prepared in a way that relevant financial parameters can directly be derived from provided data. A thorough financial assessment will have to consider the entire life-cycle, however, with specific focus and relevance. Furthermore, necessary information will be different for financing instruments applicable for the very project constellation.

## 1.3 Financing Instruments for EES Projects

In general, for EES projects the same financing instruments are available as for any other investment (cf. Bleyl-Androschin/ Schinnerl 2010), primarily as follows:

- Credit financing
- Leasing financing
- Project financing
- Cession
- Forfaiting of contracting rates

**Credit financing:** A lender (FI) provides a borrower – in the case of EES this may be either the EES provider or the client – with capital for a defined purpose over a fixed period of time. The credit has to be settled with fixed payments that include the repayment of the debt, interest rates plus additional costs. The maximum amount of credit financing is limited by the credit-ratio of the borrower based on his balance sheet, which defines the creditworthiness of the borrower.

**Leasing** is defined as obtaining the exclusive right to use (and not possess) an asset. The owner of the asset is called lessor while the lessee is responsible for the repayment of the lease. Leasing is a form of asset-related financing and is distinguished in operating leasing – a form very similar to tenantry where the lessor is responsible for repair and maintenance – and financial leasing, where the lessor is typically the legal owner of the asset for the duration of the lease, while the lessee has operating control over the asset.

**Project finance** is based prevailingly upon the projected cash flows of the project rather than the balance sheets of its sponsors. Usually, the financing structure consists of equity investors and a number of banks that provide non-recourse loans, which are secured by the project assets and paid entirely from project cash flow, rather than from the general assets or creditworthiness of the project sponsors (Scott Hoffman 2007). Project finance requires high effort regarding due-diligence and developing the financing structure – frequently connected with the creation of a special purpose entity – and is thus limited to large projects, (project volume > €10 million, typically in infrastructure and industry).

**Cession** is defined as a transfer of future cash flows for the cessionary or cedent (EES provider) to the buyer (FIs). This can be used as (additional) collateral for credit or lease financing.

**Forfaiting** is a specific form of cession, where future cash flows are sold to a FI in return to a one-time payment without an additional financing agreement (credit or leasing).

From the client's perspective, the following dimensions have to be considered for the selection of an appropriate financing instrument for energy efficiency projects:

- Cost of financing (interest rates, fees, extend of financing, subsidies, ...)
- Legal aspects (conditions of contract, flexibility, property aspects, ownership, ...)
- Collateral/Securities (cash flows, equity, assets, land register, personal liability, ...)
- Taxation
- Balance sheet & accounting aspects
- Management expenditures/Transaction cost

There is no general rule for the selection of financing instruments for different types of energy efficiency service projects; in fact the degree of freedom in "selecting" a financing instrument will be limited by the situation of the EES provider, the client (e.g. limitations in creditworthiness) and/or the project type (e.g. small project volume).

## 1.4 Value and Risks of EES Projects

From the perspective of financial institutions two elements are of utmost relevance in order to assess the value and risk of energy efficiency projects:

- Is the cash flow generated through energy savings sufficient and predictable enough to cover the required repayment – in other words, how big is the performance risk?
- What are the risks associated with potential failure or bankruptcy of the EES provider?
- What are the risks associated with potential failure or bankruptcy of the client where the EES project is implemented? For example, risks associated with private clients (tertiary sector, industry) may be very different from those with public clients (state, municipal).
- To which degree the technical equipment (assets) can be used for (additional) collateralization?
- In addition, for some types of EES projects non-energy benefits (e.g. increased asset value, increased productivity, increases health and well-being) might be created and could be taken into consideration as well when assessing bankability of EES projects (IEA 2014, Energy Efficiency Financial Institutions Group 2017, Bleyl et al. 2017).

It has to be underlined, however, that EES projects are frequently hampered by typical characteristics, which complicate financing of this type of projects:

- As energy efficiency improvements are intangible, many EES projects are perceived as complex and granular. In turn, projects struggle with an unfavorable ratio between perceived project revenue and transaction cost – on the part of FI this refers mainly to due diligence cost.
- Furthermore, most EES projects are small. The approach of project finance cannot be applied without bundling a number of small projects to one larger project. In real life, however, bundling itself appears to be connected with many difficulties and elevated complexity.
- EES projects are “brain-driven”, i.e. a considerable share of the project value does not relate to the value of the invested assets, but rather on the know-how behind the optimal application of the assets. In turn, this means that value of assets usually does not cover the full amount of the outstanding loan.
- Finally, the cash flow of EES projects comes from cost savings and is not generated through sales on the market. Therefore, as compared to renewable electricity projects where the cash flow is generated through sales on the electricity markets the risk of bankruptcy of the client is more pronounced in EES projects

## 1.5 Derivation of Financial Quality Criteria (FQC)

Against the background described in the preceding chapters, the following financial quality criteria were derived:

- FQC 1: Quality of cash flow prediction
- FQC 2: Incentive structure for cash flow generation
- FQC 3: Exploitation of cash flows
- FQC 4: Value and exploitation of assets (technical equipment)
- FQC 5: Non-energy benefits of EES projects

Generally, it is assumed that projects that fulfil the FQCs are to be considered as bankable projects from the point of view of FIs. This is true, however, only within the limits predefined by financing instrument applied in the given project:

- If the project is financed by a loan the creditworthiness – and thus the balance sheet ratios – will remain decisive factor, largely independent from the quality of the project itself.
- Leasing will be possible only to the amount that is covered by the value of the assets.
- Project financing will be accessible only for larger size projects or for project bundles.

Table 1 puts the selected Financial Quality Criteria into relation to the most relevant aspects regarding value and risk assessment of EES projects.

| | Cash Flows | Collateralisation of technical equipment | Failure or bankruptcy of EES provider | Failure or bankruptcy of EES client |
|---|---|---|---|---|
| **FQC 1** Quality of Cash Flow Prediction | ++ | o | + | + |
| **FQC 2** Incentive Structure for Cash Flow Generation | ++ | o | ++ | o |
| **FQC 3** Exploitation of Cash Flows | ++ | o | ++ | o |
| **FQC 4** Value and Exploitation of Assets (Technical Equipment) | + | ++ | ++ | ++ |
| **FGQ 5** Non-energy Benefits of EES Project | o | o | + | + |

Table 1: Relevance of Financial Quality Criteria for different aspects of financing

## 1.6 Context and Application of the Financial Guidelines

Generally, this document intends to facilitate the communication between financial institutions (FIs), energy service companies (ESCOs) and clients of EES projects. Financial quality criteria (FQCs) shall help to select EES projects eligible for external financing.

In practical terms it is expected that the main target group of the guidelines will be promotors and sponsors of EES projects – i.e. ESCOs and clients – since FIs have proven routines of project appraisal, which slightly differ from each other and which are not easily changed. The FQCs help the project sponsors to pre-assess the bankability of EES projects from the perspective of FIs. ESCOs are requested to provide the necessary information in a form that can be processed by FIs. Clients will directly benefit from the application of FQCs as high quality of the EES project is not only relevant for the financing but also for the economic performance of the project.

Furthermore, practical experience shows that the development of an attractive refinancing cycle through instruments such as cession or forfaiting has become an important driver for the development of EES markets in several European countries. Therefore, we expect that the FQCs are specifically relevant for the preparation of EES projects in a way that they can be more easily refinanced through the sale of future receivables. By refinancing the projects, the initial financiers – either the ESCO or the client – can clear their balance sheets, thus gaining flexibility for financing of new projects. Furthermore, refinancing of projects can be used as a vehicle to bundle a number of smaller projects to a larger package in order to reach the thresholds and enable the involvement of larger investment funds.

# 2 THE FINANCIAL QUALITY CRITERIA

## 2.1 FQC 1 Quality of Cash Flow Prediction

### Background and significance

The value of energy efficiency service projects is mainly defined by predicted future energy cost savings. However, energy cost savings result from a multitude of parameters and preconditions.

The main source for repayment of any financing of EES project is the cash flow generated by agreed and (many times) guaranteed savings. Therefore, it is of utmost relevance for financing institutions to have confidence that cash-flows from the EES project will be generated at a sufficient level regardless of changing framework conditions.

What sometimes is difficult to understand is the fact that savings cannot be measured directly and that an increase of energy efficiency does not necessarily lead to energy savings in absolute terms. Therefore, it is helpful to understand the definition of the main terms of energy efficiency projects:

Energy efficiency is the amount of a physical service (heat, light, power, etc.) in relation to energy consumption needed to provide this service. The increase of energy efficiency can mean to reduce energy consumption for a given service level, it could also mean to increase the service level with the same amount of energy. Service level may also increase to a level where more energy is needed in absolute terms, but energy efficiency is still improved. Depending on the agreement, this later case may have a negative impact on cash flows.

Energy consumption is the absolute amount of energy used to provide a physical service. As shown above, energy efficiency does not necessarily result in a reduction of energy consumption.

Energy savings in the context of energy efficiency service projects are usually defined as the reduction of energy consumption compared to an agreed baseline of energy consumption which defines the amount of energy used for the case that no energy efficiency service project had been implemented (baseline). The definition of the baseline is crucial for the prediction of energy savings - and of cash flows - and it also includes adjustment factors that have to be considered in the case of changing framework conditions like ambient temperature, production level, occupancy etc.

Resulting energy consumption mainly depends on the quality of implementation of the energy efficiency service project but also on the quality of maintenance and operation. Hence, cash flow prediction must also consider these aspects.

Finally, a measurement and verification (M&V) concept should be available as the methodological basis for the calculation of energy savings after implementation of the project.

## Assessment criteria and verification process

The Assessment criteria and verification process for FQC 1 is described in table 3.

| AC | Assessment Criterion | Proof | Assessment | Comment |
|---|---|---|---|---|
| 1-1 | Measurement and Verification (M&V) Plan | Availability of an M&V Plan according to international standards with the following elements:<br>• clear specification of the standard that is used for M&V<br>• timing of M&V activities<br>• specification of calculation algorithms<br>• responsible stakeholders for the implementation of M&V | **ex-ante:** Is an M&V concept according to international standards available?<br>**ex-post:** Availability of periodical M&V reports in line with the M&V Plan? | Existing standards:<br>• IPMVP<br>• ISO 50015:2014 |
| 1-2 | Clear definition of the baseline used for the calculation of energy savings and M&V | Baseline definition has to include the following information:<br>• Adjustment factors shall be raised, approved by the client and included into the baseline.<br>• Climate information<br>• Energy prices should be one of the major adjustment factors, i.e. project cash flows should be independent from fluctuations in energy prices | **ex-ante:** Is the baseline sufficiently defined and does it include adjustment factors?<br>**ex-post:** Review of M&V reports. | Baseline and adjustment factors have to be derived from existing energy consumption (energy bills, measurement data, etc.) and analysis of operation of previous years. |
| 1-3 | Scenarios for worst, real and best case for cash flows | Availability of a risk analysis for cash flows: Scenarios for worst, best and real case. Scenarios should consider variations in the framework conditions effecting adjustment factors, but they should also include possible deficiencies in implementation. | **ex-ante:** Is a risk analysis for cash flows including worst, real and best case available?<br>**ex-post:** Comparison of cash flows with scenarios including adjustment factors. | |
| 1-4 | Application of best available technology | Best available technology should be applied in the EES project. This can be proven by:<br>• Use of products defined in the EcoDesign regulation, only best classes should be used<br>• Use of products with quality labels<br>• Reference list of implemented projects | **ex-ante:** Does the project refer to a certain standard of technology and does it refer to existing standards? Does it document labels and other proofs for best available technology?<br>**ex-post:** Does the installed equipment meet the defined requirements? | |

Table 3: Assessment criteria and verification process for FQC 1 Cash Flow Prediction

## 2.2 FQC 2 Incentive Structure for Cash Flow Generation

### Background and significance

A bankable EES project has to be structured in a way that the EES provider as well as the EES client have strong incentives to achieve the promised energy savings and thus to generate the project cash flows required for repayment.

At the side of the EES provider this is mainly connected with an incentivising contractual stipulation regarding the savings guarantee. But in many cases, also the client has to contribute to the success of the project by fulfilling his obligations to cooperate. Altogether, a well-balanced risk sharing between the EES provider and the client is critical for cash flow generation. In general, each party should carry those risks that they can handle best. For example, the EES provider should usually carry risks related to analysis, selection, design and implementation of EE measures. In addition, some risks related to the operability of the installed systems may be passed on either to the manufacturer (usually through warranty agreement) or to an insurance. The other risks should remain with the client!

## Assessment criteria and verification process

The Assessment criteria and verification process is described in table 4.

| AC | Assessment criterion | Proof | Verification | Comment |
|---|---|---|---|---|
| 2-1 | Overall risk sharing approach | Distribution of performance risks to the contractual party that is in the best position to handle the specific risks, ensuring at the same time, that this party has the contractual power to manage the risks accordingly | **ex-ante:**<br>a) Specific risk sharing document with the following parts<br>• list of perceived performance risks related to cash flow generation<br>• distribution of risk management to contractual parties (including justification)<br>b) Transposition of the chosen risk management approach to the EES contract | The term "performance risk" in this context refers to all factors that potentially may negatively influence the cash flow generation from energy savings, such as:<br>• poor analysis and design<br>• short-comings in implementation of measures<br>• operational mistakes<br>• fluctuation in usage patterns<br>• user behaviour<br>• energy price changes |
| 2-2 | Dependency of remuneration of EES provider on adherence with the savings guarantee | Saving guarantee type 1: The reduction of remuneration must be, at least, commensurate with the level of the non-attainment of guaranteed energy savings. | On the basis of contractual terms that relate to the guarantee of energy savings | Saving guarantee type 1 leads to higher incentives of the EES provider to actually achieve envisaged energy savings. Therefore, this type of performance guarantee is clearly preferable in terms of incentivising impact.<br>If the remuneration includes an additional bonus for over-performance and/or an extra penalty for under-performance the incentive is even higher. |
| 2-3 | Incentivising stipulations at the client's side | Clear definition of the client's contribution to project success, including<br>• sufficient incentives to collaborate with the EES provider<br>• clear regulation of client's possibilities to impede implementation of EE measures by the EES provider | On the basis of contractual terms | This assessment criterion reflects the role and position of the client. Just to give a few examples from EES practice:<br>• User behaviour is an important influencing factor. Therefore, it is advisable to address this issue in the contract;<br>• One way to do so is to share savings with the client from the very beginning of contract duration;<br>• Stipulations that regulate compensation for the EES provider for those cases where the client refuses to collaborate without any reason |
| 2-4 | Safeguarding of cash flows in case of equipment failure | Conclusion of an insurance contract covering shortfalls in cash flow generation due to breakdown or major failure of the energy saving equipment (beyond risk cover of warranty) | Submission of a policy covering the mentioned risks | There are insurance products on the market (frequently under the term energy efficiency insurance) that are designed for investors in energy conservation measures and go beyond risk cover of warranty. Usually the policies provide cover for material damage (including equipment breakdown) of the installed systems as well as business interruption (protection against loss of revenue in the event of equipment failure). The products are available only for a limited period (hardly beyond five years) and only for selected equipment. |

Table 4: Assessment criteria and verification process for FQC 2 Incentive Structure for Cash Flow Generation

## 2.3 FQC 3 Exploitation of Cash Flows

### Background and significance

Even if an EES is implemented successfully and generates envisaged cash flows, loan repayment may be endangered if the project needs to be restructured because one of the contractual parties (EES provider or EES client) passes through economic difficulties and eventually goes bankrupt. Furthermore, restructuring of an EES contract may be also necessary in cases, where the client sells the facilities in which an EES project has been implemented, or in cases of legal succession.

For these cases, there need to be contractual stipulations that

- ensure – as much as possible – that project implementation is not stopped, but goes on with a new set-up of contractual partners, thus continuing with generation of cash flows from energy savings
- assign prior access to the cash flow to the FI

Taking into account the heterogeneity of approaches that are applied for financing of EES projects the contractual stipulations need to reflect

- the fact whether EES project financing is provided to the EES provider (so-called "third-party financing") or to the EES client
- the different financing instruments that may be applied, such as credit financing, leasing financing, cession, forfaiting.
- Therefore also the assessment of FQC 3 Exploitation of Cash Flows has to be differentiated accordingly.

## Assessment criteria and verification process

The Assessment criteria and verification process is described in table 5.

| AC | Assessment criterion | Proof | Verification | Comment |
|---|---|---|---|---|
| 3-1 | Overall risk sharing approach | Exit strategies have to be prepared and documented in advance of project implementation | **ex ante:**<br>a) Specific document on exit-strategies covering at least the following cases<br>• bankruptcy of either the EES provider or the EES client<br>• sale of facilities by the client<br>• legal succession / replacement of EES provider<br>b) Transposition of the chosen exit-strategies to the EES contract | From the FIs point of view it is important that – as much as possible – project implementation is not stopped, but goes on in a new set-up of contractual partners, thus continuing with generation of cash flows from energy savings |
| 3-2 | Dependency of remuneration of EES provider on adherence with the savings guarantee | Availability of a contractual regulation | Contractual stipulation that enables the EE provider to assign all rights and obligations from the EES contract to a third party without prior consent of the client. | If project financing is provided to an EES provider, that has difficulties to repay the loan, the financing bank may have interest to get direct access to future cash flows (via cession) and eventually to replace the EES provider. |
| 3-3 | Incentivising stipulations at the client's side | Availability of a contractual regulation | Contractual stipulation that enables the EES provider to sell his future receivables as collateral for project financing (usually without waiver of objection) | |
| 3-4 | Safeguarding of cash flows in case of equipment failure | Availability of a contractual regulation | The client's possibility to terminate the contract has to be limited to exceptional cases of long-term breach of duty of the EES provider. Alternatively contract termination can be de-incentivised by a stipulation that obliges the client to pay all due future receivables immediately at the time of contract termination. A similar stipulation is required for the case of decommissioning of the facility where the EES is implemented. | |
| 3-5 | Cash flow exploitation in case of sale of facility | Availability of a contractual regulation | Contractual stipulations that incentivizes the continuation of a project (in case of sale)<br>a) duty of the client to pay all due future receivables immediately at the time of contract termination (see 3-4)<br>b) definition of conditions under which the EES provider has to accept the purchaser of the facility as new client | |

Table 5: Assessment criteria and verification process for FQC 3 Exploitation of Cash Flows

## 2.4 FQC 4 Value and exploitation of Assets (Technical Equipment)

### Background and significance

In EES projects, newly installed technical equipment can be used as collateral. However, in the case of bankruptcy of the borrower or other causes that result in the termination of operation of the project, exploitation of assets depends on the following conditions:

- technical exploitation: assets can be technically removed,
- economic exploitation: assets can be sold for a reasonable price (either to removing them or to use them by new clients in unchanged premises),
- legal exploitation: ownership of remaining assets (e.g. in many countries for assets that are permanently connected to a building ownership automatically passes over to the building owner)

EES projects usually implement new technical equipment in existing facilities. Due to the high technical integration, exploitation will only make sense for parts that can be easily removed from the system and that have a reasonable value of its own. In practice, technical exploitation will only cover a small amount of the value of the whole EES project.

Another form of exploitation of installed equipment is to use the whole energy efficiency project in existing premises with a new client. This way of exploitation is highly dependent on a high level of perpetuation of facilities and production processes.

Beside technical and economic framework conditions it is necessary to clarify the possibility of legal exploitation of assets. Contracts have to include regulations on ownership of equipment for cases of restructuring of the contractual parties.

### Assessment criteria and verification process

The Assessment criteria and verification process is described in table 6.

| AC | Assessment criterion | Proof | Verification | Comment |
|---|---|---|---|---|
| 4-1 | Value of technical equipment for removable parts is defined in the project documentation. | Availability of project documentation including information on the economic value of removable parts. | **ex-ante:** Project documentation allows to select removable parts and defines the economic value of these parts.<br>**ex-post:** Review of value of sold technical equipment | |
| 4-2 | Technical equipment (or at least major parts) can be used for different processes and branches of the client. | Availability of project documentation including information on the use of technical equipment (or parts of the equipment) for changes in processes or branches. | **ex-ante:** Project documentation defines parts of the technical equipment that can be used for different purposes (processes, branches) and process-specific parts.<br>**ex-post:** Review of effects of changes in processes or branches | |
| 4-3 | Contract defines ownership of technical equipment for the case of changed legal structures of the client or the EES provider | Clear regulations in the contract defining ownership of equipment for the following cases<br>• Changes in the legal structure of client<br>• Changes in the legal structure of EES provider<br>• Bankruptcy of client or EES provider | **ex-ante:** Ownership of technical equipment is defined in the case of changes in the legal structure of the client or the EES provider. It should also define ownership for the case of bankruptcy.<br>**ex-post:** Review of changed ownership | |

Table 6 Assessment criteria and verification process for FQC 4 Value and Exploitation of Assets (Technical Equipment)

## 2.5 FQC 5. Non-energy Benefits of EES Project

### Background and significance

EES projects do not only increase energy efficiency with reduced energy costs (compared to the baseline), in most cases these projects have additional (non-energy) benefits that represent a value to the EES client or other stakeholders and therefore may be considered for the financial assessment as well (cf. IEA 2014; Bleyl et al. 2017). The most important non-energy benefits from a client's perspective are:

- Increased work productivity
- Reduced outages of production
- $CO_2$-savings
- Efficient water supply and savings of water resources
- Rental premium
- Sales premium
- Reduced dependency on energy tariffs
- Sustainability image
- Societal benefits

Non-energy benefits can be classified according to the relevance to the business case on the one dimension and along the difficulty of quantification on the other dimension.

### Assessment criterion and verification process

The Assessment criteria and verification process is described in table 7.

| AC | Assessment criterion | Proof | Assessment | Comment |
|---|---|---|---|---|
| 5-1 | List of non-energy benefits is available and classified | Availability of a list of non-energy benefits from the perspective of different stakeholders.<br>This list should be further classified according to different stakeholders, relevance to the EES, and ability to quantification. | **ex-ante:** Project documentation includes non-energy benefits. The list is further classified according to stakeholders and relevance for the EES.<br>**ex-post:** Review of selected indicators for non-energy benefits. | Non-energy benefits (NEB) are synonymous with multiple benefits (MB) or non-energy impacts (NEI) |
| 5-2 | Quantification and monetarisation of non-energy benefits | Availability of quantification of selected non-energy benefits. Where exact values are not available ranges are defined (lower to upper range).<br>Monetarisation of quantified non-energy benefits from the perspective of different stakeholders. | **ex-ante:** Project documentation includes quantification of non-energy benefits and - where possible - also a monetarisation (NPV calculation).<br>**ex-post:** Review of resulting non-energy benefits. | Monetarisation should apply net present value (NPV) approach. |

Table 7 Assessment criteria and verification process for FQC 5 Multiple Benefits of EE Project

# 3 REFERENCES AND FURTHER READING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# THE QUALITEE PROJECT

Funded by the **EU's Horizon 2020 programme**, the QualitEE project aims to increase investment in energy efficiency services in the building sector within the EU and improve trust in service providers. To achieve these aims, quality assessment criteria and business cases for quality assurance schemes have been developed.

The QualitEE consortium comprises **12 partner organisations covering 18 European countries**, an expert advisory board including the European standards body CEN/CENELEC, and 59 supporters from major financial institutions, government bodies, trade associations and certification bodies.

# FINANCIAL GUIDELINES FOR ENERGY EFFICIENCY SERVICES

The **Financial Guidelines** aim to establish a common understanding for the assessment of bankability of energy efficiency services projects. They are targeted for the use of financial institutions, energy services providers and clients. Furthermore, these guidelines define minimum financial information that is required for financial institutions to assess energy efficiency services.

The Financial Guidelines should be interpreted in the context of the **Guidelines of European Technical Quality Criteria**. Whereas the Technical Quality Criteria are primarily targeted at potential energy efficiency services clients, enabling them to identify poor projects from good quality-projects, the Financial Guidelines are targeted at financial institutions and aim to support them to assess bankability of EES projects by means of a set of financial quality criteria.

These guidelines have been developed to sit alongside a **Procurement Handbook** to provide a toolkit for the procurement and quality assessment of energy efficiency services.

Fore more information about QualitEE or the Financial Guidelines please go to **www. qualitee.eu**

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