



T3.3 DRAFT FINANCIAL GUIDELINES – SUPPLEMENT A

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Disclaimer

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1 INTRODUCTION

The document **FINANCIAL GUIDELINES – SUPPLEMENT A** addresses quality criteria relevant for the financing of energy efficiency services (EES). Depending on the type of financial institution (FIs) and project development phase different information will be relevant. This document aims to establish a common understanding for the assessment of bankability of EES projects targeting at FIs, ESCOs and clients. Furthermore, these guidelines define which minimum financial information is relevant.

Previous work on the issue of 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 Financial Guidelines - Supplement A build on the existing valuable experiences.

The Financial Guidelines have to be interpreted in the context of the document Draft Guidelines of European Technical Quality Criteria, which have 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 address the target group of FIs with the aim to support them to assess bankability of EES projects by means of commonly called financial quality criteria (FQCs).

1.1 Bridging the Gap between Financial Institutions and EES Projects

The international market for EES projects is still largely untapped and one of the main barriers is the lack of viable financing. For typical financial institutions appraisal of value as well as of risks of energy efficiency projects is still unfamiliar territory. While the collateral value of most energy efficiency projects is rather low, generated cash flows as the main source of the value of energy efficiency projects are not recognized as being relevant as a source of repayment.

To overcome this barrier, financial institutions need to understand how EES projects work. It is not necessary to understand all technical details but it is of high importance 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 energy efficiency service projects will have to be prepared in a way that relevant financial parameters can directly be derived from provided data.

This guideline provides commonly called financial quality criteria (FQCs) that help financial institutions to assess the bankability of EE projects. At the same time, the FQC support clients or ESCOs to provide sufficient documentation of their projects.

1.2 Financing Instruments for EES Projects

For the financing of EES projects, a variety of different financing instruments are available which all have specific requirements (cf. Bleyl-Androschin/Schinnerl 2010) according to FQCs.

- ✔ Credit financing
- ✔ Leasing financing
- ✔ Cession
- ✔ Forfeiting of contracting rates

Credit financing: A lender (FI) provides a borrower (EES provider, 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 additions costs.

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.

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.

Forfeiting 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 any case, only high quality projects will be successful in economic terms and therefore financial quality criteria will have to focus on the description and definition of quality from the perspective of FIs.

1.3 Development Process for EES Projects

According to the Investor 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):

- ✔ Baselineing
- ✔ Saving calculations
- ✔ Design, construction, and verification

- ✔ Operations, Maintenance, and monitoring
- ✔ Measurement and Verification

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.

1.4 Value and Risk 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:

- ✔ Cash flows (CS) from energy savings, and the
- ✔ Value of the assets (installed equipment).

In addition, for some types of energy efficiency projects non-energy values (e.g. increased asset value, increased productivity, increases health and well-being) might be created that should also be taken into consideration as well (IEA 2014, Energy Efficiency Financial Institutions Group 2017, Bleyl et al. 2017).

1.5 Financial Quality Criteria (FQC)

Against the background described in the preceding chapters the FQCs address the most relevant aspects of financing of EES:

- ✔ Cash flows
- ✔ Collateralisation of technical equipment (assets)
- ✔ Failure or bankruptcy of ESCO
- ✔ Failure or bankruptcy of client where EES project is implemented

Therefore 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.

Table 1 shows the relevance of FQCs for the different aspects of financing EES projects:

Table 1: Relevance of Financial Quality Criteria for different Aspects of Financing

	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	++	0	+	+
FQC 2. Incentive Structure for Cash Flow Generation	++	0	++	0
FQC 3. Exploitation of Cash Flows	++	++	++	0
FQC 4. Value and Exploitation of Assets (Technical Equipment)	+	++	++	++
FGQ 5. Non-energy Benefits of EES Project	0	0	+	++

Table 2: Relevance of Financial Quality Criteria for Financing Instruments

	Credit financing	Leasing financing	Cession	Forfeiting of contracting rates
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)	+	++		
FGQ 5. Non-energy Benefits of EES Project	++	+		+

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 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 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 usually are defined as the reduction of energy consumption compared to an agreed baseline of energy consumption that 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 ground 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.

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

AC	Assessment Criterion	Proof	Assessment	Comment
1-1	Measurement and Verification (M&V) Plan	<p>Availability of an M&V Plan according to international standards with the following elements:</p> <ul style="list-style-type: none">  clear specification of the standard that is used for M&V  timing of M&V activities  specification of calculation algorithms  responsible stakeholders for the implementation of M&V 	<p><u>ex-ante</u>: Is an M&V concept according to international standards available?</p> <p><u>ex-post</u>: Availability of periodical M&V reports in line with the M&V Plan?</p>	<p>Existing standards:</p> <ul style="list-style-type: none">  IPMVP  ISO 50015:2014
1-2	Clear definition of the baseline used for the calculation of energy savings and M&V	<p>Baseline definition has to include the following information:</p> <ul style="list-style-type: none">  Adjustment factors shall be raised, approved by the client and included into the baseline.  Climate information  Energy prices should be one of the major adjustment factors, i.e. project cash flows should be independent from fluctuations in energy prices 	<p><u>ex-ante</u>: Is the baseline sufficiently defined and does it include adjustment factors?</p> <p><u>ex-post</u>: Review of M&V reports.</p>	<p>Baseline and adjustment factors have to be derived from existing energy consumption (energy bills, measurement data, etc.) and analysis of operation of previous years.</p>
1-3	Scenarios for worst, real and best case for cash flows	<p>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</p>	<p><u>ex-ante</u>: Is a risk analysis for cash flows including worst, real and best case available?</p> <p><u>ex-post</u>: Comparison of cash</p>	

		factors, but they should also include possible flaws in implementation.	flows with scenarios including adjustment factors.	
1-4	Application of best available technology	<p>Best available technology should be applied in the EES project. This can be proven by:</p> <ul style="list-style-type: none">  Use of products defined in the EcoDesign regulation, only best classes should be used  Use of products with quality labels  Reference list of implemented projects 	<p><u>ex-ante</u>: 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?</p> <p><u>ex-post</u>: Does the installed equipment meet the defined requirements?</p>	

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, the EES provider should carry those risks that he can carry better than the client – usually these are the risk related to analysis, selection, design and implementation of EE measures. The other risks should remain with the client!

Assessment criteria and verification process

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

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

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	<p><u>ex-ante:</u></p> <p>a) Specific risk sharing document with the following parts</p> <ul style="list-style-type: none"> ✔ listing perceived performance risks related to cash flow generation ✔ distribution of risk management to contractual parties (including justification) <p>b) Transposition of the chosen risk management approach to the EES contract</p>	<p>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:</p> <ul style="list-style-type: none"> ✔ poor analysis and design ✔ short-comings in implementation of measures ✔ operational mistakes ✔ fluctuation in usage patterns ✔ user behaviour ✔ energy price changes
2-2	Dependency of remuneration of EES provider on adherence with the savings guarantee	<p>Saving guarantee type 1: The reduction of remuneration must be, at least, commensurate with the level of the non-attainment of a guaranteed energy savings.</p> <p>Saving guarantee type 2: The achieved savings will be shared between the EES-provider and the client in a specific proportion.</p>	On the basis of contractual terms that relate to the guarantee of energy savings	<p>Saving guarantee type 1 leads to higher incentive to the EES provider to actually achieve envisaged energy savings. Therefore, this type of performance guarantee is clearly preferable in terms of incentivising impact.</p> <p>If the remuneration includes an additional bonus for over-performance and/or an extra penalty for under-performance the incentive is even higher.</p>

2-3	Incentivising stipulations at the client's side	<p>Clear definition of the client's contribution to project success, including</p> <ul style="list-style-type: none"> ✔ sufficient incentives to collaborate with the EES provider ✔ clear regulation of client's possibilities to impede implementation of EE measures by the EES provider 	On the basis of contractual terms	<p>This assessment criterion reflects the role and position of the client. Just to give a few examples from EES practice:</p> <ul style="list-style-type: none"> ✔ User behaviour is an important influencing factor. Therefore, it is advisable to address this issue in the contract; ✔ One way to do so is to share savings with the client from the very beginning of contract duration; ✔ Stipulations that regulate compensation for the EES provider for those cases where the client unfoundedly refuses to collaborate
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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 gets 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 to the FI prior access to the cash flow

Taken 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, forfeiting.

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.

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

AC	Assessment criterion	Proof	Verification	Comment
3-1	Preventive approach regarding exit-strategies	Exit strategies have to be prepared and documented in advance of project implementation	<p><u>ex ante:</u></p> <p>a) Specific document on exit-strategies covering at least the following cases</p> <ul style="list-style-type: none">  bankruptcy of either the EES provider or the EES client  sale of facilities by the client  legal succession / replacement of EES provider <p>b) Transposition of the chosen exit-strategies to the EES contract</p>	From the FIs point of view it is important that – as much as possible – project implementation is not stopped, but goes also in a new set-up of contractual partners, thus continuing with generation of cash flows from energy savings
3-2	Replacement of EES provider	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	Right of the EES provider to refinance through cession	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	Limiting stipulation regarding termination of contract by EES client	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	<p>Contractual stipulations that incentivizes the continuation of a project (in case of sale)</p> <p>a) duty of the client to pay all due future receivables immediately at the time of contract termination (see 3-4)</p> <p>b) definition of conditions under which the EES provider has to accept the purchaser of the facility as new client</p>	

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 the case where restructuring of the contractual parties happens.

Assessment criteria and verification process

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

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

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.	<p><u>ex-ante</u>: Project documentation allows to select removable parts and defines the economic value of these parts.</p> <p><u>ex-post</u>: Review of value of sold technical equipment</p>	
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.	<p><u>ex-ante</u>: Project documentation defines parts of the technical equipment that can be used for different purposes (processes, branches) and process-specific parts.</p> <p><u>ex-post</u>: Review of effects of changes in processes or branches</p>	
4-3	Contract defines ownership of technical equipment for the case of changed legal structures of the client or the EES provider	<p>Clear regulations in the contract defining ownership of equipment for the following cases</p> <ul style="list-style-type: none">  Changes in the legal structure of client  Changes in the legal structure of EES provider  Bankruptcy of client or EES provider <p>Documentation of technical</p>	<p><u>ex-ante</u>: 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.</p> <p><u>ex-post</u>: Review of changed ownership</p>	

		equipment but also instruction for proper operation and maintenance must be available.		
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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
- ✔ CO₂-savings
- ✔ 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.

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

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

3 APPLICATION OF THE FINANCIAL GUIDELINES

This document is targeting at financial institutions (FIs), energy service companies (ESCOs) and clients of energy efficiency projects. Financial quality criteria (FQCs) should help to select energy efficiency projects eligible for external financing.

FQCs help to assess the bankability of energy efficiency 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 because high quality of the EES project is not only relevant for the financing but also for the economic performance of the project.

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