IMPLEMENTATION OF THE QUALITEE BUSINESS MODEL IN GERMANY

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QualitEE Project

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Contents

1 EXECUTIVE SUMMARY

Within the QualitEE-project a set of quality criteria has been developed and adapted to a standardized quality check of contracts for energy efficiency services (EES), with the focus on energy supply contracting (ESC) and energy performance contracting (EPC). With these criteria EPC providers can check their business contracts on a voluntary basis with the aim to increase the qualitee level of their services and therefore to position themselves better in the market.

The compliance with the criteria will be checked in existing service contracts used by the clients (ESCO) and will be evaluated Ex-ante. The overall check of the contract against the criteria will be carried out by an external body.

After the external body analysed the level of compliance between the existing EPC contract and the Quality assessment criteria, a subsequent gap analysis will take place in order to identify potential improvements of the contract.

After a feedback loop with the ESCO and the review of documents/contracts further recommendations will be provided. If the client decides to implement necessary improvements to the contract an independent label can be provided. To reach this level, a certain number of defined criteria must be covered in the contract.

The main aim is to focus on contracting contracts of ESCO companies, which are willing to improve their contracts to increase transparency, trust, and the quality level of the energy service.

2 INTRODUCTION

The objective of this report is to provide information about the national implementation of quality assurance schemes for energy efficiency services (EES). This report has been developed as part of the "QualitEE – Quality Certification Frameworks for Energy Efficiency Services" project supported by the EU's Horizon 2020 programme. The QualitEE project aims to increase investment in EES and improve trust in service providers.

This report aims to cover the practical implementation of the business model selected for Germany. A business model is the core for the growth of business. It can be defined as "the rationale of how an organization creates, delivers, and captures value, in economic, social, cultural or other contexts. The process of business-model construction forms a part of business strategy"[1].

It will describe the basic idea of quality assurance for energy efficiency services in general, the idea of the national scheme and some facts about the development and implementation process of the national scheme (background).

[1] Osterwalder, Pigneur, Smith, *et al.*: "Business Model Generation" (2010)

3 THE CASE OF GERMANY

3.1 Description

The German National Action Plan on Energy Efficiency (NAPE) sets out the Energy Efficiency Strategy for the 18th legislative term. The NAPE aims to convince all stakeholders of the need to raise energy efficiency, involve them in these efforts and contain a set of instruments to motivate companies and consumers to raise energy efficiency.

Germany has a well-developed EES market. One of the reasons is the fact that various government institutions have dealt with the topic intensively since the early 90ies. Different service providers have been emerged which provide EPC and ESC models. A large proportion of EPC and ESC is offered by ESCO companies or municipal utilities.

Nevertheless, standardized quality assurance schemes on a national level do not exist in general for the German market. The establishing of an institutionalised quality certificate is associated with high costs which are not expected to be regained by the added value of the certificate itself. Survey results and several meetings with ESCO companies and other relevant stakeholders have shown, that there is not much demand for a national certification framework of EPC or ESC products.

Therefore, the idea is to implement a quality assurance scheme based on a label which can be awarded after a voluntary inspection of the respective EPC and ESC service of a service provider. This label should increase transparency of contracts. It is expected that this transparency will lead to an increase of trust and quality level of the contracts, which will subsequently lead to an increase of the value and competitive ability of the EPC product in the market.

3.2 Phases of quality assurance scheme procurement

3.2.1 Quality assessment criteria and compliance

The quality criteria presented below have been developed within the QualitEE project and are based on “preliminary quality criteria for energy efficiency services” developed for the Austrian market within the Transparense project.

This comprehensive set of technical, economic, communicational, and other criteria has been defined to be applied on energy efficiency services, with special focus on “Energy Performance Contracting” (EPC) and “Energy Supply Contracting” (ESC) in order to ensure minimum quality requirements which all services must comply with to be labelled as high-quality services.

The quality criteria selected have been object of discussion among stakeholders at both, national and European level. Consequently, the feedback has been incorporated allowing us to present an extended and agreed set of criteria. These criteria are:

- QC1 Adequate analysis: the analysis of an energy-consuming unit (building, industrial establishment, facility, etc.) with respect to possible energy savings including the identification of possible energy efficiency improvement (EEI) measures is often the first step in an EES. The quality of analysis will thus, also have an enormous impact on the overall quality of EES.
- QC2 Quality of implementation of technical energy efficiency improvement measures: In many cases, the rendering of an EES is connected with the implementation of technical measures. A

broad spectrum of quality standards can be met in practice while rendering services in this respect. QC2, therefore, stipulates a range of quality standards that must be complied with when implementing technical measures. In the process, compliance with such standards that regulate the implementation of technical measures is of paramount importance. Moreover, it must be ensured that the operator of the facility will be in a position to operate the newly installed facilities after the end of the project.

- QC3 Savings guarantee: some EES come with the promise that savings of a specific size will be realized. Such promises – routinely known as savings guarantee – must meet specific requirements for them to truly be beneficial to the client.
- QC4 Verification of energy savings: The identification and/or implementation of energy savings is at the center of EES. For this reason, the quality of an EES is also determined by the way that energy savings are verified. Energy savings cannot be measured directly but are always calculated. In simple terms, three approaches are differentiated:
  - Verification based on measured energy consumption: even in places where measurement equipment is available for the purpose of recording energy consumption, energy saving is determined through the comparison of the current value with a reference consumption (frequently called a "baseline"). At the same time, factors impacting energy consumption that are not caused by EES must be "filtered out" (often referred to as an "adjustment process" e.g. for the impact of variations in weather conditions);
  - Engineering calculation of energy-savings: usage of complex methods of calculation and simulation largely based on standards;
  - Expert estimation: derivation from savings realized from similar and comparable cases.
- QC5 Value retention and maintenance: some EES also cover services relating to the maintenance and repairs of newly installed or existing facilities. Quality of these services has a direct influence on the availability of the (energy) system and retention of its value. As these factors ensure desired benefits and long-term sustainability of projects beyond the contract duration, they also influence the overall quality of the EES.
- QC6 Communication between the contractor and the client: In addition to technical quality, the type and scope of communication between the EES provider and the client contributes to the quality of EES. EES providers assume only partial responsibilities from existing operating personnel. To avoid problems in the implementation of the EES the interfaces between contractual parties must be effectively managed through continuous and well-defined communication.
- QC7 Maintenance of users' comfort: The execution of EES shall not lead to any impediment on the comfort of the user. In this context, users' comfort requirements can be assessed either through physical parameters (temperature, air quality, luminous intensity, etc.) or captured by collecting feedback via a comfort survey tool.
- QC 8 Information and motivation of users: Since in most cases, users have a considerable impact on the energy consumption of an object and thus, also influence the success of EES, selected EES approaches entail actions for the information and motivation of users.

  Taking into account the heterogeneity of user-information activities, QC 8 contains just a "minimum package". In real EES projects, however, it may be advisable to extend user-information activities beyond the minimum requirements as included in QC 8.
- QC9 Comprehensible contractual stipulations for the contracting of specific regulatory requirements: several years of experience in contracting projects, have shown that their quality is not just of a technical and communicative nature but that the shaping of the Contract also contributes decisively to the quality of a project. The Contract must contain regulations for

individual issues such as ownership transfer, handling of energy price risk, insurance or exit regulations, that will repeatedly lead to problems in practice, if they were not regulated.

3.2.2 Adaption of criteria to national requirements

The quality criteria were examined by various national stakeholders to determine their adaptability for the German market. For this purpose, a survey was conducted with providers of energy efficiency services. ASEW contacted several municipal utilities from its network and carried out several bilateral expert interviews with selected actors. The tables below show the results of the evaluation of the criteria for the German market:

Table 1 – Evaluation questions

Evaluation questions	Abbreviation
How important is this criterion in assessing quality of EES? From not important at all (1) to very important (5)	Relevance
Is the criterion specific enough? From not specific at all (1) to very specific (5)	Specific
Is it possible to provide evidence (documents, references in contract, measured data etc.) to assess the criterion? From not possible at all (1) to easily possible (5)	Evidence
How time saving/ efficient is evaluation of this criterion? From time consuming (1) to not time consuming (5)	Time

Table 2 – Results of the evaluation of the criteria for the German market

	Criterion	Relevance	Specific	Evidence	Time
	QC 1 Adequate analysis				
AC 1-1	Agreement on the energy analysis process pursuant to DIN EN 16247-1	●●●●	●●●	●●●●	●●
AC 1-2	Adequate capturing of energy data and energy analysis	●●●●●	●●●	●●●●	●
AC 1-3	Adequacy of derivation from action recommendations	●●●●●	●●●	●●●●	●
	QC 2 Rendering of services in the implementation of technical measures				
AC 2-1	Rendering of services in accordance with applicable standards, statutes and approval conditions	●●●●●	●●●●	●●●●	●●●●
AC 2-2	Timeliness	●●●	●●●	●●●●	●●●
AC 2-3	Ascertainment of performance and documentation of service	●●●●●	●●●	●●●	●●
AC 2-4	Induction of users or operating personnel	●●●●	●●●	●●●●	●
AC 2-5	Ensuring the functionality of newly installed facilities after the end of the agreement	●●●●	●●●	●●●●	●●●●
	QC 3 Savings guarantee				
AC 3-1	Dependency of remuneration on adherence with the savings guarantee	●●●●●	●●●	●●●	●●●
AC 3-2	Guaranteed savings achieved (only applicable to saving guarantee type 1)	●●●●●	●●●●●	●●●●	●●●

AC 3-3	Adequate intervals for the verification of compliance with guarantee promise	●●●	●●●●●	●●●●	●●●
	QC 4 Verification of energy savings				
AC 4-1	Application of a standardized method of calculating energy savings	●●●●●	●●●●	●●●●	●●
AC 4-2	Selection of an adequate approach to the calculation of energy saving	●●●●	●●●●	●●●	●●
AC 4-3	Clear definition of the baseline (reference consumption)	●●●●●	●●●●●	●●●	●●
AC 4-4	Clear definition of the basis of adjustment of the energy savings calculation	●●●●●	●●●●	●●●	●●●
AC 4-5	Transparency and agreement of M&V processes and related responsibilities	●●●●	●●●	●●●	●●
	QC 5 Value-retention and maintenance				
AC 5-1	Compliance with the required system availability	●●●●●	●●●	●●●	●●
AC 5-2	Rapid troubleshooting in case of malfunctions of technical systems	●●●●	●	●●●	●●
AC 5-3	Functionality of facility at the end of the Contract	●●●●●	●●●	●●	●●●●
AC 5-4	Clear definition of responsibilities of the service provider with respect to maintenance and repair	●●●●	●●●●	●●●●	●●●●
	QC 6 Communication between the contractor and the client				
AC 6-1	Disclosure of contacts	●●●	●●●●●	●●●●●	●●●●●
AC 6-2	Agreement on accessibility of data and data exchange (in both directions)	●●●	●●	●●●	●●●
AC 6-3	Capturing and continual updating of all EEI measures taken by the EES provider	●●●	●●	●●●	●●●
AC 6-4	Organisational measures for committing internal operating personnel	●	●●	●●●	●●●
	QC 7 Compliance with users' comfort				
AC 7-1	Definition of users requirements (including regular review)	●●●●	●●	●●	●●
AC 7-2	Regular verification of compliance with physical comfort parameters	●●	●	●●	●●
AC 7-3	Assessment of users'"satisfaction	●●	●	●●	●●
	QC 8 Information and motivation of users				
AC 8-1	Development of a concept for the motivation of users	●●	●	●●	●●●●
AC 8-2	Establishment of a suggestion scheme for clients to improve energy efficiency	●●●	●	●●	●●●
AC 8-3	Provision of action-oriented information on the subject of energy efficiency	●●●	●●	●●●	●●●
	QC 9 Comprehensible contractual stipulations on contracting-specific regulatory requirements				
AC 9-1	Ownership transfer	●●●●●	●●●	●●●●	●●

AC 9-2	Handling of energy price risk	●●●●	●●●	●●●	●●
AC 9-3	Insurances	●●●●●	●●●●	●●●●●	●●●
AC 9-4	Exit regulations	●●●●●	●●●●●	●●●●●	●
AC 9-5	Legal succession	●●●●	●●●●	●●●●	●●
AC 9-6	Unhindered access rights and right of access	●●●●	●●	●●●	●●●
AC 9-7	Permissibility of different types of financing (Cession, Leasing, Forfeiting)	●●	●●	●●●	●●●
AC 9-8	Regulation on intellectual property rights	●●	●●	●●●	●●●

After the adaption of the criteria to the nation circumstances an evaluation took place concerning the necessity of each criteria. Several categories have been defined to specify which criteria have to be essentially included in the contract of an energy service in order to reach a higher level of qualitee. Further information about the process can be found in the report D.3.5. focussing on the qualitee criteria for energy efficiency services in Germany.

National adapted evaluation of quality criteria:

- Necessary criteria, which are essential to maintain adequate level of quality („must have")
- Additional criteria, which improve the level of quality („nice to have")
- Additional criteria that must be checked for applicability in individual case („nice to have")
- National neglectable criteria/ non applicable on national level

Table 3 – quality comply checklist for EPC contracts

Item	Description	Requirement
QC 1	**Adequate analysis**	
AC 1-1	Agreement on the energy analysis process pursuant to DIN EN 16247-1	nice to have
AC 1-2	Adequate capturing of energy data and energy analysis	must have
AC 1-3	Adequacy of derivation from action recommendations	must have
QC 2	**Rendering of services in the implementation of technical measures**	
AC 2-1	Rendering of services in accordance with applicable standards, statutes, and approval conditions	must have
AC 2-2	Timeliness	nice to have
AC 2-3	Ascertainment of performance and documentation of service	must have
AC 2-4	Introduction of users or operating personnel	must have
AC 2-5	Ensuring the functionality of newly installed facilities after the end of the agreement	must have

QC 3	Savings guarantee	
AC 3-1	Dependency of remuneration on adherence with the savings guarantee	must have
AC 3-2	Guaranteed savings achieved (only applicable to saving guarantee type 1)	must have
AC 3-3	Adequate intervals for the verification of compliance with guarantee promise	nice to have
QC 4	Verification of energy savings	
AC 4-1	Application of a standardized method of calculating energy savings	must have
AC 4-2	Selection of an adequate approach to the calculation of energy saving	must have
AC 4-3	Clear definition of the baseline (reference consumption)	must have
AC 4-4	Clear definition of the basis of adjustment of the energy savings calculation	must have
AC 4-5	Transparency and agreement of M&V processes and related responsibilities	must have
QC 5	Value-retention and maintenance	
AC 5-1	Compliance with the required system availability	must have
AC 5-2	Rapid troubleshooting in case of malfunctions of technical systems	must have
AC 5-3	Functionality of facility at the end of the Contract	must have
AC 5-4	Clear definition of responsibilities of the service provider with respect to maintenance and repair	must have
QC 6	Communication between the contractor and the client	
AC 6-1	Disclosure of contacts	must have
AC 6-2	Agreement on accessibility of data and data exchange (in both directions)	individual
AC 6-3	Capturing and continual updating of all EEI measures taken by the EES provider	individual
AC 6-4	Organisational measures for committing internal operating personnel	neglectable
QC 7	Compliance with users' comfort	
AC 7-1	Definition of users' requirements (including regular review)	must have
AC 7-2	Regular verification of compliance with physical comfort parameters	individual
AC 7-3	Assessment of users' satisfaction	neglectable
QC 8	Information and motivation of users	
AC 8-1	Development of a concept for the motivation of users	neglectable
AC 8-2	Establishment of a suggestion scheme for clients to improve energy efficiency	nice to have
AC 8-3	Provision of action-oriented information on the subject of energy efficiency	nice to have
QC 9	Comprehensible contractual stipulations on contracting-specific regulatory requirements	
AC 9-1	Ownership transfer	must have
AC 9-2	Handling of energy price risk	must have
AC 9-3	Insurances	must have

AC 9-4	Exit regulations	must have
AC 9-5	Legal succession	must have
AC 9-6	Unhindered access rights and right of access	must have
AC 9-7	Permissibility of different types of financing (Cession, Leasing, Forfeiting)	neglectable
AC 9-8	Regulation on intellectual property rights	neglectable

3.2.3 Model contract feedback scheme

After the development of the checklist for EPC contracts, it has been decided to focus in a first step on the lighting sector. Therefore, the applicability of these criteria has been tested with a model contract of ASEWs “EPC in the lighting sector”-contract. After the check of the model contract against the criteria, missing criteria in the contract have been identified which need to be included in order to provide a model contract of higher qualitee. The following table provides the overview of the analysed model contract with guaranteed energy savings, including recommendations for actions.

Table 4 – feedback results of model contract "lighting contract EPC"

	Criterion	Requirement	Model contract "lighting contract EPC"	Requirement met?	Recommendations for action (short excerpt)
QC 1	Adequate analysis				
1-1	Agreement on the energy analysis process pursuant to DIN EN 16247-1	nice to have	Included	✓	
1-2	Adequate capturing of energy data and energy analysis	must have	Included in annex	✓	
1-3	Adequacy of derivation from action recommendations	must have	Savings are guaranteed on basis of constant consumption	✓	
QC 2	Rendering of services in the implementation of technical measures				
2-1	Rendering of services in accordance with applicable standards, statutes, and approval conditions	must have	Covered by DIN-Norm EN 12464-1	✓	
2-2	Timelines	nice to have	Only for time intervals of O & M	×	Include project timeline
2-3	Ascertainment of performance and documentation of service	must have	Annex: acceptance report	✓	
2-4	Introduction of users or operating personnel	must have	Not covered in model contract; required tasks	×	Include basic instructions manual or/ and training
2-5	Ensuring the functionality of newly installed facilities after the end of the agreement	must have	Conditions after end of agreement included: Deconstruction by contractor or takeover by client	✓	
QC 3	Savings guarantee				

3-1	Dependency of remuneration on adherence with the savings guarantee	must have	Guaranteed savings are included and need to be proven by contractor	✓
3-2	Guaranteed savings achieved (only applicable to saving guarantee type 1)	must have	Common review after 15 months	✓
3-3	Adequate intervals for the verification of compliance with guarantee promise	nice to have	Common review after 15 months	✓
QC 4	Verification of energy savings			
4-1	Application of a standardized method of calculating energy savings	must have	Included in annex (measurement concept)	✓
4-2	Selection of an adequate approach to the calculation of energy saving	must have	Included in annex (measurement concept)	✓
4-3	Clear definition of the baseline (reference consumption)	must have	Included in annex (measurement concept)	✓
4-4	Clear definition of the basis of adjustment of the energy savings calculation	must have	Included in annex (measurement concept)	✓
4-5	Transparency and agreement of M&V processes and related responsibilities	must have	Included in annex (measurement concept)	✓
QC 5	Value-retention and maintenance			
5-1	Compliance with the required system availability	must have	Contractor in charge of O & M during agreement phase	✓
5-2	Rapid troubleshooting in case of malfunctions of technical systems	must have	Reaction times are not defined	✓
5-3	Functionality of facility at the end of the Contract	must have	Conditions after end of agreement included.	✓
5-4	Clear definition of responsibilities of the service provider with respect to maintenance and repair	must have	Included	✓
QC 6	Communication between the contractor and the client			
6-1	Disclosure of contacts	must have	Annex: central contacts needs to be further specified	✓

6-2	Agreement on accessibility of data and data exchange (in both directions)	individual	Not included	-/-	Specify individually for each project
6-3	Capturing and continual updating of all EEI measures taken by the EES provider	individual	Not included	-/-	Specify individually for each project
6-4	Organisational measures for committing internal operating personnel	neglectable	Not included	-/-	
QC 7	**Compliance with users' comfort**				
7-1	Definition of users' requirements (including regular review)	must have	Given by DIN-Norm EN 12464-1	✓	Add more specific and individual requirements for each project
7-2	Regular verification of compliance with physical comfort parameters	individual	Not included	-/-	Specify individually for each project
7-3	Assessment of users' satisfaction	neglectable	Not included	-/-	none
QC 8	**Information and motivation of users**				
8-1	Development of a concept for the motivation of users	neglectable	Not included	-/-	
8-2	Establishment of a suggestion scheme for clients to improve energy efficiency	nice to have	Not included	×	Provide overview of key findings and refer to energy audit report
8-3	Provision of action-oriented information on the subject of energy efficiency	nice to have	Not included	×	Provide additional information (websites, brochures, campaigns, national funds)
QC 9	**Comprehensible contractual stipulations on contracting-specific regulatory requirements**				
9-1	Ownership transfer	must have	included: Deconstruction by contractor or takeover by client	✓	
9-2	Handling of energy price risk	must have	power delivery agreement separately, Guarantee is given for consumption (kWh)	✓	Refer to external agreements and contracts
9-3	Insurances	must have	Included	✓	
9-4	Exit regulations	must have	Terms of premature cancellation of the contract are included	✓	
9-5	Legal succession	must have	Not defined	×	Clearly define a legal successor
9-6	Unhindered access rights and right of access	must have	Included	✓	

9-7	Permissibility of different types of financing (Cession, Leasing, Forfeiting)	neglectable	Not included	-/-
9-8	Regulation on intellectual property rights	neglectable	Not defined	-/-

The adapted model contract can now be used as an example of a contract with higher qualitee. Nevertheless, every category of energy efficiency service needs to be looked at in a different way. The contract example above focusses only on the lighting sector.

3.2.4 Evaluation of compliance

After defining a best practice example for a contract, the compliance of the criteria can now be checked in other existing service contracts used by the clients (ESCOs) and can be evaluated Ex-ante. The EPC and ESC contracts, and therefore the services, will always be evaluated on a voluntary basis. The overall check of the contract against the criteria will be carried out by an external body. After the external body analysed the level of compliance between the existing EPC contract and the quality assessment criteria, a subsequent gap analysis can take place in order to identify potential improvements of the contract.

As an example, the LED-contract of one provider has been analysed.

Table 5 – feedback results of a LED-contract for one provider of EES

	Criterion	Requirement	LED Contracting of ESCO	Requirement met?	Recommendations for action (short excerpt)
QC 1	**Adequate analysis**				
1-1	Agreement on the energy analysis process pursuant to DIN EN 16247-1	nice to have	Not included		
1-2	Adequate capturing of energy data and energy analysis	must have	Customer gets informed about potential of energy savings.	×	Add binding offer to contract.
1-3	Adequacy of derivation from action recommendations	must have		×	Add adequate recommendations of actions
QC 2	**Rendering of services in the implementation of technical measures**				

2-1	Rendering of services in accordance with applicable standards, statutes, and approval conditions	must have	No direct link	×	Refer to compliance on DIN-Norm EN 12464-1
2-2	Timelines	nice to have	Individual agreement	×	Include project timeline to contract
2-3	Ascertainment of performance and documentation of service	must have	Included via handover certificate	✓	
2-4	Introduction of users or operating personnel	must have	No direct part of contract	×	Include basic instructions manual or/ and training
2-5	Ensuring the functionality of newly installed facilities after the end of the agreement	must have	Conditions after end of agreement included: Deconstruction by contractor or takeover by client	✓	
QC 3	Savings guarantee				
3-1	Dependency of remuneration on adherence with the savings guarantee	must have	Not included	✓	Product does not contain saving guarantees
3-2	Guaranteed savings achieved (only applicable to saving guarantee type 1)	must have	Not included	✓	Product does not contain saving guarantees
3-3	Adequate intervals for the verification of compliance with guarantee promise	nice to have	Not included	✓	Product does not contain saving guarantees
QC 4	Verification of energy savings				
4-1	Application of a standardized method of calculating energy savings	must have	Not included	✓	Product does not contain saving guarantees
4-2	Selection of an adequate approach to the calculation of energy saving	must have	Not included	✓	Product does not contain saving guarantees
4-3	Clear definition of the baseline (reference consumption)	must have	Not included	✓	Product does not contain saving guarantees
4-4	Clear definition of the basis of adjustment of the energy savings calculation	must have	Not included	✓	Product does not contain saving guarantees
4-5	Transparency and agreement of M&V processes and related responsibilities	must have	Not included	✓	Product does not contain saving guarantees
QC 5	Value-retention and maintenance				

5-1	Compliance with the required system availability	must have	Contractor in charge of O & M during agreement phase	✓	
5-2	Rapid troubleshooting in case of malfunctions of technical systems	must have	Malfunctions need to be reported by customer	✓	Add reaction time
5-3	Functionality of facility at the end of the Contract	must have	Conditions after end of agreement included.	✓	Specify condition of system for time of handover
5-4	Clear definition of responsibilities of the service provider with respect to maintenance and repair	must have	Basics included	×	Add detailed list of responsibilities
QC 6	Communication between the contractor and the client				
6-1	Disclosure of contacts	must have	Not included in framework contract	×	Add list of contacts
6-2	Agreement on accessibility of data and data exchange (in both directions)	individual	Not included in framework contract	-/-	To be checked for each project individually
6-3	Capturing and continual updating of all EEI measures taken by the EES provider	individual	Not included in framework contract	-/-	Neglectable for respective case
6-4	Organisational measures for committing internal operating personnel	neglectable	Not included in framework contract	-/-	
QC 7	Compliance with users' comfort				
7-1	Definition of users' requirements (including regular review)	must have	Not included	×	Specify users' requirements
7-2	Regular verification of compliance with physical comfort parameters	individual	Not included	×	Add agreement on comfort parameters and specify review cycle
7-3	Assessment of users' satisfaction	neglectable	Not included	-/-	
QC 8	Information and motivation of users				
8-1	Development of a concept for the motivation of users	neglectable	Not included	-/-	
8-2	Establishment of a suggestion scheme for clients to improve energy efficiency	nice to have	Not included	×	
8-3	Provision of action-oriented information on the subject of energy efficiency	nice to have	Not included	×	
QC 9	Comprehensible contractual stipulations on contracting-specific regulatory requirements				

9-1	Ownership transfer	must have	Included	✓	
9-2	Handling of energy price risk	must have	Product does not contain energy delivery	✓	
9-3	Insurances	must have	Customer must add system to building insurance	✓	
9-4	Exit regulations	must have	Included	✓	
9-5	Legal succession	must have	Included	✓	
9-6	Unhindered access rights and right of access	must have	Not included	✗	Define access rights for operation, maintenance, and deconstruction
9-7	Permissibility of different types of financing (Cession, Leasing, Forfeiting)	neglectable	Only included in lease contracts	-/-	
9-8	Regulation on intellectual property rights	neglectable	Not included	-/-	

After the analysis of the contract and several feedback loops, a workshop with the EES provider has been carried out in order to discuss the results. One of the main aims of the workshop is the adaption of the contract to the minimum requirements - the inclusion of all “must have” criteria. Only if all for the German market as “must have” identified criteria are included in a contract, in a further step a possible label can be granted.

3.2.5 Granting of the Qualitee-label

During NPT meetings and discussions with many market player and stakeholders, different options for awarding a QualitEE label have been discussed and analysed. As no public or governmental entity has explained interest in developing a new certification scheme for energy efficiency services for the German market, the responsible body for the overall check of the contract against the criteria should be an independent institution.

After assessing the compliance with the elaborated quality assurance criteria, an independent label can be awarded if the following criteria have been fulfilled:

- The “must have” criteria need to be included within the contract/ documentation.
- The “nice to have” criteria may be included in the contracts. Depending on individual circumstances, the criteria marked as “individual” might be relevant or neglectable for the respecting contract.
- The feedback of the reviewed documents is given in a mutual exchange between the contracting company and the assessing body. This increases transparency and ensures clarity about the recommendations.

The label awarded to checked contracts/documents will not expire but will contain information about the date of the check-up.

3.2.6 Standard project delivery model

Scheme 1: Overview of the process

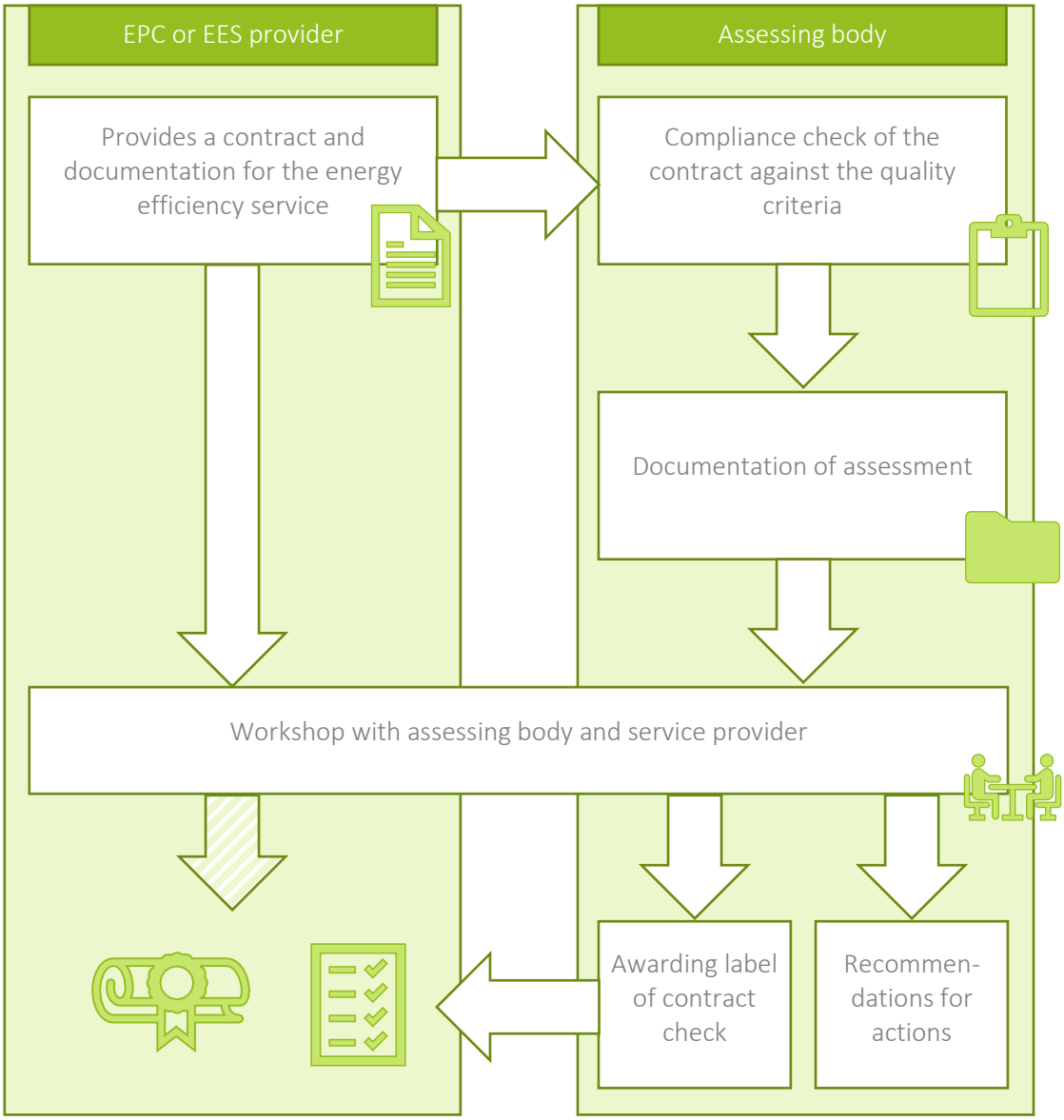

Figure 1 - Standard project delivery model

3.3 Main features

The main features of the QualitEE business model are found in the following table:

Table 6 - Main features for Plausibility check of contracting contracts

	Plausibility check of contracting contracts
Principal action	Quality check of EES-contracts
Country	Germany
Type	Voluntary
Target user	EES provider / clients from a particular sector
Authority	None included
Phases	1. Contact EES provider to analyse measures to be taken. 2. Compliance check of the contract against the quality criteria. 3. Gap analysis and recommendation report 4. Workshop 5. Evaluation and possibility of issuing a label.
Stakeholders	1. EES Provider 2. Evaluating institution
Support measures/ dissemination	Website, publishing of successful cases, national workshops
Year of implementation	2020
Costs	1.000 to 2.000 € for contract analysis, workshop and documentation

Source: ASEW

3.4 Canvas analysis

3.4.1 Business Model Canvas Analysis

Table 7 - Canvas analysis

<table>
<tr>
<td rowspan="2">KEY PARTNERS
• EES providers: EPC providers, consultancy, supply contracting, operational contracting, etc.
• Client: natural or legal entity interested in implementing EE measures
• Private clients looking for trusted companies.</td>
<td>KEY ACTIVITIES
• Through its quality assessment it defines if an EES meets the prerequisites to obtain their label, and deem them to be a high-quality efficiency service</td>
<td rowspan="2">VALUE PROPOSITION
• Easy to perform due to pre-determined steps
• Objective criteria established by an external international consortium
• International recognition</td>
<td>CUSTOMER RELATIONSHIP
• High bounding through personal assistance during checking phase and subsequent workshops</td>
<td rowspan="2">CUSTOMER SEGMENT
• Mainly municipal or private utilities, energy suppliers
• Private EES providers</td>
</tr>
<tr>
<td>KEY RESOURCES
• Transparent use of label
• Expertise in EES and EPC contract structures
• ESCO companies</td>
<td>CHANNELS
• Existing networks of municipal utilities
• Power utility/ municipal utility associations
• Awareness through press releases (technical press); customer information of EES and EPC providers</td>
</tr>
<tr>
<td colspan="3">COST STRUCTURE
• Cost driven model: the costs of contract checking must not exceed the benefit of added value by awarding the label
• Economies of scale do not apply (therefore: standardized process)
• Fixed costs: Costs for quality criteria assessment (review of EPC contract against the quality criteria)</td>
<td colspan="2">REVENUE STREAMS
• Currently, EPC or EES services are not quality checked, therefore no costs currently
• Revenue stream from EES or EPC provider to assessing body
• Fixed pricing for contract check, volume dependent (number of checked contracts per customer</td>
</tr>
</table>

Source: ASEW

3.4.2 Value proposition

Table 8 - Value proposition of qualitee in Germany

PROVIDER OF THE CERTIFIED EE SERVICE		CLIENT OF THE CERTIFIED EE SERVICE	
SERVICES	**GAIN CREATORS**	**GAINS**	**CUSTOMER JOB(S)**
• The project is developed following criteria of national circumstances • Initial audit of contracts and identification of possible gaps • Provision of the label	• Improve image by offering a quality service with pre-established guidelines by an independent association • Help reduce energy costs • Reduces impact on environment	• Savings are guaranteed • Improve energy service quality • Reduce energy and CO_2 consumption • Minimize financial and technical risks: The provider oversees the financial aspects of the project. • Increase profitability of the business	• Run profitable business (reducing costs by maintaining operation equal) • Have functioning operations: - "Out-source" non-core activities • Improve energy efficiency in their business. • Improve image by being more environment friendly
	PAIN RELIEVERS	**PAINS**	
	• Minimize financial and technical risks by following criteria. • Most of the financial obligations and timeliness are met by the provider.	• Influence on core business • Need for resources for non-core activities • Lack of time and resources for business • Upfront investment costs	

Source: ASEW

4 IMPLEMENTATION STRATEGY

4.1 Business opportunities

The national technical criteria have been elaborated in several platforms and channels with national stakeholders as the German Energy Agency (dena), ESCO utilities, municipal and private associations. All quality criteria have been presented and discussed during NPT and NDP meetings. As a key finding of the QualitEE survey, a quality assurance scheme will only be followed by EPC and EES providers on a voluntary basis. This has been validated in several meetings of the national discussion platform and feedback meetings with ESCOs and their customers. In the beginning of the QualitEE Project, it has been aimed to develop quality criteria and a national certification framework that is standardised and widely acknowledged like the well-known TÜV-label. However, the costs of the implementation of an official recognized certification will not be covered by the expected added value of certified contracts. It was decided to use the developed set of quality criteria for a voluntary check of EPC contracts. This quality check has been standardized and tested within the QualitEE project and provides additional recommendations for actions to improve the contracts.

This scheme can be used by EPC providers like ESCO companies in order to check their contracts. As an added value, this service can be provided by an external organisation or institution which awards the EPC provider with an additional label to prove the contract check and compliance to the quality criteria.

As elaborated in the country report, in the energy performance contracting (EPC) market, different actors are involved with different roles. The following explanations identify the relevant actors and describe their roles:

- Public and Private Clients of Energy Efficiency Services: Companies or persons who want to realize energy-saving projects. In most cases the clients are responsible for, or own one or more buildings with a greater energy saving potential, for example hospitals, municipality / public buildings, industry, housing companies or an owner of an apartment building etc.
- Energy Services Companies (ESCO): ESCOs are legal entities whose services improve the energy efficiency of customers' or public facilities. The ESCOs are willing to take a certain amount of risk. There are nationally active companies in the market like Cofely Deutschland GmbH, Bilfinger, Caverion, EnBW Sales & Solutions GmbH, German Contracting, MVV Energiedienstleistungen GmbH, RWE, Siemens AG, Industry Sector, Building Technologies Division, SPIE Energy Solutions GmbH etc. and more regionally anchored companies such as small and medium-sized municipal utilities.
- Industry associations representing the ESCOs in Germany such as: VfW – Verband für Wärmelieferung / Association for heat supply; ESCO Forum - Working team within the ZVEI (Zentralverband Elektrotechnik-und Elektroindustrie), the German Electrical and Electronic Manufacturers' Association; VDMA – Verband deutscher Maschinen- und Anlagenbau / German Engineering Federation; DENEFF – Deutsche Unternehmensinitiative Energieeffizienz / The German Business Initiative for Energy Efficiency Facilitators of Energy Efficiency Services; AGFW – Der Energieeffizienzverband für Wärme, Kälte und KWK / Energy Efficiency Association for Heating, Cooling and Co-generation.
- Project facilitators (agencies, consultants): These actors are very important in the German market, especially for public clients. They support their clients navigating through project initiation and management. Some of the facilitators are regional energy agencies such as:

Energieagentur Nordrhein-Westfalen; Berliner Energieagentur GmbH (BEA); Klimaschutz- und Energieagentur Baden-Württemberg GmbH (KEA)

- Financial Institutions / Investors: Natural or legal persons who are involved in financing the energy-saving contracting projects. In Germany there are efforts by the Federal Government to support SME EPC ESCOs with a guarantee program through guarantor banks.
- Government Bodies such as the BMWi
- National Associations such as the VKU - Verband kommunaler Unternehmen, the ASEW – Arbeitsgemeinschaft für sparsame Energie- und Wasserverwendung etc.

Taking all these actors into account, the described German business model will be tested first on a smaller level, before including all main market actors in order to develop a higher standardized scheme for the German market.

4.2 Implementation strategy

The quality assurance scheme has been developed and can be performed for EPC providers by an independent assessing body. The main aim is to focus on contracting contracts of ESCO companies, which can be motivated to let their contracts checked to increase their transparency, trust, and quality level of service. The first contracts have been analysed, adapted to the identified criteria and tested with clients in practice. Currently, further contract reviews are already planned.

On the label itself, further discussions need to take place concerning the design.

5 MARKETING STRATEGY

5.1 Target groups

The main group is defined by the type of companies and institutions, which provide EES. In Germany, the majority of EPC is offered by ESCOs. Therefore, the main stakeholder for the use of the quality assurance scheme are:

- ESCOs,
- Clients - municipalities, house owner association and big energy consumers.

5.2 Price

The client, in respect to the main target group mainly ESCOs, will be charged for the contract check, if it is conducted by an external institution. In this case, the price covers the assessment in respect to the quality criteria set, a first feedback notes, a gap analysis and report as well as a detailed review during a workshop with the client which includes recommendations for action. If necessary, changes within the contract – according to the minimum requirements to award a label – will take place. The external institution then awards the process of quality check with a label.

The procedure of contract check which includes documentation and knowledge transfer/ workshop is planned with 2-4 full business days and therefore be charged with 1.000 to 2.000 €. There is no additional fee for certification process or obtaining a certification.

5.3 Communication Plan

The communication about the developed service and scheme will be performed via multiple channels. First, the awareness of EPC-providers will be risen through press releases. Second, ESCOs and other EPC providers will be addresses through networks of associations. All actions will be accompanied via posts on the social media platforms as Twitter, Facebook, LinkedIN etc.

6 CONTINGENCY PLAN

The checking of contracts will be on a voluntary basis and conducted by external institutions or associations. As there will be no additional capacities created to conduct these assessments, risks are minimized for the implementation of the business model. Unlike to national certificates or certificates of standardization bodies, the contract check does not guarantee compliance to third parties.

7 CONCLUSIONS

Within the QualitEE project a business model for the German market has been developed, focussing on the increase of qualitee for energy efficiency services. This business model focusses on the improvement of EPC/ESC-contracts. Various meetings with the National Discussion Platform and other stakeholders concluded beforehand, that currently there is no business model for a quality certification scheme for EPC on a national level yet. This has also been validated in feedback meetings with ESCO companies.

To develop such a business model, in a first step a set of quality criteria has been developed and adapted to a standardized quality check for EES/ EPC contracts. This set of criteria has also been tested already in the market. Afterwards, a checklist has been created, including categories which divide criteria into groups of importance. So, criteria have been identified which are fundamental for the increase of qualitee.

This checklist builds the fundament for the business model. With the identification of “must have” criteria, existing service contracts can be analyzed and revised/updated. After the gap analysis of the contract, accompanied by a report, a workshop with the ESCO will be carried out where missing criteria will be discussed, and further developments of the contract can take place. This process leads to the increase of the qualitee of contracts and relating thereto the services. If an ESCOs accepts the further improvements to the contracts and includes as a minimum all “must have” criteria, a label can be granted in order to proof the qualitee of the contract/service also to the market.

The main target group is defined by the type of companies and institutions, which provide EES. In Germany, the majority of EPC is offered by ESCOs.