



BUSINESS MODELS FOR QUALITY ASSURANCE SCHEMES

Final version



QualitEE Project

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Definitions and glossary

Term	Definition
Energy efficiency*	the ratio of output of performance, service, goods or energy, to input of energy
Energy efficiency service (EES)**	an agreed task or tasks designed to lead to an energy efficiency improvement and other agreed performance criteria
Energy efficiency improvement*	an increase in energy efficiency because of technological, behavioral and/or economic changes
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
Energy supply contracting*** (ESC)	a contractual arrangement for the efficient supply of energy. ESC is contracted and measured in Megawatt hours (MWh) delivered
Energy savings*	an amount of saved energy determined by measuring and/or estimating consumption before and after implementation of an energy efficiency improvement measure, whilst ensuring normalization for external conditions that affect energy consumption
Energy service*	the physical benefit, utility or good derived from a combination of energy with energy-efficient technology or with action, which may include the operations, maintenance and control necessary to deliver the service, which is delivered based on a contract and in normal circumstances has proven to result in verifiable and measurable or estimable energy efficiency improvement or primary energy savings
Energy service provider*	a natural or legal person who delivers energy services or other energy efficiency improvement measures in a final customer's facility or premises
Energy*	all forms of energy products, combustible fuels, heat, renewable energy, electricity, or any other form of energy, as defined in Article 2(d) of Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics
EPC provider	an energy service provider who delivers energy services in the form of Energy Performance Contracting
Energy service project facilitator (facilitator)	an advisory company working on behalf of the client to procure and/or implement an energy service project
Savings	energy savings and/or related financial savings; the financial savings include the costs of energy provision and can also include other operational costs, such as the costs of maintenance and workforce
Quality assurance	part of quality management focused on providing confidence that quality requirements will be fulfilled
Business model	describes the rationale of how an organization creates, delivers, and captures value, in economic, social, cultural or other contexts
Quality assurance scheme / business model	how an organization creates, delivers and captures value in economic, social or other context while evaluating and certifying the quality of products and services

Quality criteria	characteristics of a service that determine whether it meets the express and implied requirements to be considered a good energy efficiency service
Accreditation	formal recognition by an independent body, generally known as an accreditation body, which accredits that a certification body operates according to international standards. The foundations are given in ISO/IEC 17000:2004. Also, ISO 17024 and ISO 17065 are of importance.
Accreditation body	A (non-)governmental or private association of national or regional scope that develops evaluation standards and criteria and conducts peer evaluations and expert visits to assess whether or not those criteria are met.
Certification	the provision of a written assurance (a certificate) by an independent body (a certification body), that the product, service or system in question meets specific requirements (compliance with certain international standards).
Certification label	a label or symbol indicating that compliance with certain standards has been verified
Qualification	applies when competences are verified by somebody that is not an accredited third-party certification body, e.g. a national or local authority.
Certification body	an independent and accredited certification body, following ISO 17065.
National Promotion Teams	They are small groups of key national stakeholders that aim to initiate the necessary processes and strategies for the introduction of national certification frameworks within the QualitEE project.

Notes:

*Definitions according to the Energy Efficiency Directive

**Definition according the European standard EN 15900:2010

***Definition is a simplified version of IEA DSM Task Force 16 definition

1 EXECUTIVE SUMMARY

The objective of this report is to create a working tool for National Promotion Teams, which are small groups of key national stakeholders that aim to initiate the necessary processes and strategies for the introduction of national certification frameworks, to acquire an understanding of the different existing business models for the implementation of quality assurance schemes. Through their description, comparison and analysis, guidance for National Promotion Teams will be provided. This will allow them to evaluate existing practices as a starting point for the implementation of functioning quality-assurance schemes that adapt best to the characteristics of their national markets.

The quality assurance schemes developed for each nation aim to scale up investment in building energy efficiency by establishing quality certification frameworks for energy efficiency services across Europe, which do not currently exist.

Throughout the report, the advantages and disadvantages of the different business models for different stakeholder groups and sizes, processes, structures, costs and efforts are presented. By conducting an in-depth analysis of the models, the report aims to facilitate the evaluation process for National Promotion Teams.

The first model analyzed is the Austrian quality assurance label DECA, created by a private association by the same name. This business model follows a “self-proclamation with plausibility check” format, which means that ESCOs that sign the self-commitment declare that all energy services they offer that carry the label meet the label criteria. This model presents some advantages, such as a limited number and types of stakeholders, which makes process implementation less complicated. DECA also stands out because of its adaptability and low time requirements as well as limited bureaucratic procedures and acquisition costs for the recipients of the label.

Graz EnergieAgentur created the quality guarantee Thermoprofit, which guarantees reliable high-quality project proposals for regional bidding processes. This business model focuses on EPC contracts, and they are assessed by an independent commission at regular intervals that confirms that the standards are being observed. The main advantage presented by this model is the government involvement that Thermoprofit enjoys, which makes it a more credible scheme and increases trust, as well as the maturity of the scheme. However, it lacks some positive qualities such as ease of replicability, a low number of stakeholders involved in the implementation process and low implementation costs.

BUND’s seal of quality aims to improve energy performance in the health sector in Germany. BUND established four criteria, two of which must be met by hospitals or clinics to be granted the seal of quality. This model of quality assurance scheme enjoys relative ease of replicability and the typology of stakeholders do not present a barrier to its implementation. BUND’s seal of quality does present some inconveniences; it has high acquisition costs for the receivers of the seal, it has poor financial attractiveness and it lacks government involvement, which make it less attractive for implementation.

The International Standardization Organization is a non-governmental, independent organization, made up of the standard organizations of 163-member countries, that creates international standards. The standards must respond to a need in the market, global expert opinion, a multi-stakeholder process or consensus from stakeholders. Once the standards are created those interested in certification contact national certification organizations, where their proposals are assessed. ISO has high maturity, it is considered easily replicable in other countries, and enjoys high recognition. On the other hand, it requires high investment from the receivers of the certificate, an exhaustive bureaucratic process and lacks government involvement.

The Department for Business, Energy and Industrial Strategy in the United Kingdom created a government initiative providing a practical, determinate method for assessing the efficiency of all types and sizes of Combined Heat & Power (CHP) schemes throughout the UK, called CHPQA (Combined Heat and Power Quality Assurance). It grants tax benefits to CHP plants that exceed minimum efficiency standards, making real primary energy savings, by implementing a quality assurance scheme. Said tax benefits are the main advantage presented by the scheme. It is also a government scheme, which gives it credibility and stability. CHPQA has a high level of penetration, as measured by the number of CHP plants that have ascribed to it, and it is a cost-free scheme which means that it is financially attractive for the receivers.

The Passive House Institute created the Passive House concept, a performance-based energy standard in construction. The certificate results in ultra-low energy buildings that require little energy for space heating or cooling and primary energy in total. It has a worldwide network of certified designers and builders which implement the model internationally, making it renowned, which is precisely one of the advantages it presents. Its lack of government involvement, low ease of replicability and high acquisition costs make it difficult to implement the quality assurance scheme.

The Standard Contract for EPCs commissioned by the Austrian Federal Ministry of Science, Research and Economy to the Austrian Society for Environment and Technology, was created with the aim of facilitating the comparison of the different proposals to bids carried out by the Public Administration in the scope of energy efficiency. The fact that it is a government-commissioned contract grants it the credibility and trust that EPC customers seek. It is a model that consists of a low number of stakeholders making it simpler to implement.

The Spanish National Association of Energy Service Companies (ANESE) launched a certificate which grants companies the classification as energy service companies (ESCOs) in the country, as a response to the lack of regulation and the absence of an official registry with guarantees. To obtain the certificate, companies must go through an auditing process which assesses if the criteria are met. ANESE's certificate has some advantages: a limited number of stakeholders involved in the process, its ease of adaptability or its low implementation costs for issuers of the quality assurance schemes. It also, however, presents some disadvantages: it has low maturity and penetration, low replicability and lacks government involvement.

Klimaaktiv is the climate protection initiative of the Austrian Federal Ministry for Sustainability and Tourism and an instrument for energy transition. One of the actions carried out by the Federal Ministry for Sustainability and Tourism in the scope of klimaaktiv is the establishment of the klimaaktiv building standard, which serves as a guiding principle for environmental and energy efficient building design throughout Austria. Some of its most important qualities are its government involvement, high penetration and recognition, low levels of bureaucracy and ease of replicability.

The last model analyzed in the report is the Quality Label in Construction (ZKG), promoted by the Slovenian Building and Civil Engineering Institute (ZRMK). It is a voluntary certification method that evaluates and rates products and services that meet high, professionally prepared and internationally comparable quality requirements. These evaluations are done through bidding processes to compare the different proposals from different categories and award the label to the ones that best meet the requirements. Its most important qualities are its limited number of stakeholders, its low acquisition costs for receivers of the quality assurance schemes as well as its ease of adaptability.





Besides conducting a benchmark analyzing the different qualities of the business models, aiming to make their comparison more accessible, key aspects related to income and expenses to be considered in the definition of national business models are presented. This will increase National Promotion Teams' understanding about the different options available to them, facilitating the decision-making process and the development of a model that best adapts to their market.

With all the information analyzed, and considering the different characteristics of the models, some of which are considered more important than the others, like government involvement, replicability or acquisition costs, three business models stand out: DECA, klimaaktiv and ZKG. These conclusions reached, are Creara's opinion based on the analysis of the business models at an international level, and may not coincide with the characteristics of specific national markets. For this reason, National Promotion Teams must use this report to identify the quality assurance scheme that best adapts to their countries.

2 INTRODUCTION

The objective of this report is to acquire understanding of different existing business models for the implementation of quality assurance schemes. Through their description, comparison and identification of different characteristics related to energy efficiency services, rationale for National Promotion Teams will be provided. By doing this, it will allow them to implement functioning quality-assurance schemes that they consider have the highest adaptability to the qualities of their national markets.

Generally, countries follow a similar framework for standardization and certification. Within this framework, several organizations can be identified in each country:

-  National Standard Body, which represents its country in the International Standardization Organization;
-  One National Accreditation Body, which accredits the competence and integrity of Certification Bodies operating in the country;
-  Certification bodies, which are organizations accredited by the National Accreditation Body and offer auditing and certification of objects to standards;
-  Certified objects which are organizations, systems, products, processes or services that are the subject of certification.

The quality assurance schemes developed for each nation aim to scale up investment in building energy efficiency by establishing quality certification frameworks for energy efficiency services across Europe, which do not currently exist.

Using the draft Guidelines of the European Technical Criteria developed by QualitEE¹ as its base, the report will present the advantages and disadvantages of the different business models for different stakeholder groups and sizes, processes, structures, costs and efforts.

To collect the necessary information, 84 business models were initially analyzed and later reduced to 20. These twenty business models were then sent (along with relevant information about them) to our project partners, who were asked to evaluate and grade them according to various criteria. The 10 business models with the highest scores will be analyzed in this report.

Furthermore, a benchmark will be conducted analyzing the most important qualities of the different business models identified and presenting key aspects related to incomes and expenses to be considered in the definition of national business models. This will increase National Promotion Teams' understanding about the different options available to them, facilitating the decision-making process and the correct choosing of a model that adapts correctly to their market.

The report has been developed as a part of "QualitEE – Quality Certification Frameworks for Energy Efficiency Services" project supported by the EU's Horizon 2020 programme.

A quality assurance business model describes how an organization creates, delivers and captures value in economic, social or other context while evaluating and modifying the organization's procedures to make sure they meet the pre-established quality criteria.

¹ The Draft Guidelines of the European Technical Criteria are available through the following link:
https://qualitee.eu/wp-content/uploads/QualitEE_3.1_Guidelines_V1.2_180124.pdf

A quality assurance business model for energy efficiency services is necessary to operationalize the criteria or verification procedures that are required to enforce the quality of energy efficiency projects.

To get a broad spectrum the business models that will be analyzed in this report are not all applied specifically to energy efficiency services but they are all related to energy and energy efficiency. Later, National Promotion Teams and National Discussion Platforms will decide which business model best adapts to their country and EES in their markets.

3 METHODOLOGY











For this report, 84 quality assessment schemes were identified by the QualitEE consortium – each partner at national level and Creara at national and international levels. Their most important characteristics were recognized and studied, including: scheme, scope, implementation phases, a brief explanation of the main concepts, the most important stakeholders, the status of implementation and advantages and disadvantages.

Through this process, 63 models were discarded and the 21 most relevant were moved to the next phase. This was done by assessing the models that were considered strongest to ensure quality, based on different aspects such as definition of requirements, level of control, and implementation costs at both country and user level.

The identified 21 models were sent, along with relevant information about them, to QualitEE partners for them to rate and evaluate them in accordance with two parameters: replicability of the business model in their own countries and quality assessment. They were also asked to answer a series of questions to get a more comprehensive view about their perception of the models. These included the advantages and disadvantages about each model and their general input or comments on them.

It was decided that the 10 models with the highest scores would be included in this report to be examined in detail to give National Promotion Teams the necessary information for them to choose the model that they consider best adapts to their national markets.

Within the scope of this report, the selected quality assurance business models will be presented and analyzed, and they are as follows:

-  DECA- Energy Service Provider Efficiency & Contracting Austria (by its German acronym), Austria
-  Grazer-EnergieAgentur's Thermoprofit, Austria
-  BUND's Energy Saving Hospital Certificate, Germany
-  ISO- International Standardization Organization, International level
-  CHPQA- Combined Heat and Power Quality Assurance Programme, United Kingdom
-  Passive House, originally from Germany, implemented internationally
-  Guidelines; Energy Performance Contracting: Standard Contract, Austria
-  ANESE Certificate, Spain
-  KLIMAKTIV, Austria
-  Quality Label in Construction (ZKG), Slovenia

The analysis of the business models presents the basis for National Promotion Teams to acquire knowledge about the different options presented.

This will be done, firstly by including a standard delivery scheme of the model as well as its key features. Then, a canvas analysis is conducted for each business model, which provides a coherent view of their key drivers and singularities. Within this framework, a value proposition is presented with the aim of identifying the added value of each model, as represented by the gains for the EES client of receiving a certified service.

To further increase and facilitate the understanding of the information available to National Promotion Teams, a benchmark was carried out looking at the most important qualities identified from the different quality assurance schemes and using the mentioned qualities to compare them against each other.

Furthermore, two essential factors required in the definition of a business models, which are income and expenses, are presented along with different key aspects to be considered by the National Promotion Teams.

4 DECA

4.1 Description

Dienstleister Energieeffizienz & Contracting Austria -DECA- is an association representing Austrian market players that deal with Energy Efficiency and Contracting, made up by 41 relevant energy efficiency services companies in the country.



DECA is also an independent platform for companies seeking to promote the development of high quality energy efficiency (EE) services in the Austria market, by following not only technical aspects, but also economic, environmental and social criteria.

To do so, a quality label was launched by DECA into the energy efficiency market for those services that meet a set of requirements. Depending on the type of EE service provided, the requirements to receive the quality label are different. Specifically, they identified 9 quality criteria for 7 EE services. Each criterion covers a distinct aspect of the EE service and they will be explained below.

4.2 Phases of quality assurance scheme procurement

4.2.1 Quality assessment criteria and compliance

As previously mentioned, to attain DECA's label and deem an EES a quality assurance scheme, certain quality criteria to be met have been established:

-  **QC 1 Adequate analysis:** the first step to implement EESs is the analysis of the energy-consuming unit to identify possible savings. For their correct implementation, prerequisites are established, including but not limited to, an agreement on the process of the analysis, adequate procurement and analysis of the obtained data and adequacy of the recommendations.
-  **QC2 Rendering of services in the implementation of technical actions:** the technical measures implemented in EESs are to meet certain DECA quality standards: rendering of services in accordance with applicable standards, statutes and approval conditions, timeliness, ensuring the functionality of the technical actions, or the determination of services and documentation of services rendered.

- ✔ **QC3 Savings guarantee:** for savings guarantee to be beneficial to the client they must meet certain conditions: adequate amount of savings, dependency of remuneration on the attainment of savings and adequate intervals for the verification of compliance with guarantee promise.
 - ✔ **QC4 Verification of energy savings:** energy savings are the main pillar of energy efficiency services. For this reason, DECA considers that the quality of an EES is determined by how said savings are determined, always through calculations. They identify three approaches:
 - Processes dependent on measured energy consumptions: energy saving is determined through the comparison of the current value with a reference consumption.
 - 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.
- The assessment criteria are the application of a standardized method for the calculation of energy savings and the selection of the adequate approach to the calculation of savings.
- ✔ **QC5 Value retention and maintenance:** maintenance work and repairs are subject to a quality assessment by DECA, which includes the compliance with the required system availability, rapid correction of faults, functionality of the facility once the agreement ceases and transparent recording of performance limits.
 - ✔ **QC6 Communication between the contractor and the client:** the quality of the energy efficiency service can also be assessed by the quality of the communication between providers and clients. The assessment criteria established to verify the process includes the disclosure of contact persons, the exchange of data, recording and updating the measures carried out by the contractor and taking organizational measures to encourage the commitment of operating staff.
 - ✔ **QC7 Maintenance of users' comfort:** the implementation of EESs should not present any impediment to the comfort of the user. To verify that this does not occur, DECA has established the following criteria: verification of current and quantitative user requirements and the implementation of qualitative methods to assess customer satisfaction.
 - ✔ **QC 8 Information and motivation of users:** since the user has an immense impact on the energy consumption of an object in many cases and thereby, also impacts the services rendered through EES, it has been realized overtime for the selected EES approaches, that they contain measures for the information and motivation of users.
 - ✔ **QC9 Comprehensible contractual stipulations for the contracting of specific regulatory requirements:** the quality of projects also lies in the shaping of the contract. For that reason, regulating reoccurring issues such as ownership transfer, handling of energy price risk, insurance or exit regulations, must be present in the contract to ensure its quality.

DECA developed the matrix shown in Table 1 to make it simpler for users to know which requirements they would need to meet, depending on the service offered:

Table 1 – Quality label – Selection Matrix

Quality Criteria	Adequate analysis	Implementation of technical measures	Savings guarantee	Proof of energy-saving	Value retention, maintenance	Communication Contractor-Client	User's comfort	Information and motivation of users ²	Comprehensibility Agreement
<i>EE services</i>									
Energy consultancy	X			X		X			
Energy performance contracting	X	X	X	X	X	X	X	X	X
Supply contracting	X	X	X ³	X	X	X	X		X
Operational contracting	X	X	X	X	X	X	X	X	X
Implementation of technical energy efficiency measures	X	X		X		X	X		
Re-commissioning	X	X	X	X		X	X	X	
Introduction of an energy management system	X			X		X		X	

Source: DECA, Catalog of criteria 2017

More information on the quality criteria can be found through DECA's website: <https://www.deca.at/>

4.2.2 Granting of the DECA Label

DECA Label follows a “self-declaration with plausibility check” method. This means that the energy service provider registers at DECA's website and signs the self-commitment and by doing so they declare that all the energy services they provide that carry the DECA-Quality Label meet the Label Criteria. Members of DECA Association can use this for free and non-members must pay a 125€ service fee. Each project has a unique ID-Label. To generate a label the company must provide specific information about the project.

4.2.3 Evaluation of compliance with standards

Once the project is concluded or yearly if a longer project is concerned, the client should verify compliance of the criteria and fill-out a verification form provided by DECA. If reasonable doubt arises, the client can assign a DECA member to check if the criteria established have been met. If a self-committed company has not met the standards DECA can revoke the company's registration. The energy service provider must sign a commitment to use DECA's quality label which must be renewed every year.

Under this business model, it is not the provider but the service itself that gets the quality label, meaning that every EE service is standardized and comparable to others.

² QC8 will be assessed only if the precise product/project also covers user-motivation measures.

³ In the case of facilities-contracting, savings guarantee of QC3 will be applied only if measures for the reduction of energy demand are also promised in addition to energy efficiency.

4.2.4 Standard project delivery model

Figure 1 - Standard project delivery model for DECA



DESCRIPTION OF THE PROCESS

- DECA sets the quality criteria to be implemented in projects that carry their label
- Provider of EES signs the self-declaration committing to meet the criteria on the projects that carry the Label
- Each project executed under DECA's quality criteria carries a Label with a specific ID number
- Projects are executed with the DECA quality Label.
- If reasonable doubt exists, the client may contact a DECA Association member to verify compliance with the criteria
- If the provider does not meet the standards, DECA is allowed to revoke the company's registration

Source: Creara Analysis

4.3 Main Features

The main features of DECA's quality label are found in [jError! No se encuentra el origen de la referencia.](#) below:

Table 2 – Main features for DECA

	DECA's Quality Label
Principal action	Label
Country	Austria
Type	Voluntary
Target user	All users
Authority	Association
Phases	<ol style="list-style-type: none"> 1. Establishment of quality criteria 2. Self-declaration of ESCOs ascribing to quality criteria 3. Execution of project with DECA Label 4. Plausibility check in case of reasonable doubt of compliance with quality criteria by a DECA Association member <p>If the criteria are not met, the client may ask for the withdrawal of the company's registration</p>
Stakeholders involved on each phase	<ol style="list-style-type: none"> 1. DECA Association 2. EES providers 3. Auditors (members of DECA Association) 5. EES clients
Support measures/ dissemination	<ol style="list-style-type: none"> 4. Information, events and trainings, market researches
Year of implementation	2017
Costs	Membership and self-declaration fees

Source: Creara Analysis

4.4 Key factors

4.4.1 Incomes

Figure 2 - DECA: Incomes

INCOMES				
FROM WHERE?	WHEN?	FROM WHOM?	METHOD	TYPE
Application fees	Before	Client	Percentage of the total cost of the project	Payment per quality criteria
Subscription/membership fees	During	ESCOs		Payment for all quality criteria at once
Evaluation costs	After	Government	Set amount	Payment installments per quality assurance phases
Implementation costs		Association		
Certification costs				Payment in full of all phases
Usage costs				
Bidding costs				
Auditing costs				

Source: Creara Analysis

4.4.2 Expenses

Figure 3 - DECA: Expenses

EXPENSES
Marketing
Software
Staff (salaries)
Events
Equipment
Market research
Administrative expenses
Overhead

Source: Creara Analysis

4.5 Canvas Analysis

A deeper analysis of DECA’s quality label business model is presented in Table 3:

4.5.1 BM Canvas Analysis

Table 3 - DECA canvas analysis

<p>KEY PARTNERS</p> <ul style="list-style-type: none"> • All other EES providers: EPC providers, consultancy, supply contracting, operational contracting, etc. • Client: natural or legal entity interested in implementing EE measures • DECA: association that grants its label to quality services • Independent commission: third parties that conduct the evaluation to assess if DECA requirements are met, if doubt arises. Usually DECA association members 	<p>KEY ACTIVITIES</p> <ul style="list-style-type: none"> • DECA is an association that represents Austrian market players dealing with Energy Efficiency and Contracting • 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 	<p>VALUE PROPOSITION</p> <ul style="list-style-type: none"> • Easy to perform due to pre-determined steps • Objective criteria established by an external institution • If the customer is not satisfied, a third party will verify whether the service was provided following the quality criteria • International recognition 	<p>CUSTOMER RELATIONSHIP</p> <ul style="list-style-type: none"> • Customer-DECA contact via email or phone • Continuous long-term relationship through monitoring and control • Co-creation, consumers provide feedback • Possibility of self-service • If the customer is not satisfied, a third party will check the service 	<p>CUSTOMER SEGMENT</p> <ul style="list-style-type: none"> • ESCOs that are self-committed companies • Clients of the EE services as prescribers of the label • DECA Association members
<p>KEY RESOURCES</p> <ul style="list-style-type: none"> • Brand and patent • Human capital (technicians, sales staff, etc.) • Association and partners • Resources to evaluate criteria compliance if reasonable doubt arises 			<p>CHANNELS</p> <ul style="list-style-type: none"> • Awareness: webpage and partners • Evaluation: webpage sample cases • Purchase and delivery: partners • After sales: online platform and partners 	
<p>COST STRUCTURE</p> <ul style="list-style-type: none"> • Fixed costs: employees’ salary (sales staff, and other human resources), servers, marketing. • Variable costs: sales costs. Costs associated to the label. Costs of quality revision. 		<p>REVENUE STREAMS</p> <ul style="list-style-type: none"> • Yearly fee of 125€ for non-members • Membership fees (of the DECA association): <ul style="list-style-type: none"> - 2,570 € for companies with over 50 employees. - 1,290 € for companies with under 50 employees. - 270 € for the self-employed. 		

Source: Creara Analysis

4.5.2 Value proposition

Table 4 - Value proposition for DECA

PROVIDER OF THE CERTIFIED EE SERVICE		CLIENT OF THE CERTIFIED EE SERVICE	
<p>SERVICES</p> <ul style="list-style-type: none"> ✔ The project is developed following DECA criteria. ✔ Initial audit of energy consuming unit and identification of savings. ✔ Solution development according to DECA standards and implementation of identified measures. ✔ Monthly monitoring and maintenance examination, throughout the renting/ financing period ✔ Provision of the label 	<p>GAIN CREATORS</p> <ul style="list-style-type: none"> ✔ Improve image by offering a quality service with pre-established guidelines by an independent association ✔ Help reduce energy costs ✔ Reduces impact on environment 	<p>GAINS</p> <ul style="list-style-type: none"> ✔ Savings are guaranteed ✔ Improve energy service quality ✔ Reduce energy and CO₂ consumption ✔ Minimize financial and technical risks: <ul style="list-style-type: none"> • The provider oversees the financial aspects of the project. ✔ Increase profitability of the business 	<p>CUSTOMER JOB(S)</p> <ul style="list-style-type: none"> ✔ Run profitable business (reducing costs by maintaining operation equal) ✔ Have functioning operations: <ul style="list-style-type: none"> - “Out-source” non-core activities ✔ Improve energy efficiency in their business. ✔ Improve image by being more environment friendly
	<p>PAIN RELIEVERS</p> <ul style="list-style-type: none"> ✔ Minimize financial and technical risks by following DECA criteria. ✔ Most of the financial obligations and timeliness are met by the provider. 	<p>PAINS</p> <ul style="list-style-type: none"> ✔ Influence on core business ✔ Need for resources for non-core activities ✔ Lack of time and resources for business ✔ Upfront investment costs 	

Source: Creara Analysis

5 THERMOPROFIT

5.1 Description

Thermoprofit is the name of the quality guarantee created by the Graz Energy and implemented for the first time in 1996. This guarantee seal is also supported by the council of Graz and the province of Styria, both in Austria.

Thermoprofit constitutes a quality label linked to a series of standards to be met by **projects**. The owners and/or users of buildings are guaranteed reliable high-quality proposals. The Thermoprofit label may be used exclusively by Thermoprofit partners who are assessed by Graz Energy Agency and an independent commission at regular intervals to confirm that they are observing their standards.

The Thermoprofit Network consists of suppliers of total service packages called Thermoprofit partners that are prime contractors. They co-operate with regional enterprises in the execution. Their special characteristic is that they offer a Thermoprofit guarantee of undisturbed operation, the observance of comfort parameters, guaranteed energy and cost savings, etc. In providing the energy services required, they not only take on comprehensive tasks on behalf of the user of the building, but also the technical and economic risks⁴.

Thermoprofit's main characteristics are: no private client investments are required because the contractor or service provider oversees pre-financing; partners act as general contractors: they take care of the planning, execution, maintenance, operation and financing of the project; and finally, partner companies are responsible for adhering to the quality standards. They guarantee the decrease of energy costs, high quality measures, comprehensive services and comply with comfort standards.

Under this business model, the energy services provider offering the best tendering criteria is selected objectively through a bidding process.

5.2 Phases of quality assurance scheme procurement

5.2.1 Quality assessment criteria and compliance

There are different types of quality criteria that Thermoprofit considers:

- ✔ **Thermoprofit Guarantee:** the EE service provider guarantees the user's comfort as well a reduction of energy costs
- ✔ **Clients' satisfaction with the benefits of the EE service:** a complete analysis of the technical and economic measures should be performed. Operation, maintenance, quick problem solving, etc. should be considered.
- ✔ **Contract design:** a clear and transparent contract that distributes costs and risks without doubt or grey zones is required.
- ✔ **Consideration of the regional EE service providers as partners or subcontractor in Thermoprofit projects.**

5.2.2 Evaluation of compliance with standards and execution

To execute projects and later evaluate if they follow their standards and requirements, *Thermoprofit* established the following implementation and acquisition scheme:

- ✔ Development of the energy analysis and the most suitable contracting model
 - Inventory and energy desktop analysis of the buildings: proposed measures and preparation of data for the tender
 - Development of the Thermoprofit solution, adapted to the respective conditions
 - Identification of possible subsidies and funding opportunities and development of the implementation model.

⁴ Source: Project MEELS – IEA: Thermoprofit: Marketing Performance Contracting. Available at: http://www.energy-cities.eu/db/graz_566_en.pdf

- Development of the decision basis for implementation which enables the building owner to make an informed decision on how to implement the project. By doing this they ensure that the steps taken are appropriate and designed responding to the specific demands of each customer.

Supervision of the tender of the *Thermoprofit* project to make sure they meet requirements

- Pre-selection of suitable providers, which may involve expressions of interest in accordance with procurement laws.
- Development of a contract adapted to the project in accordance with *Thermoprofit* quality criteria
- Preparation of the tender documents.
- Implementation of the call for tenders (in accordance with the Public Procurement Act)
- Continuous information activity.

Determination of the best bidder and contract negotiations

- Offer comparison and evaluation according to previously defined criteria.
- Support in contract negotiations and in the selection of the most economically advantageous tender.
- Short documentation of the project for marketing or the public presentation of the project.
- The entire project implementation takes place in close consultation with the client. Interim results are presented and coordinated regularly.





Project execution and control

- Technical support for the project implementation (quality control, agreement with award, etc.)
- Billing control: review of the contractor's annual statements as well as the climate, energy price and usage adjustments.
- Training of the building managers of the contractor.
- Continued quality control throughout the project.

5.2.3 Granting of the *Thermoprofit* Label

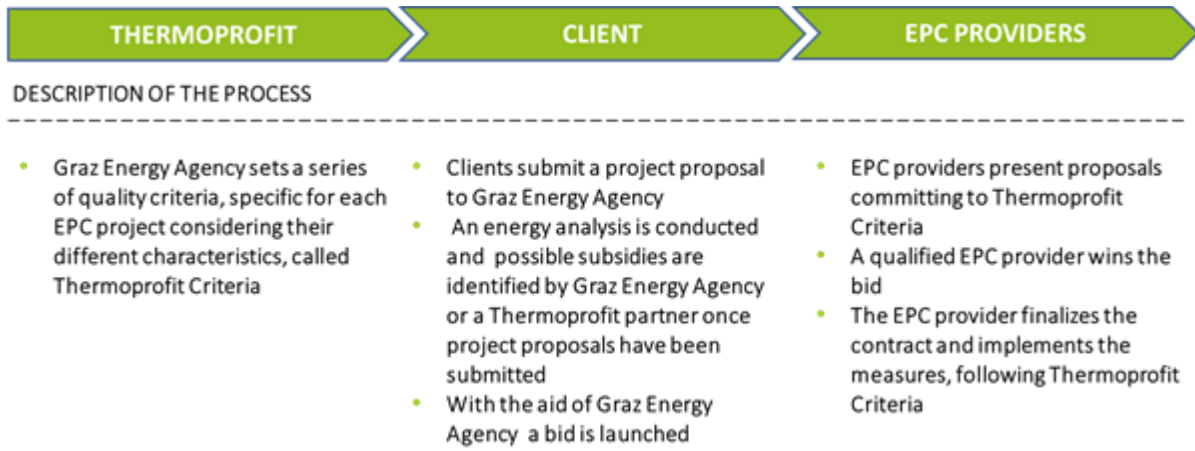
Under this business model, it is once again the service that is subject to the assurance scheme rather than the service provider itself. Once the measures are implemented, and the label awarded, regular inspections are carried out to make sure that the quality is maintained.

Thermoprofit addresses owners and users of larger infrastructure such as:

-  Public buildings (schools, offices hospitals, etc.).
-  Commercial enterprises (office buildings, service enterprises, etc.)
-  Residential complexes.
-  Industrial plant, logistics centers.

5.2.4 Standard project delivery model

Figure 4 - Standard project delivery model for Thermoprofit



Source: Creara Analysis

5.3 Main Features

The main features of *Thermoprofit's* quality label are found in Table 5:

Table 5 - Main features for Thermoprofit

	Thermoprofit
Principal action	Label
Scope	Regional- Province of Styria and Council of Graz
Type	Voluntary
Target user	All users
Authority	Graz Energy Agency
Phases	<ol style="list-style-type: none"> 1. Inventory and initial analysis to determinate possible measures 2. Clarification of possible subsidies and development of the appropriate implementation model 3. Identify the best contracting provider, and prepare the project bases, the Thermoprofit contract and the tender documents. 4. Contract evaluation and negotiation. Conclusion and signing of the contract 5. Project execution and control
Stakeholders	<ol style="list-style-type: none"> 1. Grazer – EnergieAgentur and associates 2. Graz council 3. Province of Styria 4. EPC providers 5. EES clients 6. EPC facilitators 7. Financial institutions
Support measures/ dissemination	Information, events and conferences, local dissemination and publishing of success cases
Year of implementation	1996
Costs	Consulting costs and bidding income

Source: Creara Analysis

5.4 Key factors

5.4.1 Incomes

Figure 5 - Thermoprofit: Incomes

INCOMES				
FROM WHERE?	WHEN?	FROM WHOM?	METHOD	TYPE
Application fees	Before	Client	Percentage of the total cost of the project	Payment per quality criteria
Subscription/membership fees	During	ESCOs		Payment for all quality criteria at once
Evaluation fees	After	Government	Set amount	Payment installments per quality assurance phases
Implementation fees		Association		
Certification fees				Payment in full of all phases
Usage fees				
Bidding fees				
Auditing fees				

Source: Creara Analysis

5.4.2 Expenses

Figure 6 - Thermoprofit: Expenses

EXPENSES
Marketing
Software
Staff (salaries)
Events
Equipment
Market research
Administrative expenses
Overhead

Source: Creara Analysis

5.5 Canvas Analysis

A deeper analysis of *Thermoprofit* quality label business model is presented in Table 6:

5.5.1 BM Canvas Analysis

Table 6 - Thermoprofit canvas analysis

<p>KEY PARTNERS</p> <ul style="list-style-type: none"> • EPC provider: the energy service provider who delivers energy services in the form of EPC (post bidding process) • Client: interested in implementing EE measures • Graz Energy Agency: public agency that marks an EPC provider with its own label based on a commitment to fulfil the quality criteria that they previously settled • Graz Energy Agency as an independent commission: assessment of measures and quality of project. • Province of Styria and Council of Graz: supporters of the quality label 	<p>KEY ACTIVITIES</p> <ul style="list-style-type: none"> • Grazer – EnergieAgentur seeks to scale up energy efficiency and green energy • Problem solving focused on saving of energy, reduction of CO₂ emissions and energy prices • Consulting services, continued monitoring and advice on energy optimization 	<p>VALUE PROPOSITION</p> <ul style="list-style-type: none"> • Standardization and comparability of EE services which makes it easier to pick the right EES provider • Energy savings guarantee • Independent advice and project support • Support in the selection of a suitable contractor through a bidding process • Every service is evaluated • Years of experience. • Endorsement from Province of Styria and Graz Council • All in one solution • No required investment • Reduction in consumption of energy 	<p>CUSTOMER RELATIONSHIP</p> <ul style="list-style-type: none"> • Contact via bid proposal • Technical support through bidding process • Personal assistance • Co-creation since consumers provide feedback 	<p>CUSTOMER SEGMENT</p> <ul style="list-style-type: none"> • Associated companies (ESCOs) that present tender offers. • Clients of the EE services, mostly owners or tenants of larger infrastructure, regardless of the sector
<p>COST STRUCTURE</p> <ul style="list-style-type: none"> • Fixed costs: employees’ salary (sales staff, software developers and other human resources), servers, marketing • Variable costs: energy efficiency implementation costs, bidding costs 		<p>REVENUE STREAMS</p> <ul style="list-style-type: none"> • Revenues from bidding processes • Revenues from services offered • Government allocation for the program 		

Source: Creara Analysis

5.5.2 Value proposition

Table 7 - Value proposition for Thermoprofit

PROVIDER OF THE CERTIFIED EE SERVICE		CLIENT OF THE CERTIFIED EE SERVICE	
<p>SERVICES</p> <ul style="list-style-type: none"> ✔ Contract is signed under quality criteria pre-established in the bid ✔ Initial audit/identification of possible savings ✔ Implementation of technical measures ✔ Maintenance and monitoring ✔ Ensured quality due to bidding process and label requirements ✔ Provides a service with a quality label 	<p>GAIN CREATORS</p> <ul style="list-style-type: none"> ✔ Improve image by offering a quality service ✔ Helps reduce energy costs ✔ Reduces impact on environment 	<p>GAINS</p> <ul style="list-style-type: none"> ✔ Savings are guaranteed <ul style="list-style-type: none"> • Increase in benefits ✔ Reduce CO₂ consumption and increase general energy efficiency ✔ Technical support throughout implementation process 	<p>CUSTOMER JOB(S)</p> <ul style="list-style-type: none"> ✔ Run profitable business/ premises (reducing costs by maintaining operation equal) ✔ Improve public perception by taking environmental measures ✔ Increase energy efficiency in infrastructure ✔ Reduction of energy costs ✔ High quality service ✔ Increase user control
	<p>PAIN RELIEVERS</p> <ul style="list-style-type: none"> ✔ Thermoprofit partner oversees planning, execution, maintenance, operation and financing ✔ Aid from partners to tackle bidding processes 	<p>PAINS</p> <ul style="list-style-type: none"> ✔ Difficulties in implementing quality assurance scheme and complications throughout the project ✔ Private investment requirements that deviate from core business ✔ Bidding processes can be tedious 	

Source: Creara Analysis

6 BUND “ENERGY SAVING HOSPITAL” CERTIFICATE

6.1 Introduction

The BUND, *BUND für Umwelt und Naturschutz*, is one of Germany’s biggest organizations for the protection of the environment, with a total of 390,000 members. It is political party-independent and promotes itself as a lobbying organization. Its fields of activity comprise three areas: environment, energy and transport.

The BUND has lobbied successfully in climate protection for many years. Its aim is to reduce energy demand drastically through intelligent solutions, to get a more efficient energy conversion and to promote the use of renewable energy.





They consider that the health sector is a good example because a 25% reduction in energy consumption is possible, technically as well as economically. The BUND together with hospitals strives for a material and lasting reduction of energy demand.

This is the background for the BUND certification “energy saving hospital”, created in the year 2001. Any hospital in Germany can acquire it upon the evidence of saving energy on a large scale and reducing its CO₂ output over an established period.

6.2 Phases of quality assurance scheme procurement

6.2.1 Quality assessment criteria and compliance

High energy savings act as the base for the establishment of the criteria necessary to obtain the BUND Certificate. Hospitals are evaluated by their energy consumption performance over the last 5 years. Four criteria are recognized and hospitals must meet at least two of them to get the Certificate:

-  **Reduction of CO₂ emissions:** the hospital reduces CO₂ emissions, determined by energy consumption, by at least 25%. To determine the CO₂ emissions, the total energy consumption (electrical energy and thermal energy) must be assessed.
-  **Continuous reduction of energy consumption:** the hospital has continuously reduced its energy consumption for several years, thus reducing its specific energy consumption figures. These are below the corresponding mean values of VDI 3807⁵ in the corresponding hospital category depending on the number of beds.
-  **Long-term optimal energy consumption:** the hospital falls below one of the mean values as well as one of the guideline values of VDI 3807 in the corresponding hospital category according to the number of beds.
-  **Implementation of energy management:** the hospital can demonstrate processes to record and evaluate energy data regularly and to carry out appropriate measures. A person responsible for energy management must be appointed.

6.2.2 Evaluation of compliance with standards and execution

The criteria will be checked in cooperation with the hospital’s technical and commercial management. The BUND will commission an external expert for the technical examination, cooperating closely with the regional “Energieagentur”⁶. The examination will be based on hospitals’ annual consumption.

6.2.3 Granting of BUND Certificates

The BUND is interested in ensuring that the achieved high technical level of saving measures will be maintained in the future or adapted to the state of the technically feasible and economically justifiable. The seal of approval is property of the BUND and is therefore initially awarded for a period of 5 years. After this period, the BUND reserves the right to check whether the criteria continue to be met.

Under this scope, the certificate is issued regarding energy performance rather than by assessing the quality of the energy service provided. This certificate is supported by Rita Schwarzelühr-Sutter; the

⁵ Consumption values for buildings as established by the Association of German Engineers

⁶ Regional, public-private partnership financed competence centers for energy efficiency.

Parliamentary State Secretary in the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety.

6.2.4 Standard project delivery model

Figure 7 - Standard project delivery model for BUND



DESCRIPTION OF THE PROCESS

- The BUND establishes 4 quality criteria, and requires that clients meet at least 2 of them to obtain the Certificate
- Clients from the health sector (hospitals, clinics, etc.) implement the measures in order to meet BUND’s pre-established criteria
 - Clients apply to obtain the Certificate
- To implement energy performance measures, clients contact ESCOs
- BUND verifies compliance with at least 2 of the criteria, in cooperation with technical staff from the facilities
 - If criteria are met, the BUND awards the Certificate
 - The certification is re-evaluated every 5 years

Source: Creara Analysis

6.3 Main Features

The main features of BUND'S energy performance certificate are found in the following table:

Table 8 - Main features for BUND Certificate

	BUND Certificate
Principal action	Certificate
Country	Germany
Type	Voluntary
Target user	Health sector (Hospitals, clinics, etc.)
Authority	BUND für Umwelt und Naturschutz
Phases	<ol style="list-style-type: none"> 1. Contact EES provider to analyze measures to be taken. 2. Apply measures in accordance with at least two Certificate requirements. 3. Apply for Certificate. 4. Evaluation and issue of Certificate. 5. Re-evaluation after five years.
Stakeholders	<ol style="list-style-type: none"> 1. Stakeholders in the health sector. 2. EES Provider. 3. BUND. 4. Government (through public support) 5. Facilitators.
Support measures/ dissemination	Website, publishing of successful cases, conferences and awards
Year of implementation	2001
Costs	Implementation and certificate fees

Source: Creara Analysis

6.4 Key factors

6.4.1 Incomes

Figure 8 - Bund: Incomes

INCOMES				
FROM WHERE?	WHEN?	FROM WHOM?	METHOD	TYPE
Application fees	Before	Client	Percentage of the total cost of the project	Payment per quality criteria
Subscription/membership fees	During	ESCOs		Payment for all quality criteria at once
Evaluation fees	After	Government	Set amount	Payment installments per quality assurance phases
Implementation fees		Association		
Certification fees				Payment in full of all phases
Usage fees				
Bidding fees				
Auditing fees				

Source: Creara Analysis

6.4.2 Expenses

Figure 9 - BUND: expenses

EXPENSES
Marketing
Software
Staff (salaries)
Events
Equipment
Market research
Administrative expenses
Overhead

Source: Creara Analysis

6.5 Canvas Analysis

A deeper analysis of BUND’s certificate business model is presented in Table 9:

6.5.1 BM Canvas Analysis

Table 9 - BUND canvas analysis

<p>KEY PARTNERS</p> <ul style="list-style-type: none"> • Bund für Umwelt und Naturschutz Deutschland (BUND): German non-governmental organization (NGO) dedicated to preserving nature and protecting the environment and increasing energy efficiency • Health sector: those interested in obtaining the Certificate through improvement of energy performance • EES providers: offers the stakeholders in the health sector measures to improve energy performance • Independent commission: accredits optimal energy performance in the health sector • Government 	<p>KEY ACTIVITIES</p> <ul style="list-style-type: none"> • Issue an energy efficiency Certificate to show how intelligent solutions can drastically reduce energy consumption, achieve efficient energy conversion, and drive the use of renewable energy • Continued monitoring to ensure that the measures are sustained over time 	<p>VALUE PROPOSITION</p> <ul style="list-style-type: none"> • Exposes the hospital's environmental commitment to a broader public and promotes imitation • Supports the commitment of the hospital management, technical staff and contractor for energy savings • Informs the public and experts about the outstanding energy savings through different broadcasting channels • Years of experience • High quality assurance: only 20% of applicants meet the requirements to get the certificate • Governmental endorsement in the form of public support 	<p>CUSTOMER RELATIONSHIP</p> <ul style="list-style-type: none"> • Hospital applies for the Certificate by filling in a questionnaire • Continuous long-term relationship through monitoring and control after five years 	<p>CUSTOMER SEGMENT</p> <ul style="list-style-type: none"> • ESCOs to implement energy performance measures • Health sector: hospitals, clinics, etc. • Accrediting entity to evaluate energy performance
<p>COST STRUCTURE</p> <ul style="list-style-type: none"> • Fixed costs: employees’ salary (sales staff, software developers and other human resources), servers, marketing • Variable costs: energy efficiency implementation, sales costs, costs associated to the certificate 		<p>REVENUE STREAMS</p> <ul style="list-style-type: none"> • Processing fee of at least 300€ for initial application • Hospitals that receive the seal: 5 euros per year per hospital bed or a minimum of 1,000€ and a maximum of 4,500€, throughout the 5 years. • Re-examination fee: 500€. <p>(None of the prices include VAT)</p>		

Source: Creara Analysis

6.5.2 Value proposition

Table 10 - Value proposition for BUND

PROVIDER OF THE CERTIFIED EE SERVICE		CLIENT OF THE CERTIFIED EE SERVICE	
<p>SERVICES</p> <ul style="list-style-type: none"> ✔ The service provider will implement energy performance measures that ascribe to BUND criteria ✔ Solution Development that improve energy standards ✔ Implementation of technical measures in line with the requirements ✔ Long-term monitoring and maintenance examination 	<p>GAIN CREATORS</p> <ul style="list-style-type: none"> ✔ Improve image by offering an assurance of energy performance to an important sector (health) ✔ Implementation of EES. ✔ Long term energy management 	<p>GAINS</p> <ul style="list-style-type: none"> ✔ Assurance of improved energy performance ✔ Long-term optimal energy consumption ✔ Reduce CO₂ consumption ✔ Better public perception by using the award 	<p>CUSTOMER JOB(S)</p> <ul style="list-style-type: none"> ✔ Improve energy efficiency and performance, through long periods of time ✔ Improve public perception by being more environmentally friendly ✔ Increase savings due to a decrease in energy costs
	<p>PAIN RELIEVERS</p> <ul style="list-style-type: none"> ✔ Costs may be relieved by savings and increase in energy performance 	<p>PAINS</p> <ul style="list-style-type: none"> ✔ High certification costs. ✔ High level of bureaucracy. ✔ Assurance in energy performance, not quality of service 	

Source: Creara Analysis

7 ISO

7.1 Description

The International Organization for Standardization, is an independent, non-governmental organization, the members of which are the standards organizations of the 163-member countries. The use of the standards supports in the creation of products and services that are safe, reliable and of good quality. The standards help businesses increase productivity while minimizing errors. By enabling products and services from different markets to be directly compared, they help companies entering new markets and assist them in the development of global trade on a fair basis.




7.2 Phases of quality assurance scheme procurement

7.2.1 Quality assessment criteria and compliance

The key ISO principles in standard development are:

- ✔ **ISO standards respond to a need in the market:** ISO does not decide when to develop a new standard, but responds to a request from industry or other stakeholders such as consumer groups.

Typically, an industry sector or group communicates the need for a standard to its national member who then contacts ISO.

-  **ISO standards are based on global expert opinion:** ISO standards are developed by groups of experts from all over the world, that are part of larger groups called technical committees. These experts negotiate all aspects of the standard, including its scope, key definitions and content.
-  **ISO standards are developed through a multi-stakeholder process:** the technical committees are made up of experts from the relevant industry, but also from consumer associations, academia, NGOs and government.
-  **ISO standards are based on a consensus:** developing ISO standards is a consensus-based approach and comments from all stakeholders are considered.

ISO's role is to manage a group made up of independent technical experts nominated by their members.

The experts form a technical committee, responsible for a specific subject area, and begin the process with the development of a draft that meets a specific market need. This is then shared for commenting and further discussion.

The voting process is the key to consensus. The Draft becomes final committee draft (FCD) if the number of positive votes is above the quorum. When consensus on the content is reached, the text is finalized for submission as a draft International Standard (DIS). The text is then submitted to national bodies for voting and comment within a period of five months. It is approved for submission as a final draft International Standard (FDIS) if a two-thirds majority of the participating members of the technical committees and subcommittees are in favor and not more than one-quarter of the total number of votes cast are negative. If said consensus is achieved then the draft is on its way to becoming an ISO standard. If no agreement reached then the draft will be modified further, and voted on again. ISO will then hold a ballot with National Bodies where no technical changes are allowed (yes/no ballot), within a period of two months. It is approved as an International Standard (IS) if a two-thirds majority of the P-members of the TC/SC is in favor and not more than one-quarter of the total number of votes cast are negative. After approval, only minor editorial changes are introduced into the final text. The final text is sent to the ISO Central Secretariat, which publishes it as the International Standard⁷. From first proposal to final publication, developing a standard usually takes about 3 years.

The steps followed for the development are:

-  Proposal stage
-  Preparatory stage
-  Committee stage
-  Enquiry stage
-  Approval stage
-  Publication stage

7.2.2 Evaluation of compliance with standards and concession

Once standards have been approved, companies can contact their National Certification Organizations to seek said ISO certificates. These are the steps to be followed:

⁷ Source: ISO. Available at:

https://www.iso.org/iso/standards_development/processes_and_procedures/stages_description.htm

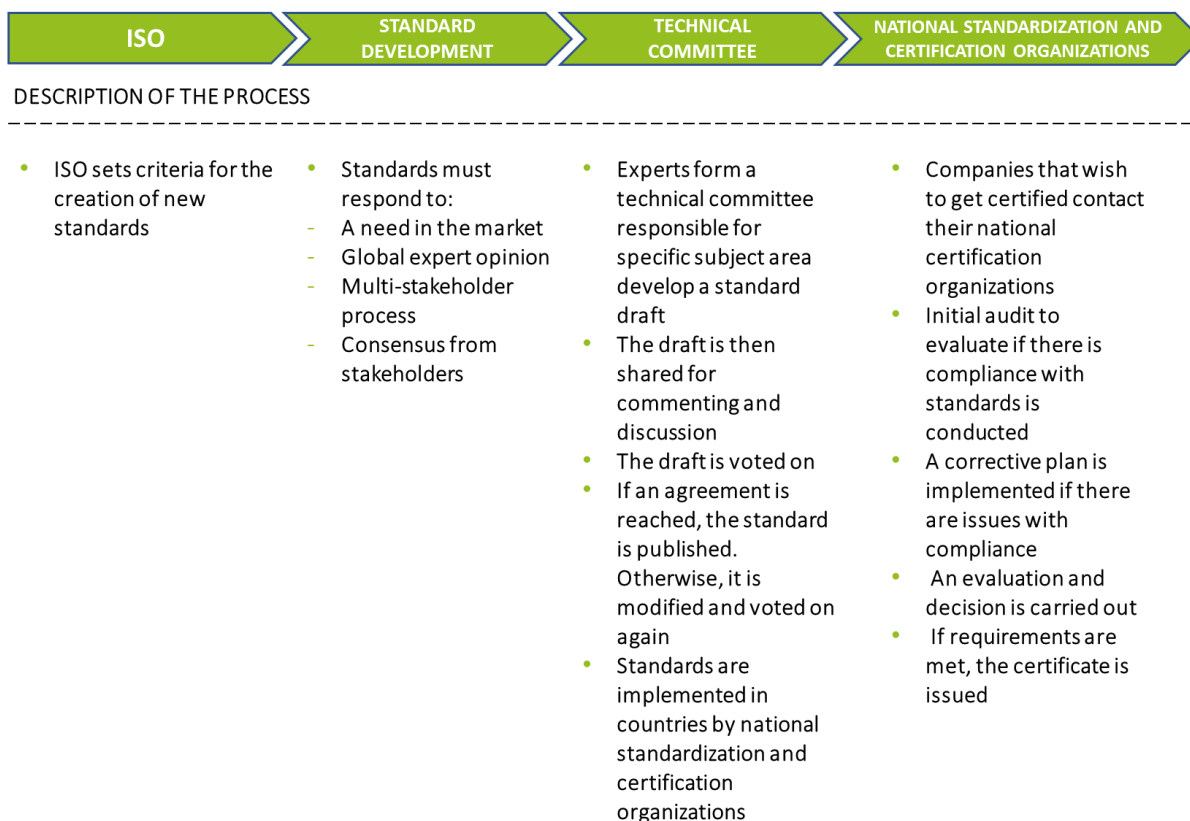
- ✔ Companies looking to get certified contact their National Certification Organizations with a request
- ✔ Initial audit to evaluate if there is compliance with the standards
- ✔ The type of certificate to be given is considered (system, product, service, etc.)
- ✔ A corrective plan of action is implemented if there are compliance issues
- ✔ An evaluation and decision is carried out
- ✔ If requirements are met, the certificate is issued

The provider of a product, process or service that meets the requirements defined in standards or technical specifications thus demonstrating this certification and constituting a differentiating element in the market, improves the image of products and services offered and generates trust between customers and consumers.

Under this business model, it is not the service that gets certified, and the focus is on process and procedure standardization rather than quality.

7.2.3 Standard project delivery model

Figure 10 - Standard project delivery model for ISO



Source: Creara Analysis

7.3 Main Features

The main features of ISO are found in Table 11:

Table 11 - Main features for ISO

	ISO
Principal action	Certificate
Scope	International
Type	Voluntary, but often required by clients
Target user	National standardization organizations and companies
Authority	ISO
Phases	<ol style="list-style-type: none"> 1. Proposal stage 2. Preparatory stage 3. Committee stage 4. Enquiry stage 5. Approval stage 6. Publication stage 7. Application to certificate via national certification organizations 8. Evaluation and compliance 9. Issue of the certificate
Stakeholders	<ol style="list-style-type: none"> 1. Standard proposers 2. Expert work groups 3. ISO Technical Committee 4. ISO Technical Sub-committee 5. ISO Organization 6. National standardization organizations 7. National certification organizations 8. Companies
Support measures/ dissemination	Worldwide recognition, informative events, media access, conferences, National Standardization Organizations.
Year of implementation	1947
Costs	Usage fees, subscriptions of members, revenues from reports

Source: Creara Analysis

7.4 Key factors

7.4.1 Incomes

Figure 11 - ISO: Incomes

INCOMES				
FROM WHERE?	WHEN?	FROM WHOM?	METHOD	TYPE
Application fees	Before	Client	Percentage of the total cost of the project	Payment per quality criteria
Subscription/membership fees	During	ESCOs		Payment for all quality criteria at once
Evaluation fees	After	Government	Set amount	
Implementation fees		Association		Payment installments per quality assurance phases
Certification fees				
Usage fees				Payment in full of all phases
Bidding fees				
Auditing fees				

Source: Creara Analysis

7.4.2 Expenses

Figure 12 - ISO: Expenses

EXPENSES
Marketing
Software
Staff (salaries)
Events
Equipment
Market research
Administrative expenses
Overhead

Source: Creara Analysis

7.5 Canvas Analysis

A deeper analysis of ISO’s business model is presented in Table 12:

7.5.1 BM Canvas Analysis

Table 12 - ISO canvas analysis

<p>KEY PARTNERS</p> <ul style="list-style-type: none"> • Standard proposers: those interested in the creation of new certificates (companies, governments, experts, etc.) • Global experts and working groups: the collectives that establish and go through the processes of creating new standards, in unison with the technical committees and sub-committees • ISO technical committees and sub-committees • National standardization organizations: the entities in charge of standardization processes at national levels • National certification organizations: the entities in charge of certification processes at national levels • Companies seeking certifications 	<p>KEY ACTIVITIES</p> <ul style="list-style-type: none"> • Development of voluntary international standards facilitating world trade by providing common standards. • Publishes technical reports, technical specifications, publicly available specifications, technical misprints, and guides. • Aid in the creation of products and services that are safe, reliable and of good quality. 	<p>VALUE PROPOSITION</p> <ul style="list-style-type: none"> • The standards help businesses increase productivity while minimizing errors • By enabling products and services from different markets to be directly compared, they help companies entering new markets and assist them in the development of global trade on a fair basis • The standards serve to safeguard consumers and the end-users of products and services, ensuring that certified products conform to the minimum standards set internationally • Endorsement by national standardization organizations and other relevant entities 	<p>CUSTOMER RELATIONSHIP</p> <ul style="list-style-type: none"> • Proposers of new standards contact ISO representatives in their countries • Companies that wish to get certified contact ISO representatives in their countries 	<p>CUSTOMER SEGMENT</p> <ul style="list-style-type: none"> • Standard proposers (experts, companies, governments, national standardization organizations etc.) • Financial institutions as prescribers of the certificate • Beneficiaries of the implementation of the standards (mostly companies) • National standardization and certification organizations
<p>COST STRUCTURE</p> <ul style="list-style-type: none"> • Fixed costs: employees’ salary (sales staff, software developers and other human resources), servers, marketing • Variable costs: expenses that stem from standardization processes (on-site market research, external consultant hires, working groups, etc.) and all those associated to use of ISO resources 		<p>REVENUE STREAMS</p> <ul style="list-style-type: none"> • Organizations that manage specific projects or lend experts to participate in technical work • Subscriptions of the member bodies, proportional to the GDP of each country • Sale of standards • Certification costs are estimated at \$5,000-50,000 		

Source: Creara Analysis

7.5.2 Value proposition

Table 13 - Value proposition for

PROVIDER OF THE CERTIFIED EE SERVICE		CLIENT OF THE CERTIFIED EE SERVICE	
<p>SERVICES</p> <ul style="list-style-type: none"> ✔ Provides common standards between nations ✔ Supports the creation of products and services that are safe, reliable and of good quality ✔ Supports the development of global trade 	<p>GAIN CREATORS</p> <ul style="list-style-type: none"> ✔ Improve image and chain processes by offering an internationally recognized standard 	<p>GAINS</p> <ul style="list-style-type: none"> ✔ Implementation of methods recognized internationally ✔ Better public perception ✔ Increase in savings by improvements in productivity ✔ International competitiveness 	<p>CUSTOMER JOB(S)</p> <ul style="list-style-type: none"> ✔ Implement international standards that improve their image ✔ Improve trade efforts ✔ Increase productivity minimizing errors ✔ Increase penetration of foreign markets
	<p>PAIN RELIEVERS</p> <ul style="list-style-type: none"> ✔ Low cost for the country ✔ Specificity of the requirements ✔ International recognition 	<p>PAINS</p> <ul style="list-style-type: none"> ✔ High certification costs ✔ High level of bureaucracy ✔ Standardization process, no assessment of the quality of the service 	

Source: Creara Analysis

8 CHPQA CERTIFICATE

8.1 Description


The Combined Heat and Power Quality Assurance programme (CHPQA) is a government initiative providing a practical, determinate method for assessing the efficiency of all types and sizes of Combined Heat & Power (CHP) schemes throughout the UK. CHP is the simultaneous generation of heat and power in a single process, and provides one of the most cost-effective approaches for making carbon savings. The CHPQA aims to ensure that any CHP plant (fully or partially qualified) that claims fiscal benefits is highly efficient, making tangible primary energy savings, in line with the requirements of the EU Directive 2012/27/EU on Energy Efficiency, (the EED). In doing so it aims to provide clear signals to users and suppliers of CHP, to develop new CHP Schemes and upgrade or improve existing schemes to be more efficient.

CHPQA is managed by a private company that acts as an administrator which acquires the right through a tender. Contract terms for the administrator are 36 months with an optional extension of 24 months.

8.2 Phases of quality assurance scheme procurement

8.2.1 Quality assessment criteria and compliance

A Scheme that qualifies wholly as a Good Quality CHP is one for which, based on annual performance, the power efficiency equals or exceeds 20%, and where the Quality Index (QI) equals or exceeds the QI Threshold, which is usually 100.

-  **Quality Index:** the Quality Index for CHP Schemes is defined as a function of their power efficiency (the electrical power output as a proportion of fuel input energy) and heat efficiency (the useful heat output as a proportion of fuel input energy).

$$QI = (X \times \eta_{power}) + (Y \times \eta_{heat})$$

- Where:

Power Efficiency (η_{power}) = $CHPTPO/CHPTFI$


Heat Efficiency (η_{heat}) = $CHPQHO/CHPTFI$

X and Y are parameters which depend on the type of fuel used and size of scheme (in MWe)

CHPTPO = CHP Total Power Output

CHPTFI = CHP Total Fuel Input




CHPQHO = CHP Qualifying Heat Output (registered amount of useful heat supplied annually from a CHP Scheme (MWhth). It is heat output that is demonstrably utilized to displace heat that would otherwise be supplied from other sources).

-  **Power efficiency:** the second criteria used to determine the extent to which a CHP qualifies as Good Quality is an achieved power efficiency equal or higher than 20%.

Schemes meeting these two conditions are eligible for maximum benefits available on fuel input and power output. Otherwise, the benefits on fuel input and/or power output are scaled back according to the achieved power efficiency and/or QI respectively.

8.2.2 Evaluation of compliance with standards and execution

To acquire a CHPQA Certificate, a series of steps must be followed:

-  The first step for all schemes wishing to apply for CHPQA certification is to register for the programme by completing Form F1⁸.
-  Following the receipt of Form F1, the CHPQA administrator (private company in charge of CHPQA management) will send a unique reference number and a user name and password required to access the online electronic submission system.
-  The applicant must then consider the type of scheme they are submitting data for (simple or complex). Depending on the route, different Forms will have to be filled and sent in.

⁸ Basic administration form used to record the address of a proposed or existing scheme and the contact details of the Responsible Person (RP)

- ✔ If the results are positive once all the accreditation is handed in, the applicants will receive the CHPQA validation and certification.
- ✔ This will then be sent to the relevant authorities that will apply the corresponding fiscal benefits.

8.2.3 CHPQA Certification and benefits

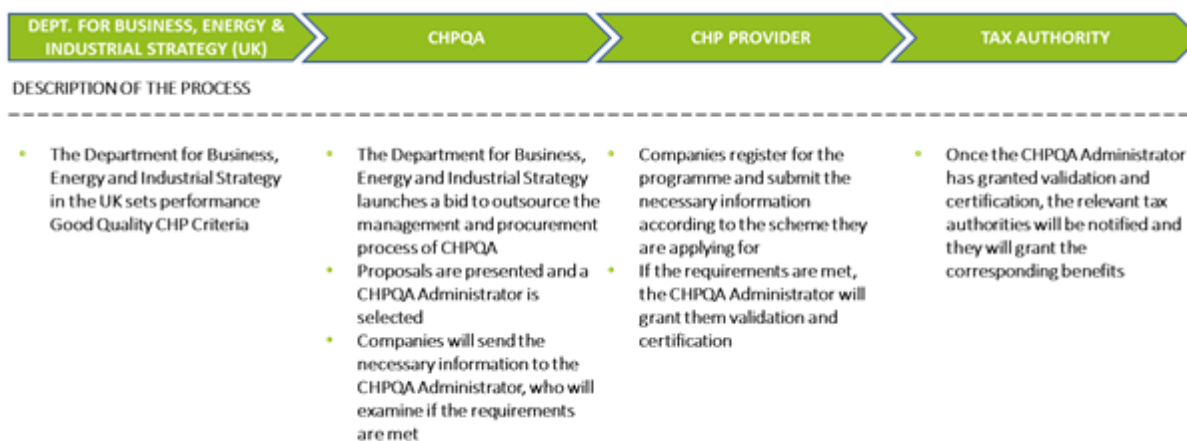
CHPQA certification grants access, depending on specific circumstances, to several benefits:

- ✔ **Climate Change Levy (CCL) exemption:** CCL for gas is £0.00198/kWh
- ✔ **Carbon Price Support (CPS) tax exemption:** reduction in ‘top up’ tax used to mitigate against EU ETS credit prices dropping for electricity generating companies
- ✔ **Enhanced Capital Allowances (ECAs):** set 100% capital cost against taxable profits in the same accounting period
- ✔ **Access to preferential business rates**
- ✔ **Renewables Obligation Certificates (ROCs):** required by electricity generating companies to meet minimum requirement for producing electricity from renewable sources (scheme closed 2017)
- ✔ **Contracts for Difference (CFD):** CHP specific CfDs for biomass and waste fuelled CHP. This scheme guarantees electricity market prices for electricity generators using low carbon technologies.
- ✔ **Renewable Heat Incentive (RHI):** specific tariff for biomass fuelled Good Quality CHP. £0.0429/kWh

CHPQA Certificates cover a calendar year and expire at the end of December. This certificate is a quality assurance scheme for individual schemes, not providers. Under this business model, it is not the provider but the scheme itself that gets the quality label, meaning that every EE service is standardized and comparable to others.

8.2.4 Standard project delivery model

Figure 13 - Standard project delivery model for CHPQA



Source: Creara Analysis

8.3 Main Features

The main features of CHPQA are found in Table 14:

Table 14- Main features for CHPQA

	CHPQA
Principal action	Certificate
Country	United Kingdom
Type	Voluntary
Target user	CHP providers
Authority	UK's Department for Business, Energy & Industrial Strategy
Phases	<ol style="list-style-type: none"> 1. Establishment of requirements 2. Compliance with requirements 3. Verification of compliance 4. Provision of Certificate 5. Access to specific benefits
Stakeholders	<ol style="list-style-type: none"> 1. EES provider. 2. Governmental agency. 3. CHPQA Administrator. 4. Tax authority. 5. Energy market regulators.
Support measures/ dissemination	Direct contact, presentations, website.
Year of implementation	2000
Costs	No costs associated with the certificate

Source: Creara Analysis

8.4 Key factors

8.4.1 Incomes

Figure 14 - CHPQA: Incomes

INCOMES				
FROM WHERE?	WHEN?	FROM WHOM?	METHOD	TYPE
Application fees	Before	Client	Percentage of the total cost of the project	Payment per quality criteria
Subscription/membership fees	During	ESCOs		Payment for all quality criteria at once
Evaluation costs	After	Government	Set amount	Payment installments per quality assurance phases
Implementation costs		Association		
Certification costs				Payment in full of all phases
Usage costs				
Bidding costs				
Auditing costs				

Source: Creara Analysis

8.4.2 Expenses

Figure 15: CHPQA: Expenses

EXPENSES
Marketing
Software
Staff (salaries)
Events
Equipment
Market research
Administrative expenses
Overhead

Source: Creara Analysis

8.5 Canvas Analysis

A deeper analysis of CHPQA’s Certificate business model is presented in Table 15:

8.5.1 BM Canvas Analysis

Table 15 - CHPQA canvas analysis

<p>KEY PARTNERS</p> <ul style="list-style-type: none"> • Department for Business, Energy and Industrial Strategy: authority of CHPQA • CHPQA Administrator: private company selected for the verification process through a tender • Tax authority: the institution that provides the tax benefits to those companies that qualify • Energy suppliers: receive tax relief certificates • CHP provider 	<p>KEY ACTIVITIES</p> <ul style="list-style-type: none"> • Ensures that the associated fiscal benefits are in line with environmental performance • Monitor, assess and improve the quality of UK Combined Heat and Power • Assess all types and sizes of CHP schemes throughout the UK • Verify and issue certificates that accredit quality • Raise awareness • Monitoring of CHP in the country. 	<p>VALUE PROPOSITION</p> <ul style="list-style-type: none"> • Tax incentives for quality CHP services • Environmental improvement • Projects are more financially viable (reduction in taxes) • Government endorsement. • No costs associated to the certificate 	<p>CUSTOMER RELATIONSHIP</p> <ul style="list-style-type: none"> • Contact via web interface • Telephone support • Self-service in terms of bureaucracy 	<p>CUSTOMER SEGMENT</p> <ul style="list-style-type: none"> • ESCOs offering CHP • CHP manufacturers • Electricity generating companies • Government • Building owners interested in the implementation of CHP • Contenders to become CHPQA administrators
	<p>KEY RESOURCES</p> <ul style="list-style-type: none"> • Brand and patent • Human capital (technicians, sales staff, etc.) • Online registration forms. 		<p>CHANNELS</p> <ul style="list-style-type: none"> • Awareness: website, national exposure, direct contact. • Evaluation: CHPQA administrator, via web interface • After sales: website, presentations. 	
<p>COST STRUCTURE</p> <ul style="list-style-type: none"> • Fixed costs: employees’ salary (sales staff, software developers and other human resources), servers, marketing. • No costs associated to the certificate 		<p>REVENUE STREAMS</p> <ul style="list-style-type: none"> • CHPQA Administrator: 1-million-pound government funding per annum 		

Source: Creara Analysis

8.5.2 Value proposition

Table 16- Value proposition for CHPQA

PROVIDER OF THE CERTIFIED EE SERVICE		CLIENT OF THE CERTIFIED EE SERVICE	
<p>SERVICES</p> <ul style="list-style-type: none"> ✔ Solutions have common national standards ✔ Aids in creation of services that are guaranteed to ascribe to certain environmental performance parameters ✔ Quality products are created because of aim to access tax benefits 	<p>GAIN CREATORS</p> <ul style="list-style-type: none"> ✔ Improve image by establishing environmentally-friendly criteria. ✔ May offer lower prices for their services due to tax benefits ✔ Promotes energy efficiency 	<p>GAINS</p> <ul style="list-style-type: none"> ✔ Implementation of quality assured measures. ✔ Decrease in greenhouse gas emission. ✔ Increase in savings due to higher energy efficiency and tax benefits. 	<p>CUSTOMER JOB(S)</p> <ul style="list-style-type: none"> ✔ Implement CHP measures to increase energy efficiency ✔ Increase business success ✔ Obtain financial benefits ✔ Reduce operating costs
	<p>PAIN RELIEVERS</p> <ul style="list-style-type: none"> ✔ Savings increase once the process is finished ✔ Bureaucracy is established and determined ✔ Government-supported (high trust) 	<p>PAINS</p> <ul style="list-style-type: none"> ✔ High certification costs ✔ High level of bureaucracy ✔ Limited to one type of technology 	

Source: Creara Analysis

9 PASSIVE HOUSE

9.1 Description






The Passive House Institute (PHI) is an independent research institute that has played an especially crucial role in the development of the Passive House concept as the only internationally recognized, performance-based energy standard in construction.

Passive house is a rigorous, voluntary standard for energy efficiency in a building, reducing its ecological footprint. It results in ultra-low energy buildings that require little energy for space heating or cooling. The standard is not confined to residential properties; office buildings, schools, kindergartens and supermarkets have also been constructed in accordance to the Passive House standard. Although it is mostly applied to new buildings, it can also be used for refurbishments in that case the certificate issued is called EnerPHit.

9.2 Phases of quality assurance scheme procurement

9.2.1 Quality assessment criteria and compliance

For a building to be considered a Passive House, it must meet the following criteria:

-  **Space heating demand:** cannot exceed 15kWh annually or 10W at peak demand, per square meter of usable living space.
-  **Space cooling demand:** roughly matches the heat demand with an additional, climate-dependent allowance for dehumidification.
-  **Primary energy demand:** cannot exceed 120kWh annually for all domestic applications (heating, cooling, hot water and domestic electricity) per square meter of usable living space.
-  **Airtightness:** maximum of 0.6 air changes per hour at 50 Pascals pressure (as verified with an onsite pressure test in both pressurized and depressurized state).
-  **Thermal comfort:** it must be met for all living areas year-round with not more than 10% of the hours in any given year over 25°C.

9.2.2 Evaluation of compliance with standards and execution

To obtain the certification it is necessary to fulfill the certification criteria and to meet the criteria of calculation methodology described in the PHPP (Passive House Planning Package)⁹ program and in its manual.

The informal request to carry out a certification is made directly with the certifying body accredited by the Passive House Institute. There are two possibilities in this regard: the client may contact a non-accredited designer who will design the building according to Passive House standards using the PHPP program, and will then send the documentation to an accredited body or; the client may directly contact a Passive House Certified Designer who will act both as the designer of the building as well as the accredited certifying body. If the client decides to contact a non-certified designer, the documentation required must be provided in full to the certifier and the documents for certification must be reviewed at least once. Depending on each case, it may be necessary to perform more controls.

At the end of this phase of the evaluation process, the client is given the calculation results corrected with the proposed improvements, if applicable. Supervision during the construction phase is not subject to certification. A quality control of the work execution by the certifying body is particularly useful if the construction management has no previous experience with the construction of buildings that follow the Passive House Standard or the EnerPHit Standard for renovations.

If the technical accuracy of the documentation required for the analyzed building is confirmed and the criteria established are met, the corresponding applicable certificate will be issued.

9.2.3 Granting of a Passive House Certificate

The delivery of the certificate corroborates that the documentation provided is correct and complies with the technical requirements of the standards defined at the time of certification. The evaluation does not contemplate either the monitoring of the construction of the building or the control of user

⁹ More information about the Package can be found through this link:
http://passivehouse.com/04_phpp/04_phpp.htm#PH9

behavior. The guarantee of the quality of the design falls on the designer and the guarantee of the quality of the execution, on the director of the work.

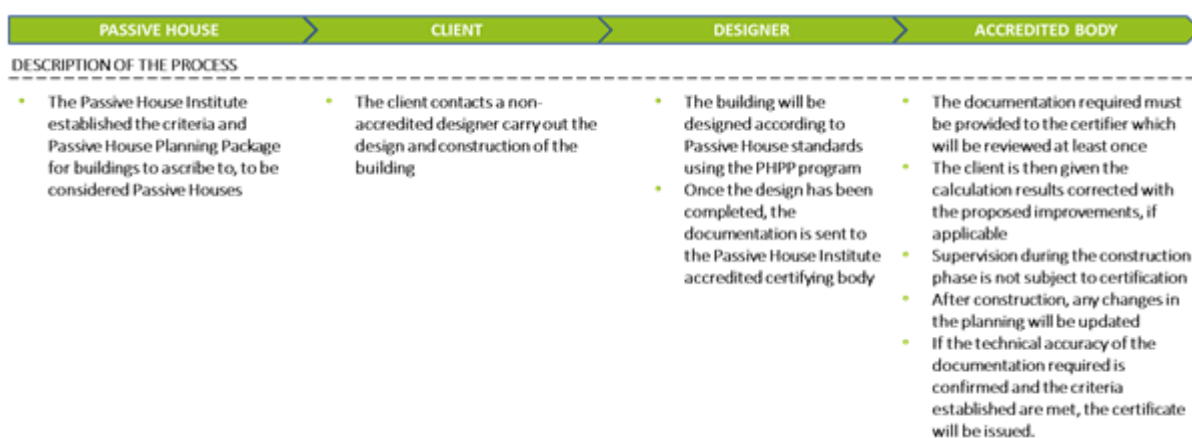
Passive House stamps may only be used in the associated certified building. The certificate is valid for the execution of the construction and the use of the building should be conducted as documented in the brochure that accompanies the certificate.

Under this business model, the quality of the service itself is not assessed rather, the energy performance of a building is certified.

9.2.4 Standard project delivery models

9.2.4.1 Delivery model 1

Figure 16 - Standard project delivery model 1 for Passive House



Source: Creara Analysis

9.2.4.2 Delivery model 2

Figure 17 - Standard project delivery model 2 for Passive House



Source: Creara Analysis

9.3 Main Features

The main features of Passive House are found in Table 17:

Table 17 - Main features for Passive house

	Passive House
Principal action	Certification
Country	Implemented internationally, originally from Germany
Type	Voluntary
Target user	All users (buildings)
Authority	Passive House Institute
Phases	<ol style="list-style-type: none"> 1. Establishment of requirements 2. Documents and technical data are submitted before the start of construction work 3. Information about any necessary corrections 4. After the construction, any changes to the design will be updated 5. Documents related to construction are checked verifying the compliance of standards 6. Provision of the certificate
Stakeholders	<ol style="list-style-type: none"> 1. Passive House Institute 2. Passive House Association 3. Certified Passive House Designers 4. PHI accredited examination bodies 5. Financial Institutions 6. Clients 7. Governments 8. ESCOs
Support measures/ dissemination	Direct contact, presentations, website, success cases, international recognition.
Year of (expected) implementation	1988
Costs	Each Certifier calculates their offer. In addition, a fee is included in this calculation every Certifier pays to the Passive House Institute

Source: Creara Analysis

9.4 Key factors

9.4.1 Incomes

Figure 18 - Passive House: Incomes

INCOMES				
FROM WHERE?	WHEN?	FROM WHOM?	METHOD	TYPE
Application fees	Before	Client	Percentage of the total cost of the project	Payment per quality criteria
Subscription/membership fees	During	ESCOs		Payment for all quality criteria at once
Evaluation fees	After	Government	Set amount	Payment installments per quality assurance phases
Implementation fees		Association		
Certification fees				Payment in full of all phases
Usage fees				
Bidding fees				
Auditing fees				

Source: Creara Analysis

9.4.2 Expenses

Figure 19 - Passive House: Expenses

EXPENSES
Marketing
Software
Staff (salaries)
Events
Equipment
Market research
Administrative expenses
Overhead

Source: Creara Analysis

9.5 Canvas Analysis

A deeper analysis of Passive House’s Certificate business model is presented in Table 18:

9.5.1 BM Canvas Analysis

Table 18 - Passive House canvas analysis

<p>KEY PARTNERS</p> <ul style="list-style-type: none"> • Passive House Institute: the authority in charge of the Passive House Certificate • Passive House Association: the entity national members ascribe to carry out Passive House activities • Certified Passive House Designers • Passive House Institute accredited examination bodies: conduct the examinations necessary to make sure standards are met • Building owners or constructors as those that receive Passive House services • Clients: owners of buildings aspiring to obtain Passive House certificate 	<p>KEY ACTIVITIES</p> <ul style="list-style-type: none"> • Construction or renovation of ultra-low energy buildings that require little energy for space heating or cooling. • Make efficient use of the sun, internal heat sources and heat recovery, rendering conventional heating systems unnecessary 	<p>VALUE PROPOSITION</p> <ul style="list-style-type: none"> • Space heating and cooling- related energy savings of up to 90% • Offers high level of comfort • Environmental improvement • Government endorsement and funding in some countries¹⁰. • International recognition 	<p>CUSTOMER RELATIONSHIP</p> <ul style="list-style-type: none"> • The relationship is usually established with the national representative of the institute in the country. • If there is no national representation, the client may directly contact the institute 	<p>CUSTOMER SEGMENT</p> <ul style="list-style-type: none"> • Building owners • Building constructors • ESCOs • Passive House Certified Designers • Passive House Institute accredited examination bodies
<p>COST STRUCTURE</p> <ul style="list-style-type: none"> • Fixed costs: employees’ salary (sales staff, software developers and other human resources), servers, marketing • Variable costs: energy efficiency implementation, sales costs, costs associated to the certificate 		<p>REVENUE STREAMS</p> <ul style="list-style-type: none"> • Each Certifier calculates their offer • A fee is included in the calculation which Certifier pays to the Passive House Institute • Sale of PHPP program • Income from certifying people as designers or consultants 		

Source: Creara Analysis

¹⁰ More information on the different methods of funding can be found through this link: https://www.passivehouse-international.org/index.php?page_id=501

9.5.2 Value proposition

Table 19 - Value proposition for Passive House

PROVIDER OF THE CERTIFIED EE SERVICE		CLIENT OF THE CERTIFIED EE SERVICE	
<ul style="list-style-type: none"> ✔ Creates services that ensure environmentally-friendly measures are implemented ✔ Creates energy efficiency services ✔ Creates incentives for governments to offer monetary aid 	<p>GAIN CREATORS</p> <ul style="list-style-type: none"> ✔ Promotes energy efficiency ✔ Implements energy saving measures 	<p>GAINS</p> <ul style="list-style-type: none"> ✔ Implementation of quality assured measures ✔ Increase in savings due to less funds spent in heating and cooling of buildings 	<p>CUSTOMER JOB(S)</p> <ul style="list-style-type: none"> ✔ Implement Passive House measures to improve energy efficiency ✔ Obtain financial benefits ✔ Reduce operating costs ✔ Increase energy efficiency in their facilities/residences
	<p>PAIN RELIEVERS</p> <ul style="list-style-type: none"> ✔ Savings increase once the building/update is finished ✔ Bureaucracy is established and determined ✔ In some cases, government funding exists ✔ If there is a lack of evaluators, the Institute can be contacted 	<p>PAINS</p> <ul style="list-style-type: none"> ✔ High implementation costs ✔ High level of bureaucracy ✔ Lack of local evaluators 	

Source: Creara Analysis

10 ENERGY PERFORMANCE CONTRACTING: STANDARD CONTRACT

10.1 Description

The Standard Contract commissioned by the Austrian Federal Ministry of Science, Research and Economy to the Austrian Society for Environment and Technology, was created with the aim of facilitating the comparison of the different proposals to bids carried out by the Public Administration in the scope of energy efficiency. The specification of a draft contract is recommended because it ensures better transparency and traceability of bidding decisions since all competitors assume the same contracting conditions.

It must, however, be mentioned that it is difficult to control the quality in the application of this system and its effective use in the private sector.

10.2 Phases of quality assurance scheme procurement




10.2.1 Scope of the contract

The first step to be taken by the contractor is the examination of whether potential savings in terms of energy consumption and energy costs could be achieved through technical and other measures, to improve energy management as well as the building and equipment subject of the contract. The contractor must also determine, in the framework of the desktop analysis, the necessary investments and the project planning costs necessary to implement the measures.



The reduction of the energy costs of the client takes place through a guaranteed promise, which the contractor undertakes. The reduction of client's energy costs can be done through means of energy saving or renovation measures during the contract period and to the guaranteed extent. Because of this, the full risk for economic success, achieved through taking appropriate measures, falls on the contractor. Achieving the savings is both in the interest of the contractor and the client. The client therefore participates in the achievement of the savings targets within the scope of his possibilities and contractual obligations.

10.2.2 Contractual objectives

The following contracting objectives are essential to the client:

-  Sustainable reduction of energy costs and discharge of the budget
-  Reduction of energy consumption or CO₂ emissions.
-  Increase of user comfort.

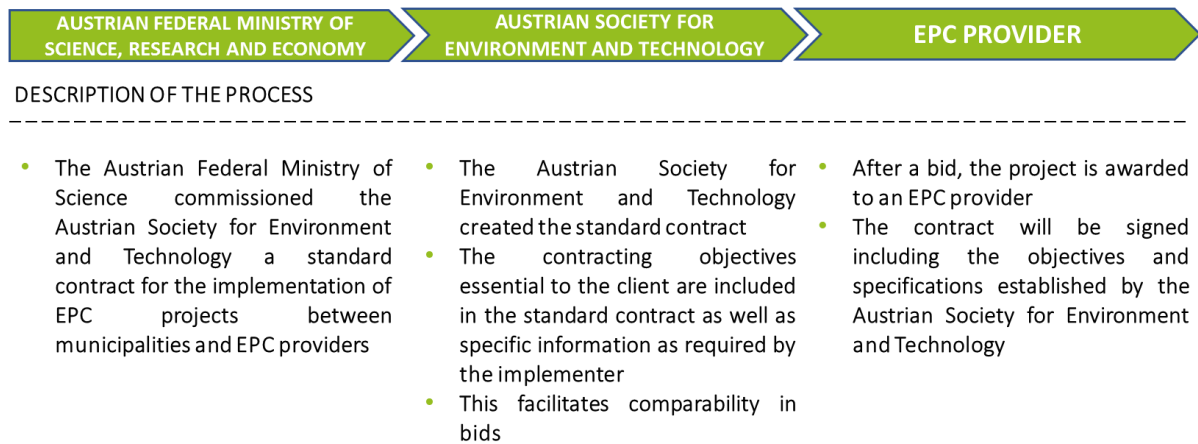
The following information must be included in all contracts, adjusted to the specific characteristics of each of them:

-  The clear definition of the interfaces (division and regulation of tasks and responsibilities, rights and obligations) relating to the planning, financing, management of the funding and the implementation of the measures as well as the operation of the facilities over a term between the client and the contractor
-  All financial issues, from financing to compensation, to optimizing contracts on tax matters and related issues.

The model contract serves as a basis for the execution of EPCs but should always be adapted to the specific characteristics of each project.

10.2.3 Standard project delivery model

Table 20 - Standard project delivery model for standard contract



Source: Creara Analysis

10.3 Main Features

The main features of the EPC Standard Contract are found in Table 21:

Table 21 - Main features for standard contract

Energy Performance Contracting: Standard Contract	
Principal action	Standardization through provision of a model contract
Country	Austria
Type	Voluntary
Target user	EPC providers
Authority	Federal Ministry of Science, Research and Economy
Phases	<ol style="list-style-type: none"> 1. Examination of possible energy efficiency measures to save in energy 2. Determine the necessary investments and the project planning costs 3. Include in the contract a clear definition of the interfaces and the guaranteed savings 4. Execution of the project, after bidding process, under guidelines established in the contract and achieving the agreed savings
Stakeholders	<ol style="list-style-type: none"> 1. Federal Ministry of Science, Research and Economy 2. Austrian Society for Environment and Technology 3. EPC provider 4. Client (usually municipalities)
Support measures/ dissemination	Contract model required to execute projects between municipalities and private companies.
Year of (expected) implementation	2012
Costs	Costs of bidding processes

Source: Creara Analysis

10.4 Key factors

10.4.1 Incomes

Table 22 - Standard contract: Incomes

INCOMES				
FROM WHERE?	WHEN?	FROM WHOM?	METHOD	TYPE
Application fees	Before	Client	Percentage of the total cost of the project	Payment per quality criteria
Subscription/membership fees	During	ESCOs		Payment for all quality criteria at once
Evaluation fees	After	Government	Set amount	Payment installments per quality assurance phases
Implementation fees		Association		
Certification fees				Payment in full of all phases
Usage fees				
Bidding fees				
Auditing fees				

Source: Creara Analysis

10.4.2 Expenses

Table 23 - Standard contract: Expenses

EXPENSES
Marketing
Software
Staff (salaries)
Events
Equipment
Market research
Administrative expenses
Overhead

Source: Creara Analysis

10.5 Canvas Analysis

A deeper analysis of the EPC Standard Contract business model is presented in Table 24:

10.5.1 BM Canvas Analysis

Table 24 - Standard contracts canvas analysis

<p>KEY PARTNERS</p> <ul style="list-style-type: none"> • The Federal Ministry of Science, Research and Economy: the entity commissioning the creation of a model contract • The Austrian Society for Environment and Technology: the entity in charge of creating the Standard Contract • EPC providers: the contractor and energy efficiency measures implementer • Clients: usually municipalities or other public institutions that launched bidding process and receives the energy efficiency measures 	<p>KEY ACTIVITIES</p> <ul style="list-style-type: none"> • Establishment of a Standard Contract which includes key features of EPCs such as savings guaranteed and the appropriate measures to achieve them. 	<p>VALUE PROPOSITION</p> <ul style="list-style-type: none"> • Transparency in bidding processes • Comparability of proposals • Sustainable reduction of energy costs and discharge of the budget • Reduction of energy consumption and/or CO₂ emissions • Increase in user comfort • No costs associated to the contract • Government support 	<p>CUSTOMER RELATIONSHIP</p> <ul style="list-style-type: none"> • The Ministry commissioned the contract • Contact is made by making proposals for bids 	<p>CUSTOMER SEGMENT</p> <ul style="list-style-type: none"> • Municipalities and other government institutions • EPC providers
<p>KEY RESOURCES</p> <ul style="list-style-type: none"> • Brand and patent • Human capital (technicians, sales staff, etc.) • Standard Contract 	<p>CHANNELS</p> <ul style="list-style-type: none"> • Awareness: website, municipal exposure • Evaluation, purchase and delivery: bidding process • After sales: municipal exposure 			
<p>COST STRUCTURE</p> <ul style="list-style-type: none"> • Fixed costs: employees' salary (sales staff, developers and other human resources), servers, etc. 		<p>REVENUE STREAMS</p>		

Source: Creara Analysis

10.5.2 Value proposition

Table 25 - Value proposition for standard contract

PROVIDER OF THE CERTIFIED EE SERVICE		CLIENT OF THE CERTIFIED EE SERVICE	
<p>SERVICES</p> <ul style="list-style-type: none"> ✔ Clear definition of contract characteristics ✔ Initial audit of energy-consuming unit and identification of savings ✔ Solution development according to guidelines established in the Standard Contract and implementation of accorded technical measures ✔ Maintenance and monitoring 	<p>GAIN CREATORS</p> <ul style="list-style-type: none"> ✔ Improve image by offering a quality service with pre-established guidelines ✔ Help reduce energy costs ✔ Reduces impact on environment 	<p>GAINS</p> <ul style="list-style-type: none"> ✔ Savings are guaranteed ✔ Improve energy service quality ✔ Reduce energy and CO₂ consumption ✔ Minimize financial and technical risks: <ul style="list-style-type: none"> • The provider oversees the financial aspects of the project. ✔ Reduce costs in the public administration 	<p>CUSTOMER JOB(S)</p> <ul style="list-style-type: none"> ✔ Reduce costs while maintaining operations equal ✔ Improve energy efficiency in Public Administration ✔ Improve image by being more environment friendly
	<p>PAIN RELIEVERS</p> <ul style="list-style-type: none"> ✔ Minimize financial and technical risks by following using Standard Contract ✔ Most of the financial obligations and timeliness are met by the provider 	<p>PAINS</p> <ul style="list-style-type: none"> ✔ Need for resources from Public Administration ✔ Lack of time and resources for other activities ✔ Upfront investment costs 	

Source: Creara Analysis

11 ANESE CERTIFICATE

11.1 Description

The Spanish National Association of Energy Services Companies (ANESE) has launched the first certified classification of energy services companies (ESCOs) in the country.

This classification responds, on the one hand, to the lack of regulations and to the absence of an official registry; and on the other, it has the purpose of providing the client with an understanding of the ESCO model.

This certification is aimed at companies that offer energy services following the savings guarantee model and want accreditation to demonstrate their experience, training, technological possibilities and technical potential. Through this certificate they can distinguish themselves through an accreditation that assures their professionalism.












ANESE offers two types of certificates: one for companies that have not yet implemented any projects following the ESCO model, but are prepared to do so, called “ESE” and another certificate for companies that can prove (with evidence) that they have worked following the ESCO model. In this case, the certificate issued is called “ESE PLUS”.

ANESE uses an independent certifier; TÜV Rheinland, to oversee the audits to certify that the ESCOs applying for certification comply with the requirements. A technical committee of ANESE review the auditor's report and approve the classification.

11.2 Phases of quality assurance scheme procurement







11.2.1 Quality assessment criteria and compliance

For ESCOs to be certified with the ANESE label, the following criteria must be met, which follow those established by the European Energy Efficiency Directive:

-  Provide energy services or improve energy efficiency
-  Accept some degree of economic risk
-  The payment of the services provided must be based (partially or totally) on obtaining improvements in energy efficiency and on compliance with the other agreed performance requirements
-  Include in its corporate purpose the activities inherent to the provision of energy services or improving energy efficiency
-  Ensure adequate technical qualification of the professionals overseeing the service (university degree or professional qualification)
-  Possess the appropriate technical means to provide energy services
-  It is obliged to demonstrate that it has an established protocol for measuring and verifying savings that ensures the levels of savings during the duration of the contract
-  Must be registered in the corresponding Social Security system and have a civil liability insurance
-  It must be registered in the official Registry of the Ministry of Industry, Energy and Tourism
-  Undergo an audit to demonstrate that it is qualified to carry out the EES savings guarantee model
-  Its activity must be differentiated according to the technology applied

11.2.2 Evaluation of compliance with standards and execution

The steps necessary to acquire the ANESE certificate are:

-  Contact ANESE to initiate the qualification process.
-  The candidate company will be put in contact with the person responsible for its classification in TÜV Rheinland.
-  The auditing company will send the ESCO a questionnaire to define the kind of classification to be done.
-  After receiving the questionnaire, TÜV Rheinland will send the offer to be classified which will include the specific details of the contract, exclusive services, prices, etc.
-  The auditing contract will be signed and a date will be decided.
-  Visit from the auditor.

11.2.3 Granting of an ANESE Certificate

When the auditing company has completed its task, the report and evaluation as well as the assessment done by the technical committee of the association will be sent to ANESE.

ANESE will then proceed to classify the company and consider if the requisites are met. If the result of the evaluation is not positive, the candidate company is given a resolution period for the solution of possible weaknesses or deficiencies. If ANESE considers that all the criteria are met, they will proceed to the delivery of the recognition and seal.

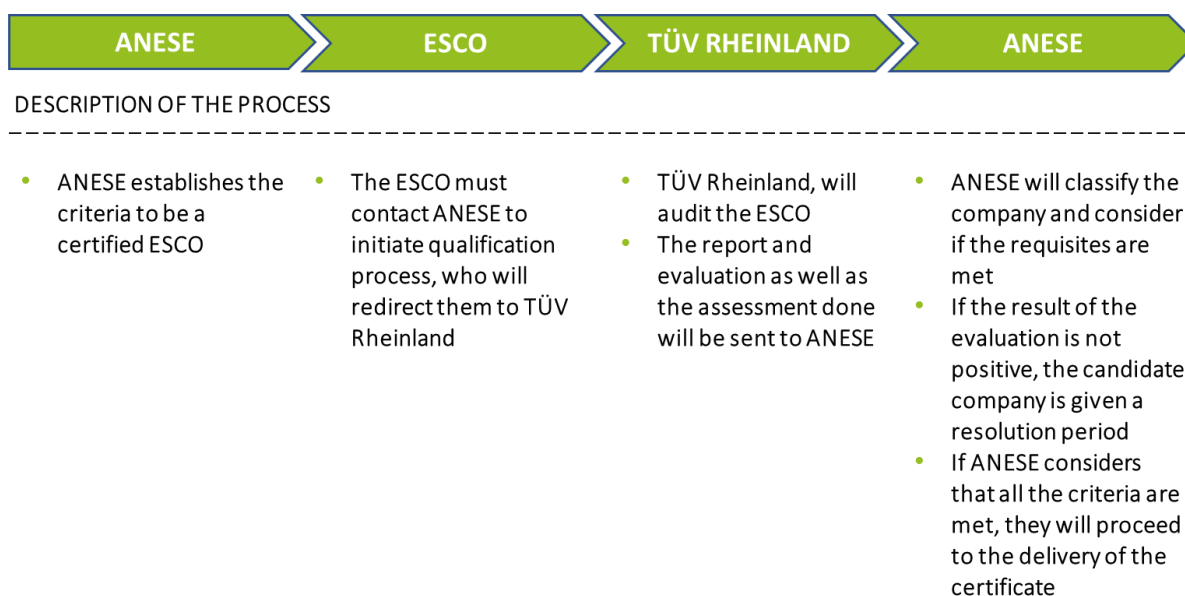
The validity of the granted classification will be of 2 years for the companies that have been granted the “ESE” certificate, after this period the classification will have to be validated. If the company wishes to move up from the ESE certificate to the ESE PLUS certificate, the ESCO can commence the amendments at any point.

For those classified as ESE PLUS, the validity will be 3 years. ESE PLUS companies can proceed to revalidate the certificate earlier than the 3 years established if they wish to add any specialisms to the arrangement.

At the request of ANESE, there may be modifications if there are major changes in the sector's approach. Under this business model the quality of the service is not certified but the providers themselves are.

11.2.4 Standard project delivery model

Table 26 - Standard project delivery model for ANESE label



Source: Creara Analysis

11.3 Main Features

The main features of ANESE'S certificate are found in Table 27:

Table 27 - Main features for ANESE certificate

	ANESE
Principal action	Certification
Country	Spain
Type	Voluntary
Target user	EES providers
Authority	ANESE; Association of Energy Efficiency Services Companies, by its Spanish acronym
Phases	<ol style="list-style-type: none"> 1. Establishment of requirements 2. Application form 3. Negotiation with TÜV Rheinland about the agreement and possible additional services 4. Sign of the agreement by TÜV Rheinland and the applicant 5. Verification of compliance with requirements 6. Remission of the report by TÜV Rheinland to ANESE 7. Assessment by ANESE 8. Admission and provision of the quality certification
Stakeholders	<ol style="list-style-type: none"> 1. ANESE 2. TÜV Rheinland 3. ESCOs 4. ESCO clients
Support measures/ dissemination	Direct contact, presentations, website, success cases, partners
Year of implementation	2015
Costs	Costs of certification

Source: Creara Analysis

11.4 Key factors

11.4.1 Incomes

Table 28 - ANESE certificate: Incomes

INCOMES				
FROM WHERE?	WHEN?	FROM WHOM?	METHOD	TYPE
Application fees	Before	Client	Percentage of the total cost of the project	Payment per quality criteria
Subscription/membership fees	During	ESCOs		Payment for all quality criteria at once
Evaluation fees	After	Government	Set amount	Payment installments per quality assurance phases
Implementation fees		Association		
Certification fees				Payment in full of all phases
Usage fees				
Bidding fees				
Auditing fees				

Source: Creara Analysis

11.4.2 Expenses

Table 29 - ANESE certificate: Expenses

EXPENSES
Marketing
Software
Staff (salaries)
Events
Equipment
Market research
Administrative expenses
Overhead

Source: Creara Analysis

11.5 Canvas Analysis

A deeper analysis of ANESE’s quality certificate business model is presented in Table 30:

11.5.1 BM Canvas Analysis

Table 30 - ANESE certificate canvas analysis

KEY PARTNERS <ul style="list-style-type: none"> • ANESE: the association that emits and evaluates the certificate • TÜV Rheinland: the associated third-party that audits companies • ESCOs (EPC providers): the receivers of the certificate 	KEY ACTIVITIES <ul style="list-style-type: none"> • Structuring the energy services market 	VALUE PROPOSITION <ul style="list-style-type: none"> • Providing the client with access and understanding of the ESCO model • Companies accredit their experience, training and technological and technical potential • Criteria follows EU Directive • ANESE’s position in the market 	CUSTOMER RELATIONSHIP <ul style="list-style-type: none"> • Companies interested in obtaining the certificate must contact ANESE who will redirect them to TÜV Rheinland to initiate the necessary procedures. 	CUSTOMER SEGMENT <ul style="list-style-type: none"> • ESCOs (EPC providers) • EES clients
	KEY RESOURCES <ul style="list-style-type: none"> • Brand and patent • Human capital (technicians, sales staff, etc.) 		CHANNELS <ul style="list-style-type: none"> • Awareness: website • Evaluation: third party- auditing company and ANESE • Purchase and delivery: ANESE • After sales: website, success cases. 	
COST STRUCTURE <ul style="list-style-type: none"> • Fixed costs: employees’ salary (sales staff, software developers and other human resources), servers, marketing 		REVENUE STREAMS <ul style="list-style-type: none"> • ESE Plus certification: 1,900 € • ESE certification: 1,600 € 		

Source: Creara Analysis

11.5.2 Value proposition

Table 31 - Value proposition for ANESE certificate

PROVIDER OF THE CERTIFIED EE SERVICE		CLIENT OF THE CERTIFIED EE SERVICE	
<p>SERVICES</p> <ul style="list-style-type: none"> ✔ The project is developed under the European Directive for Energy Efficiency ✔ ESCOs' projects will be audited, guaranteeing quality requirements ✔ Solution development according to European EED standards and implementation of measures ✔ ESCOs are certified by ANESE 	<p>GAIN CREATORS</p> <ul style="list-style-type: none"> ✔ Improve image by offering a quality service ascribing to European directive ✔ Help reduce energy costs ✔ Reduces impact on environment 	<p>GAINS</p> <ul style="list-style-type: none"> ✔ Savings are guaranteed ✔ Improve energy service quality ✔ Reduce energy and CO₂ consumption ✔ Minimize financial and technical risks ✔ Increase profitability of the business 	<p>CUSTOMER JOB(S)</p> <ul style="list-style-type: none"> ✔ Improve energy efficiency ✔ In the case of businesses, increase profitability (decrease in costs by maintaining operational costs). ✔ Improve image by being environmentally friendly
	<p>PAIN RELIEVERS</p> <ul style="list-style-type: none"> ✔ Minimize financial and technical risks by following European criteria. ✔ Most of the financial obligations and timeliness are met by the provider. 	<p>PAINS</p> <ul style="list-style-type: none"> ✔ Need for resources for non-core activities ✔ Lack of time and resources ✔ Upfront investment costs 	

Source: Creara Analysis

12 KLIMAAKTIV BUILDING STANDARD

12.1 Description

Klimaaktiv is the climate protection initiative of the Austrian Federal Ministry for Sustainability and Tourism (BMNT) and an instrument for energy transition. The focus is on four theme clusters: building and renovation, energy saving, renewable energy and mobility, which represent the most important starting points for energy transition. Municipalities, households and companies are supported by klimaaktiv in their climate protection activities. The Austrian Energy Agency is operationally responsible for implementing the programs and projects.

The klimaaktiv initiative was founded in 2004 as an innovative governance tool that integrates good ideas, strength and commitment in the federal states, municipalities, companies and NGOs with the help of an integrative approach, and strengthens them at federal level. Transparent standards are formulated, advisory and qualification offensives are initiated, quality assurance measures are implemented by multipliers, and network actors from industry, administrations, researchers, but also citizens and interest groups.






12.2 Phases of quality assurance scheme procurement

12.2.1 Quality assessment criteria and compliance

One of the actions carried out by the Federal Ministry for Sustainability and Tourism in the scope of klimaaktiv is the establishment of the klimaaktiv building standard, which serves as the guiding principle for environmental and energy efficient building design throughout Austria. It follows a “self-declaration with plausibility check” outline through which a company voluntarily ascribes to the klimaaktiv standards which will be later evaluated by klimaaktiv’s advisors.

In addition to energy efficiency, the klimaaktiv building standard assesses and evaluates the quality of the building and construction as well as the central aspects of comfort and indoor air quality. The klimaaktiv building standard provides concrete assistance to real estate developers, planners, master builders, housing developers and housing promotion agencies in the federal states, as well as for anyone who builds or renovates their place of residence.

The most important criteria for ensuring the building quality according to klimaaktiv are summarized as follows:

-  Quality of the infrastructure
-  High energy efficiency
-  Use of renewable energy
-  Use of ecological building materials
-  Thermal comfort

12.2.2 Evaluation of compliance with standards and execution

The quality of the construction is ensured by measurements and verification. The basic criteria are basically applicable across all building categories, but may be underlain with different requirement levels. The requirement levels are defined by limit values, compliance with which is a prerequisite for declaring a building as a klimaaktiv building. The requirement levels are set so that not only environmental and energy efficient top buildings, but a broader segment of buildings can meet basic requirements.

Compliance with the standard should be kept as cost-efficient and practicable as possible, therefore the criteria of energy efficiency and renewable energy are to be accorded with the standardized calculation methods and methods of the building codes of the Austrian federal states based on the OIB-Guideline 6 which is also in accordance with the EU Buildings Directive¹¹.

12.2.3 Concession of klimaaktiv building standard

The klimaaktiv initiative does not act as a certifying body, however the certifications provide a basis for klimaaktiv competence partnerships.

As mentioned earlier in the report, the klimaaktiv building standard is a self-declaration with plausibility check, meaning companies ascribe to it and compliance will be later checked by klimaaktiv advisors.

¹¹ Information on the EU Directive on Energy Performance of Buildings can be found through this link:
http://eur-lex.europa.eu/legal-content/EN/ALL/;ELX_SESSIONID=FZMjThLLzfxmmMCQGp2Y1s2d3Tjwtd8QS3pgdkhXZbwqGwlgY9KN!2064651424?uri=CELEX:32010L0031

Under this business model, it is not the provider but the service itself that gets the quality label, meaning that every EE service is standardized and comparable to others.

12.2.4 Standard project delivery model

Table 32 - Standard project delivery model for klimaaktiv



DESCRIPTION OF THE PROCESS

- klimaaktiv sets the quality criteria to be implemented in projects that carry their standard
- Property developers, planners and promoters can declare their building, whether a new build or renovation, to the klimaaktiv quality standard online, free of charge
- An external consultant will assess if the criteria have been met and refer the documentation to the Initiative
- Independently of the applicant, the Initiative checks the plausibility of the building's quality and of the documentation attached.
 - The building is awarded the Initiative's seal of approval only if the results of the check are positive.

Source: Creara Analysis

12.3 Main Features

The main features of the klimaaktiv building standard label are found in Table 33:

Table 33 - Main features for klimaaktiv Building Standard

	Klimaaktiv Building Standard
Principal action	Standardization
Country	Austria
Type	Voluntary
Target user	All users
Authority	klimaaktiv, of the Austrian Federal Ministry for Sustainability and Tourism
Phases	<ol style="list-style-type: none"> 1. Establishment of requirements (standards) 2. The EPC provider will self-impose a quality standard 3. There is the plausibility of checking the quality standard by accredited bodies
Stakeholders	<ol style="list-style-type: none"> 1. Ministry for Sustainability and Tourism 2. klimaaktiv consortium commissioned by the Ministry in regular period 3. Consultants to certify compliance 4. Stakeholders in construction 5. Clients
Support measures/ dissemination	Direct contact, website, national repercussion since it is a national measure.
Year of (expected) implementation	2006
Costs	Auditing costs

Source: Creara Analysis

12.4 Key factors

12.4.1 Incomes

Table 34 - klimaaktiv: Incomes

INCOMES				
FROM WHERE?	WHEN?	FROM WHOM?	METHOD	TYPE
Application fees	Before	Client	Percentage of the total cost of the project	Payment per quality criteria
Subscription/membership fees	During	ESCOs		Payment for all quality criteria at once
Evaluation fees	After	Government	Set amount	Payment installments per quality assurance phases
Implementation fees		Association		
Certification fees				Payment in full of all phases
Usage fees				
Bidding fees				
Auditing fees				

Source: Creara Analysis

12.4.2 Expenses

Table 35 - klimaaktiv: Expenses

EXPENSES
Marketing
Software
Staff (salaries)
Events
Equipment
Market research
Administrative expenses
Overhead

Source: Creara Analysis

12.5 Canvas Analysis

A deeper analysis of klimaaktiv’s standard business model is presented in Table 36:

12.5.1 BM Canvas Analysis

Table 36 - klimaaktiv Canvas Analysis

<p>KEY PARTNERS</p> <ul style="list-style-type: none"> • Ministry of Sustainability and Tourism: the authority overseeing the klimaaktiv initiative • Klimaaktiv initiative: the consortium setting the standards to be followed • Accredited bodies: certify compliance with the standards set by klimaaktiv • EES providers: the entities that implement the standards, klimaaktiv partners • EES clients: those who receive the energy efficiency services 	<p>KEY ACTIVITIES</p> <ul style="list-style-type: none"> • The guiding principle for environmental and energy efficient building design throughout Austria • Assesses and evaluates the quality of the building and the construction process as well as the central aspects of comfort and indoor air quality <p>KEY RESOURCES</p> <ul style="list-style-type: none"> • Brand and patent • Human capital (technicians, sales staff, etc.) • Online platform 	<p>VALUE PROPOSITION</p> <ul style="list-style-type: none"> • Establishment of transparent standard with criteria to be followed to promote and implement energy efficiency measures in buildings • Government endorsement • Solutions according to European Directive • The certificate carries no costs 	<p>CUSTOMER RELATIONSHIP</p> <ul style="list-style-type: none"> • Self-declaration with plausibility check • Assessment of criteria compliance <p>CHANNELS</p> <ul style="list-style-type: none"> • Awareness: website, public institutions • Evaluation: third party- auditing company • Purchase and delivery: self-declaration • After sales: website, public measures 	<p>CUSTOMER SEGMENT</p> <ul style="list-style-type: none"> • EES clients • Property developers, planners and promoters • ESCOs • Accredited bodies to certify compliance
<p>COST STRUCTURE</p> <ul style="list-style-type: none"> • Fixed costs: employees’ salary (sales staff, developers and other human resources), servers, marketing 		<p>REVENUE STREAMS</p> <ul style="list-style-type: none"> • Government allocation 		

Source: Creara Analysis

12.5.2 Value proposition

Table 37 - Value proposition for klimaaktiv

PROVIDER OF THE CERTIFIED EE SERVICE		CLIENT OF THE CERTIFIED EE SERVICE	
SERVICES <ul style="list-style-type: none"> ✔ Services will be audited, guaranteeing quality requirements ✔ Solution development according to European Directive on Energy Efficiency of Buildings standards and implementation of measures 	GAIN CREATORS <ul style="list-style-type: none"> ✔ Improve image by offering a quality service ascribing to European directive ✔ Help reduce energy costs ✔ Reduces impact on environment 	GAINS <ul style="list-style-type: none"> ✔ Improve energy service quality ✔ Reduce energy and CO₂ consumption ✔ Minimize financial and technical risks since established criteria are being followed ✔ Increase profitability of businesses 	CUSTOMER JOB(S) <ul style="list-style-type: none"> ✔ Improve energy efficiency ✔ In the case of businesses, increase profitability (decrease in costs by maintaining operational costs). ✔ Improve image by being environmentally friendly
	PAIN RELIEVERS <ul style="list-style-type: none"> ✔ Minimize financial and technical risks by following European criteria. 	PAINS <ul style="list-style-type: none"> ✔ Lack of time and resources 	<ul style="list-style-type: none"> ✔ Reduce operating costs

Source: Creara Analysis

13 QUALITY LABEL IN CONSTRUCTION

13.1 Description

The Quality Label in Construction (ZKG) is a voluntary, permanent, certification method that evaluates and rates products and services that meet high, professionally prepared and internationally comparable quality requirements. The aim of the Building and Civil Engineering Institute (ZRMK), promoter of the label, is to encourage efforts for excellence and quality results and to increase the competitiveness of products and services in the field of construction in the Republic of Slovenia.

ZKG wishes to establish a permanent project for evaluating products and services in the field of construction, with professional, European comparable criteria and methodology of assessment; to establish ZKG as an instrument for informing and protecting the consumer; to improve the quality of products / services, the level of quality assurance, and thus the competitiveness of Slovenian construction; encourage the research and development of new products; promote Slovenian products and services at home and abroad; and to achieve the European validation of the ZKG sign.

13.2 Phases of quality assurance scheme procurement








13.2.1 Quality assessment criteria and compliance

The procedure followed to acquire the ZKG differs from business models analyzed previously since companies go through bidding processes to get the Label. This means that only one company per product and service is awarded the label each year.

For a comparative evaluation the potential applicants can register products, services, devices or technologies that they produce, market or perform in Slovenia. The applicant must be a manufacturer, a contractor or an authorized representative who complies with all the legal conditions for the production and sale of products or the provision of services in Slovenia.







Comparative evaluation will be carried out based on enough applications, prepared tender specifications and criteria for each area or object.

The process followed by ZRMK for the establishment or creation of each bidding process is:

-  Preparation of a draft project and selection of a project team in which well-known experts from the field to be evaluated are involved.
-  Preparation of detailed evaluation criteria
-  Preparation and execution of an annual call for tender
-  Establishment of the evaluation committee, that will conduct the evaluation process
-  Award of ZKG
-  Determine the conditions for the use of the ZKG graphic image as a brand service mark
-  Supervise and monitor the use of the ZKG brand

13.2.2 Evaluation of compliance with standards and execution

The scoring system is based on the ZKG scheme. The quality of the declared product, service, device, or technology is evaluated according to 6 evaluable blocks. The allocation of points is done accordingly for each subject of evaluation. The scoring system for evaluating companies, where the emphasis is on the energy efficiency of the product and other product characteristics that are related to energy efficiency, is as follows:

-  Quality score (475 points)
-  Process efficiency and quality (395 points)
-  Strategy and leadership (30 points)
-  Customer satisfaction (50 points)
-  Impact on society and the environment (25 points)
-  Financial and business success (25 points)

To be a candidate to the certificate, a minimum of 572 points is necessary.

13.2.3 Concession of Quality Label in Construction

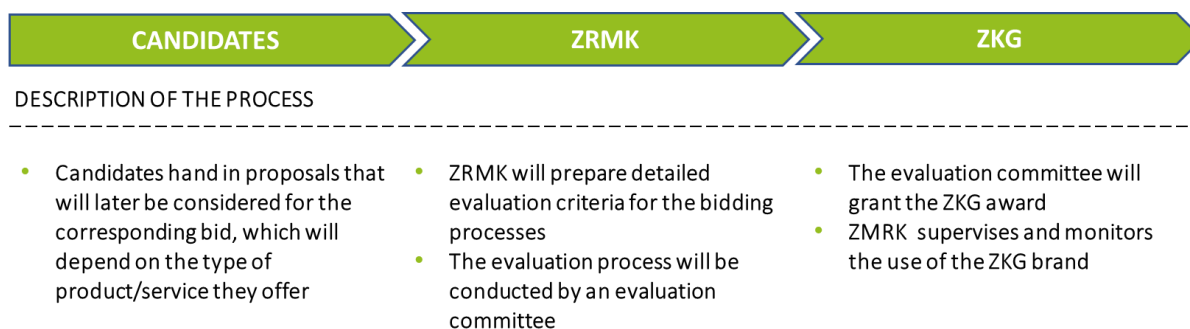
The decision process is as follows:

- ✔ First round of evaluation is done on the application dossier
- ✔ Determine the selected short-list
- ✔ Assessment of the product and the applicant
- ✔ Second round of evaluation is done considering the results of the audit
- ✔ A final assessment is done, after which a report on the winners is conducted
- ✔ Winners are notified of the results

Under this business model service providers are given the quality label rather than the service itself.

13.2.4 Standard project delivery model

Table 38 - Standard project delivery model for ZKG



Source: Creara Analysis

13.3 Main Features

The main features of ZKG's quality label are found in Table 39:

Table 39 - Main features for ZKG

	ZKG
Principal action	Labelling
Country	Slovenia
Type	Voluntary
Target user	ESCOs
Authority	Building and Civil Engineering Institute (ZRMK)
Phases	<ol style="list-style-type: none"> 1. Establishment of requirements 2. ZRMK publishes a bid for areas of construction 3. ESCOs participate in the bid 4. Evaluation process by ZRMK of all the applicants 5. Final report with the winners of the bid 6. Provision of the quality label
Stakeholders	<ol style="list-style-type: none"> 1. ZMRK 2. ESCOs 3. Clients
Support measures/ dissemination	Direct contact, recognition, award presentation, events
Year of (expected) implementation	2015
Costs	Bidding costs

Source: Creara Analysis

13.4 Key factors

13.4.1 Incomes

Table 40 – ZKG: Incomes

INCOMES				
FROM WHERE?	WHEN?	FROM WHOM?	METHOD	TYPE
Application fees	Before	Client	Percentage of the total cost of the project	Payment per quality criteria
Subscription/membership fees	During	ESCOs		Payment for all quality criteria at once
Evaluation fees	After	Government	Set amount	Payment installments per quality assurance phases
Implementation fees		Association		
Certification fees				Payment in full of all phases
Usage fees				
Bidding fees				
Auditing fees				

Source: Creara Analysis

13.4.2 Expenses

Table 41 – ZKG: Expenses

EXPENSES
Marketing
Software
Staff (salaries)
Events
Equipment
Market research
Administrative expenses
Overhead

Source: Creara Analysis

13.5 Canvas Analysis

A deeper analysis of ZKG’s quality label business model is presented in Table 42:

13.5.1 BM Canvas Analysis

Table 42 - ZKG Canvas Analysis

<p>KEY PARTNERS</p> <ul style="list-style-type: none"> • ZMRK: the association in charge of launching, evaluating and granting the bidding process • ESCOs: the companies that opt to acquire the label and are involved in the bidding processes • Client: the natural or legal person that receives the services of the ESCOs • EES clients: legal or natural person wanting to implement EES in their facilities/ residences 	<p>KEY ACTIVITIES</p> <ul style="list-style-type: none"> • Evaluation of products and services in the construction field, especially those related to energy efficiency • ZKG as an instrument of information and customer protection <p>KEY RESOURCES</p> <ul style="list-style-type: none"> • Brand and patent • Human capital (technicians, sales staff, etc.) • Bidding process • ZKG award 	<p>VALUE PROPOSITION</p> <ul style="list-style-type: none"> • Creation of incentives to improve solutions to become a candidate for the label • Recognition acquired by obtaining the label • Ability to compare different products and services 	<p>CUSTOMER RELATIONSHIP</p> <ul style="list-style-type: none"> • The relationship is established by preparing and presenting a bidding proposal by the company wishing to obtain the label <p>CHANNELS</p> <ul style="list-style-type: none"> • Awareness: website, fairs, events • Evaluation: established criteria for bidding process • Purchase and delivery: award of the label after bid is concluded and evaluated • After sales: supervision of use of the label 	<p>CUSTOMER SEGMENT</p> <ul style="list-style-type: none"> • EES clients • ESCOs
<p>COST STRUCTURE</p> <ul style="list-style-type: none"> • Revenues from bidding process Fixed costs: employees’ salaries, developers and other human resources) 		<p>REVENUE STREAMS</p> <ul style="list-style-type: none"> • Revenues from bidding process 		

Source: Creara Analysis

13.5.2 Value proposition

Table 43 - Value proposition for ZKG

PROVIDER OF THE CERTIFIED EE SERVICE		CLIENT OF THE CERTIFIED EE SERVICE	
<p>SERVICES</p> <ul style="list-style-type: none"> ✔ Creation and implementation of products/ services that have been awarded with the ZKG ✔ Process efficiency and quality ✔ Competitive products and services ✔ Provision of the label 	<p>GAIN CREATORS</p> <ul style="list-style-type: none"> ✔ Implement, among others, energy efficiency measures and products ✔ Reduce environmental impact ✔ Help reduce energy consumption 	<p>GAINS</p> <ul style="list-style-type: none"> ✔ Increase energy efficiency ✔ By implementing quality products/ services, minimize financial risks ✔ Reduce operating costs ✔ Increase productivity ✔ Become more environmentally friendly 	<p>CUSTOMER JOB(S)</p> <ul style="list-style-type: none"> ✔ Implement high quality measures to improve energy efficiency ✔ By using competitive products that increase EE, acquire better public perception ✔ Easier decision making when choosing quality products/ services
	<p>PAIN RELIEVERS</p> <ul style="list-style-type: none"> ✔ Implementation of high quality products/ services is cost-effective in the long run 	<p>PAINS</p> <ul style="list-style-type: none"> ✔ High amount of resources may be needed to implement products/ services ✔ Bidding costs may be passed on to the client 	

Source: Creara Analysis

14 COMPARISON OF BUSINESS MODELS




14.1 Qualities Assessed

To give National Promotion Teams a broader spectrum of the qualities of each quality assurance schemes, the following characteristics were identified to compare the different business models from the perspective of the certificate issuer as well as the receiver's. The qualities have been assessed according to Creara's criteria and we invite National Promotion Teams to fill in the blank table available in Annex I, to assess the qualities according to the characteristics of their national markets.




14.1.1 Qualities to be considered by the issuer

14.1.1.1 Marketability




Penetration: assesses success achieved by the scheme as measured by the number of projects that have ascribed to it, its national and international presence and the credibility attached to the scheme:

-  Low: the quality assurance scheme has been used in 50 projects or less and has had little impact internationally
-  Medium: the scheme has been used in 51-100 projects and/ or it has had some relevance nationally or internationally
-  High: the quality assurance scheme has been implemented in over 100 projects and/ or it enjoys high credibility and recognition

Maturity: categorizes the amount of time the quality assurance scheme has been in operation as another way to measure success and stability:

-  Low: the scheme has been around for under 10 years
-  Medium: the quality assurance scheme has a maturity between 10 and 20 years
-  High: the scheme has been implemented for over 20 years

Recognition: categorizes the number of stakeholders that perceive the scheme as an efficient way of assuring quality and hence make it better accepted by the market, as measured by the number of stakeholders that support it:

-  Low: the number of stakeholders is between 1-3, decreasing its credibility
-  Medium: the number of stakeholders backing the quality assurance scheme is 4-6, giving it some credibility
-  High: the number of stakeholders that support the scheme is over 7 making it 'market-accepted'

Replicability: represents the ease of implementing the BM in other European countries. This was estimated by averaging the results obtained from the responses given by other QualitEE project partners¹²:

- ✔ Low: the business model cannot be easily transferred to another country and substantial changes would be required. The average 3.5 or less.
- ✔ Medium: the scheme could be implemented in another country but would require some changes. The average is between 3.6-4.
- ✔ High: the model could be easily implemented in any country. The average is over 4.1.

Adaptability: categorizes how easy it is for the scheme to adapt and react to changes in the market without losing quality as regarded by the fields they cover:

- ✔ Low: the model would face difficulties reacting to changes in the market and runs the risk of losing its quality
- ✔ Medium: the scheme would be able to react to some changes in the market but not others, and/or would lose some qualities while doing so
- ✔ High: the business model would not be impacted by changes in the market and through its reaction it would not lose quality

14.1.1.2 Administrative qualities

Government involvement: categorizes whether the quality assurance scheme is public, a private-public partnership or a solely private one:

- ✔ Low: the government is not involved in the scheme
- ✔ Medium: the scheme is made up of a private-public partnership
- ✔ High: the quality assurance is a government scheme

Typology of the stakeholders: depending on the type of stakeholder (private companies, governments, agencies, etc.), necessary for the implementation of the quality assurance scheme, ease of execution will vary:

- ✔ Low: the stakeholders present a barrier for the execution of the quality assurance scheme because of the entities they represent (usually governments)
- ✔ Medium: the entities represented may prove some difficulties for its implementation (government agencies)
- ✔ High: the entities the stakeholders represent do not present a barrier for the implementation (private companies/ associations)

¹² Partners were asked to punctuate replicability in their country by giving the schemes a score between 1 and 5, where 1 meant low replicability and 5 meant high replicability

Number of stakeholders: the higher the number of stakeholders involved in the process, the more difficult it may prove to implement:

- ✔ Low: the number of stakeholders involved in the process presents a barrier and complicates the implementation of the scheme (over 6 stakeholders).
- ✔ Medium: the number of stakeholders involved may prove some difficulties in its implementation (4-6 stakeholders)
- ✔ High: the number of stakeholders involved does not present a barrier (3 stakeholders or less).

Time required: assesses the time required for the implementation of the quality assurance scheme in a different country, which may steer the selection of one model or another one:

- ✔ Low: the time required to establish the model acts as a barrier for its implementation in other countries
- ✔ Medium: the establishment time of the scheme may become a disincentive to its implementation in different markets
- ✔ High: the amount of time required to establish the model in another country does not represent a barrier

14.1.1.3 Economic qualities

Implementation cost: categorizes the extent of the costs for the implementation of the quality assurance scheme in a different country:

- ✔ Low: the costs present a barrier to the implementation of the scheme in other countries
- ✔ Medium: the costs are sufficiently relevant but do not suppose a barrier to the implementation
- ✔ High: the costs of the implementation of the quality scheme in the country are not considered to be relevant to its implementation in different countries




14.1.2 Qualities to be considered by the receiver

14.1.2.1 Administrative qualities

Bureaucracy: categorizes the bureaucratic requirements receivers of the quality assurance scheme must meet for them to obtain it:




- ✔ Low: bureaucratic procedures may act as a barrier for applicants to the quality assurance scheme
- ✔ Medium: the requirements that need to be met by applicants to the schemes present some difficulties, but do not act as disincentives
- ✔ High: bureaucratic procedures are simple and facilitate access to the scheme

Time required: categorizes if the time spent by the receivers in the acquisition of the quality assurance scheme may act as an impediment or become a weakness of the scheme because it may disincentive and demotivate receivers from acquiring it:




-  Low: the time required to attain the certificate presents a barrier.
-  Medium: the amount of time that receivers must invest to get the QA may in some cases demotivate them from obtaining it
-  High: the amount of time necessary to obtain the scheme does not represent a barrier

14.1.2.2 Economic qualities

Acquisition costs: categorizes the costs receivers of the quality assurance scheme would have to face to get them:

-  Low: the costs of the business model are too high and act as a barrier and disincentive for the receivers. Costs are higher than 2,000 €.
-  Medium: the costs of acquisition are significant and in some cases, may discourage entities from ascribing to the quality assurance schemes. Acquisition costs are between 1,001-2,000 €.
-  High: the costs to acquire the quality assurance scheme are low and therefore do not present a barrier to the receivers for their attainment. Costs are lower than 1,000 €.

Financial attractiveness: considers if the scheme presents any monetary benefits for the receivers, in the form of easier access to finance, tax benefits, subsidies, etc.:

-  Low: the implementation of the quality scheme does not involve a monetary incentive for the applicants
-  Medium: the business model presents some financial attractiveness such as tax incentives or easier access to finance
-  High: the quality assurance scheme is directly attached to monetary benefits

14.2 Benchmarking

Table 44 – Benchmarking

			BUSINESS MODELS										
	Categories	Sub-categories	DECA	THERMOPROFIT	BUND	ISO	CHPQA	PASSIVE HOUSE	EPC STANDARD	ANESE	KLIMAAKTIV	ZKG	
Considerations for issuer of QA	Marketability	Penetration	✓	✓	✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓	✓✓✓	✓	
		Maturity	✓	✓✓✓	✓✓	✓✓✓	✓✓	✓✓	✓	✓	✓	✓	
		Recognition	✓✓	✓✓	✓✓	✓✓✓	✓✓	✓✓✓	✓✓	✓✓	✓✓	✓✓✓	✓
		Replicability	✓	✓	✓✓	✓✓✓	✓	✓	✓	✓✓	✓	✓	✓✓
		Adaptability	✓✓✓	✓✓	✓✓	✓✓✓	✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
	Administrative	Number of stakeholders	✓✓✓	✓✓	✓✓	✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
		Government involvement	✓	✓✓✓	✓	✓✓	✓✓✓	✓	✓✓	✓	✓	✓✓	✓
		Time required	✓✓✓	✓	✓✓	✓	✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓
		Typology of stakeholders	✓✓✓	✓✓	✓✓✓	✓✓	✓	✓✓✓	✓	✓✓✓	✓✓✓	✓✓	✓✓✓
Economic	Implementation costs	✓✓✓	✓	✓✓	✓	✓	✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓	
Considerations for receiver of QA	Administrative	Bureaucracy	✓✓✓	✓	✓✓	✓	✓	✓	✓✓	✓✓	✓✓✓	✓✓	
		Time required	✓✓✓	✓✓✓	✓✓	✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	
	Economic	Acquisition costs	✓✓✓	✓✓	✓	✓	✓✓✓	✓	✓✓✓	✓✓	✓✓	✓✓	
		Financial attractiveness	✓	✓✓	✓	✓✓	✓✓✓	✓✓	✓	✓	✓✓	✓	

Low: ✓ Medium: ✓✓ High: ✓✓✓

Source: Creara Analysis

15 CONCLUSIONS

Throughout this report, different business models have been analyzed with the aim of offering National Promotion Teams the necessary background to identify the quality assurance scheme that best adapts to their national markets. The following conclusions below are Creara's opinion based on the analysis at an international level. National views may differ from Creara's opinion since different markets will react differently to the qualities assessed. For this reason, National Promotion Teams need to consider the facility of replicability of the different models considering the qualities not only of said models but also of their national markets.

The benchmarking exercise conducted serves as the base for these conclusions. While 14 qualities were identified, it is considered that some of them are more relevant than others, because of the implications they carry at the time of implementation. These qualities are replicability, number of stakeholders and government involvement, for the issuer of the quality assurance scheme, and bureaucracy and acquisition costs for the receiver of the quality assurance scheme.

In terms of replicability, the results obtained came directly from the responses given by other partners in the QualitEE project, who were asked to rate them according to the ease of reproduction of the business model in their national market. The model granted the highest score was ISO's, which could be because of the high international penetration that the organization already enjoys. One must not discard, however, those models implemented by private organizations since it is considered that those are the ones whose replicability may be easier to achieve, always taking into account each of the models' different characteristics.

The number of stakeholders involved in the implementation process of a quality assurance scheme may prove some difficulties for it becomes harder to reach agreements as the number of stakeholders increases. In this sense, 5 business models stand out: DECA, EPC Standard Contract, ANESE, klimaaktiv and ZKG. All these models are implemented by between one and three stakeholders, simplifying the process and making it more agile.

Government involvement can be considered both an advantage and a disadvantage. On the one hand, being a government scheme makes the business model more reliable and credible. On the other hand, however, implementing a government quality assurance scheme can be difficult because it presents implementation problems since reaching governmental agreement can be a handicap. The business models that have the highest government involvement are Thermoprofit and CHPQA. Other models are also endorsed by government agencies and departments such as the Austrian EPC Standard Contract or the klimaaktiv initiative.

Regarding receivers of the quality assurance scheme, the first quality to be analyzed is bureaucracy. Bureaucratic procedures can easily act as a barrier in the implementation of quality assurance schemes because of inefficiency or structure. Many receivers may discard or disregard the acquisition of a quality assurance scheme if the measures needed to obtain them are too difficult, complicated or long. The business models with the simplest bureaucratic procedures are DECA and klimaaktiv, because the implementation is done through a "self-declaration with plausibility check", meaning there are few parts and procedures involved in the process.

Acquisition costs is another quality to be considered when deciding what business model best adapts to different market. For receivers, which are usually the stakeholders that carry the responsibilities of payment, high costs of acquisition may make them lose interest much as extensive bureaucratic procedures would. In this regard, several business models stand out because of their low acquisition costs: DECA, CHPQA, EPC Standard Contract, klimaaktiv or ZKG.

There are business models that combine the main qualities explained here, as well as many of the others considered in the benchmarking, making them more suitable for international implementation. DECA stands out because of its low acquisition costs, low number of stakeholders involved in the process, its adaptability and low time requirements as well as limited bureaucratic procedures and acquisition costs. DECA, however, does not enjoy government involvement, which is both an advantage and disadvantage, and is not seen as easily replicable by other project partners.

Klimaaktiv is another business model whose qualities make it optimal for implementation internationally. On the one hand, it is backed by a government agency and has low acquisition costs and relatively short bureaucratic procedures. Also, the number of stakeholders involved in the implementation process is limited and its penetration in the Austrian market is high. On the other hand, however, project partners consider it to have low replicability and the model has not been around for as long as some of the others.

ZRMK's Quality Construction Label (ZKG)'s qualities are also interesting when considering its implementation internationally. It stands out in terms of adaptability, number of stakeholders and implementation times and acquisition costs. ZKG lacks government involvement, maturity and recognition, however the overall model presents some motivating features.

The aim of this report is to become a tool for National Promotion Teams to be able to identify the business models that best fit the characteristics of their national markets. The conclusions reached are based on the analysis carried out by Creara, considering the business models at an international level, which means that they may or may not apply to specific countries. It is for this reason that National Promotion Teams must reach their own conclusions by considering the different aspects that affect the implementation of a quality assurance scheme for energy efficiency services in their respective countries and hence choosing the one that best adapts to them or creating a new model mixing different characteristics from various models.

16 ANNEX

			BUSINESS MODELS									
	Categories	Sub-categories	DECA	THERMOPROFIT	BUND	ISO	CHPOA	PASSIVE HOUSE	EPC STANDARD	ANESE	KLIMAAKTIV	ZKG
Considerations for issuer of QA	Marketability	Penetration										
		Maturity										
		Recognition										
		Replicability										
		Adaptability										
	Administrative	Number of stakeholders										
		Government involvement										
Time required												
Economic	Typology of stakeholders											
	Implementation costs											
Considerations for receiver of QA	Administrative	Bureaucracy										
		Time required										
	Economic	Acquisition costs										
		Financial attractiveness										

Low: ✓ Medium: ✓✓ High: ✓✓✓

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