



TRAINING

Quality certification frameworks
for Energy Efficiency services to
scale up responsible investment
in the building sector

Module 2: Quality Criteria





Training target group

✓ Public and private clients → those who are interested in developing EE measures. Owners and facility managers of:

- Schools and universities
- Hospitals and health care
- Hotels
- Large scale multi-family houses
- Etc.



✓ Energy service providers → in particular those who plans to deliver energy services or are already engaged and would like an introduction to quality criteria



✓ Financial Institutions → with potential interest in financing energy efficiency projects or also are already financing providers, clients and bears (part of) the project risk



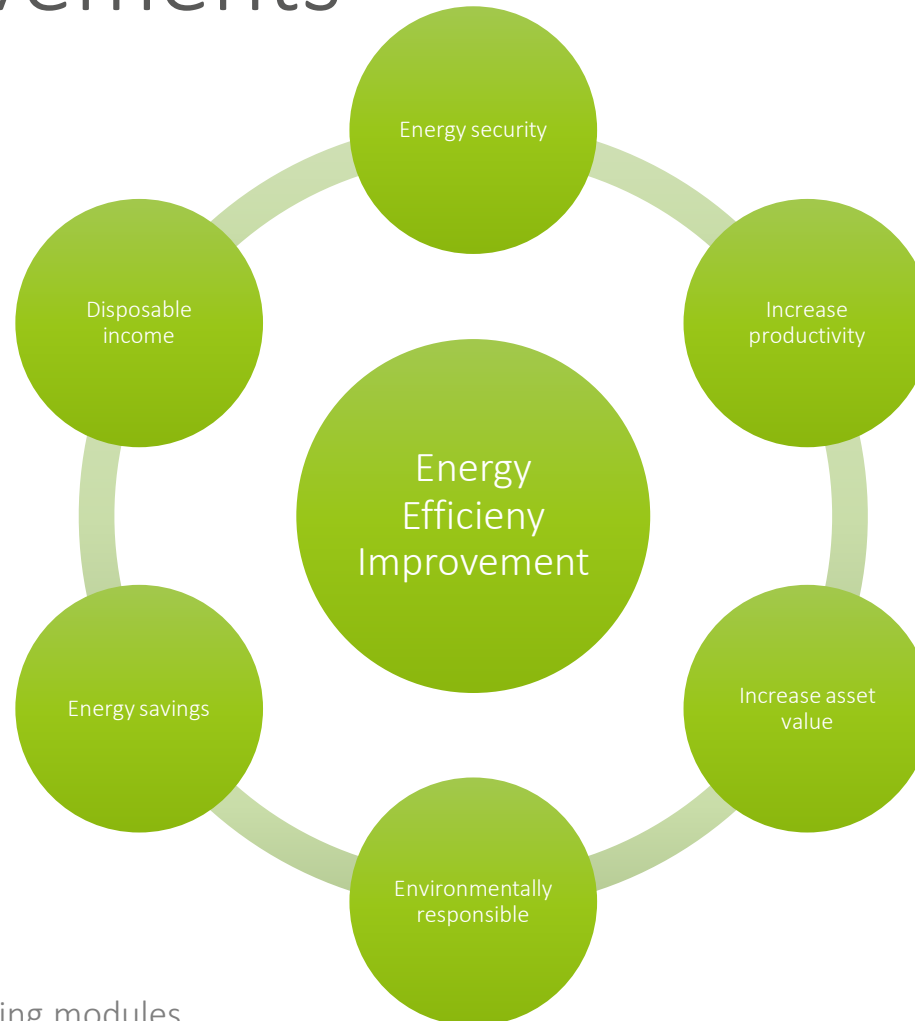


Aim of the training

- ✔ Common understanding of “good quality”
- ✔ Training shall foster the widespread application of quality criteria in EES projects. This leads to improvement in service quality and recognition for the best performers
- ✔ Better informed investors, increased transparency and trust will expedite investment decisions
- ✔ Module 2 provides detailed information on the quality criteria



Value of energy efficiency improvements



Source: Trust EPC South, D4.2 Training modules for tertiary sector actors, slide 13 [2016]



Main challenges and barriers for EE services

✓ Market **heterogeneity**

- Market for Energy Efficiency Services is highly heterogeneous
- Market has developed considerably
- But fragmentation and heterogeneity set limits to growth

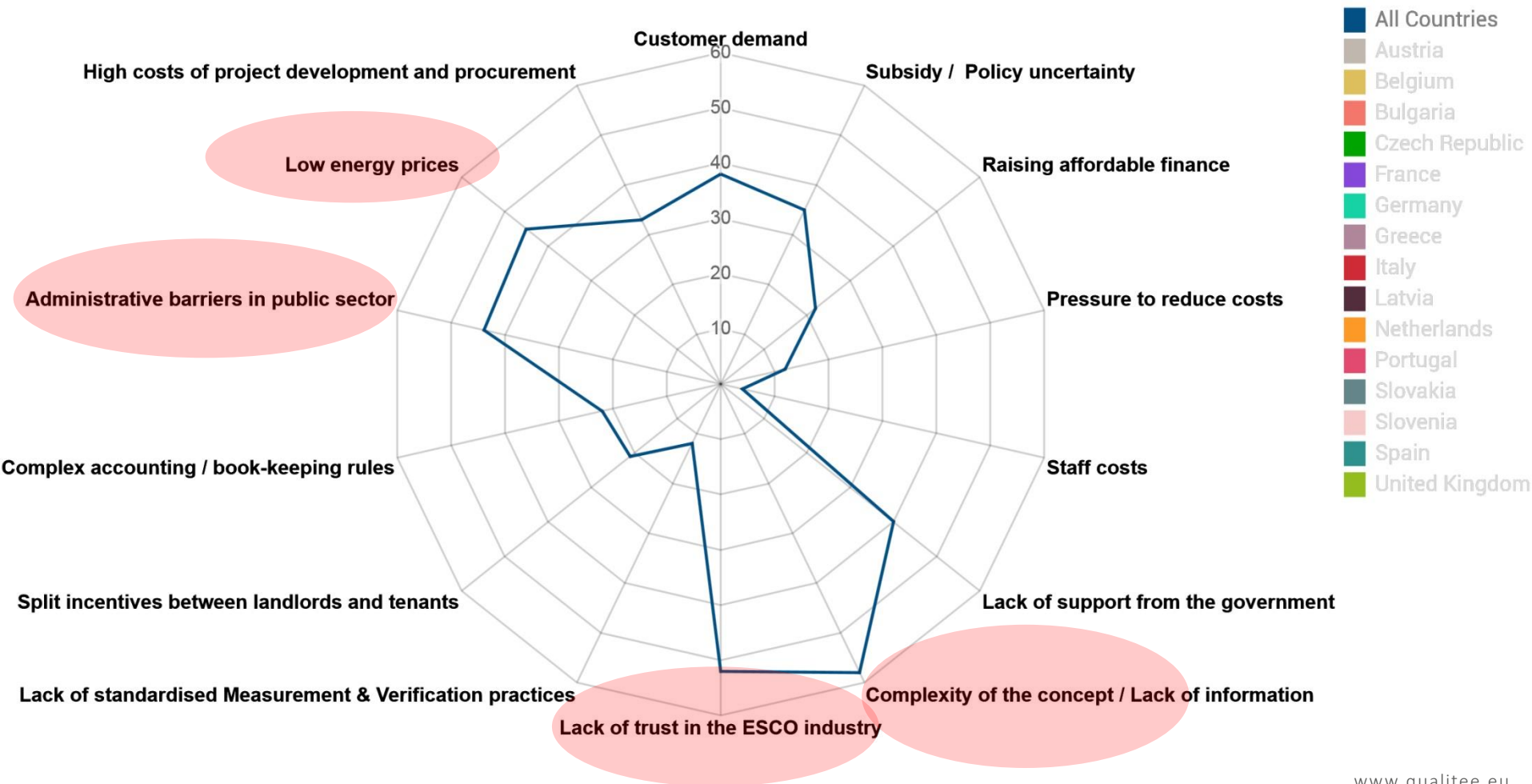
✓ **Complexity** of energy efficiency services

- Due to heterogeneity of Energy Service Providers
- Difficult for investors to differ between “good quality” and “bad quality” services



Barriers to EPC business

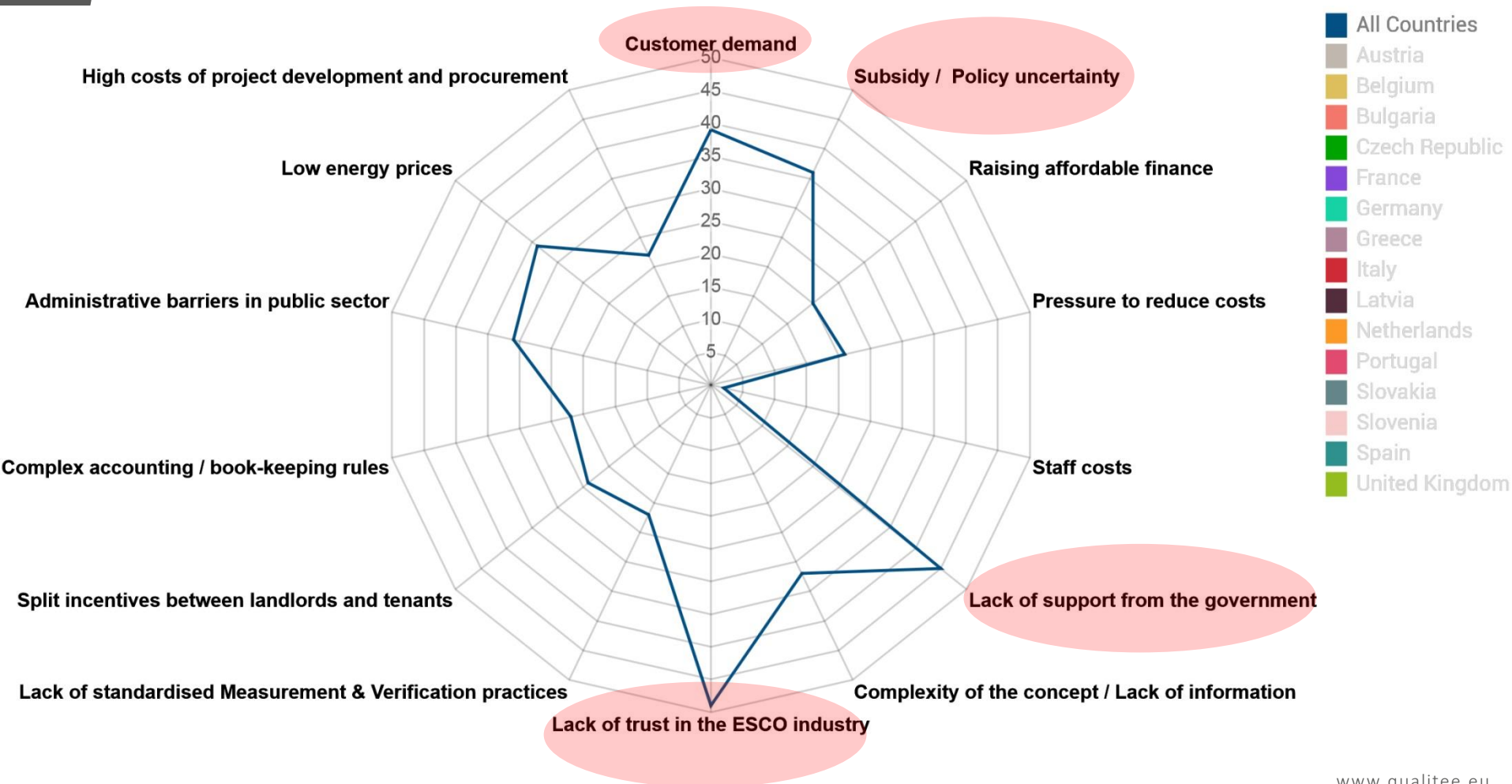
What are the main barriers to EPC business based on the activities of the last 12 months?





Barriers to ESC business

What are the main barriers to ESC business based on the activities of the last 12 months?





Quality of services

- ✔ Service quality is the ability of a service provider to offer a primarily intangible service, which requires the client's involvement, at a certain requirement level that meets client expectations
- ✔ According to ISO 9000 quality is the „degree to which a set of inherent characteristics fulfils requirement“
- ✔ General quality defining aspects can cover the whole value chain of a product or service from the planning phase to monitoring & verification and beyond to secure high-quality projects
- ✔ Quality criteria are essential for a systematic planning, implementation and assessment of the quality of projects.
- ✔ Quality criteria contain quality requirements with reasonably defined characteristics
- ✔ Service quality is mainly defined in 3 dimensions: Potential of the service provider (structural quality and capability), process quality, quality of result
- ✔ Quality underlies a continuous improvement process



Application of quality criteria

- ✔ A single common set of quality criteria is the basis for the general understanding of good quality of a product or service.
- ✔ The **QualitEE** criteria are tailor-made for the application on energy efficiency services and present guidelines
- ✔ The relevant quality criteria can be applied by different stakeholders, such as
 - clients by incorporating them into tender documents and assessing their fulfillment during and after the project
 - EE service providers by integrating them into their own product/service assessment or
 - financial institutions by requiring quality criteria in projects to provide financing.
- ✔ Quality criteria can also be used as a decision support

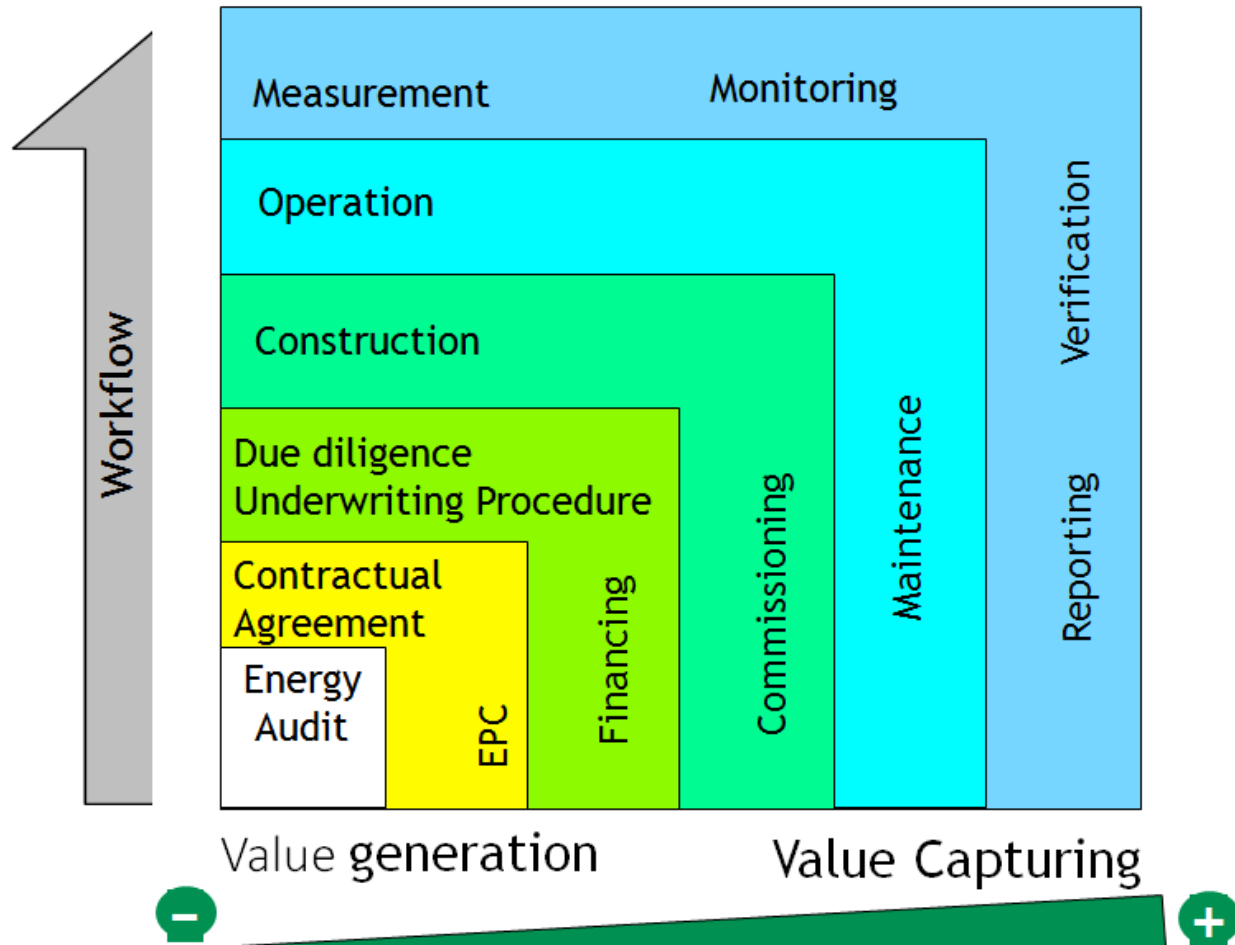


Risks of EES

- ✓ Technical, financial structural, etc. risks occur in every phase of the value chain

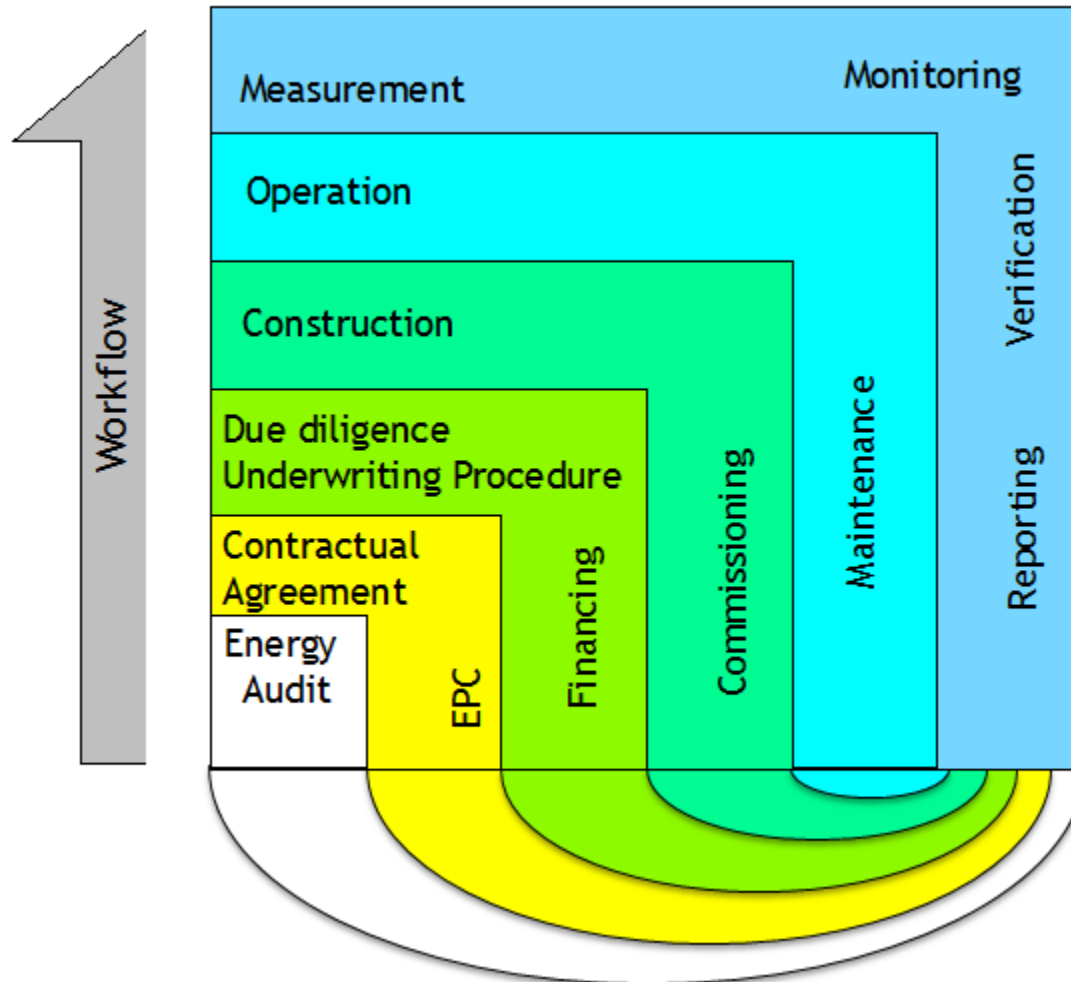


Standardized framework for sustainable EE projects



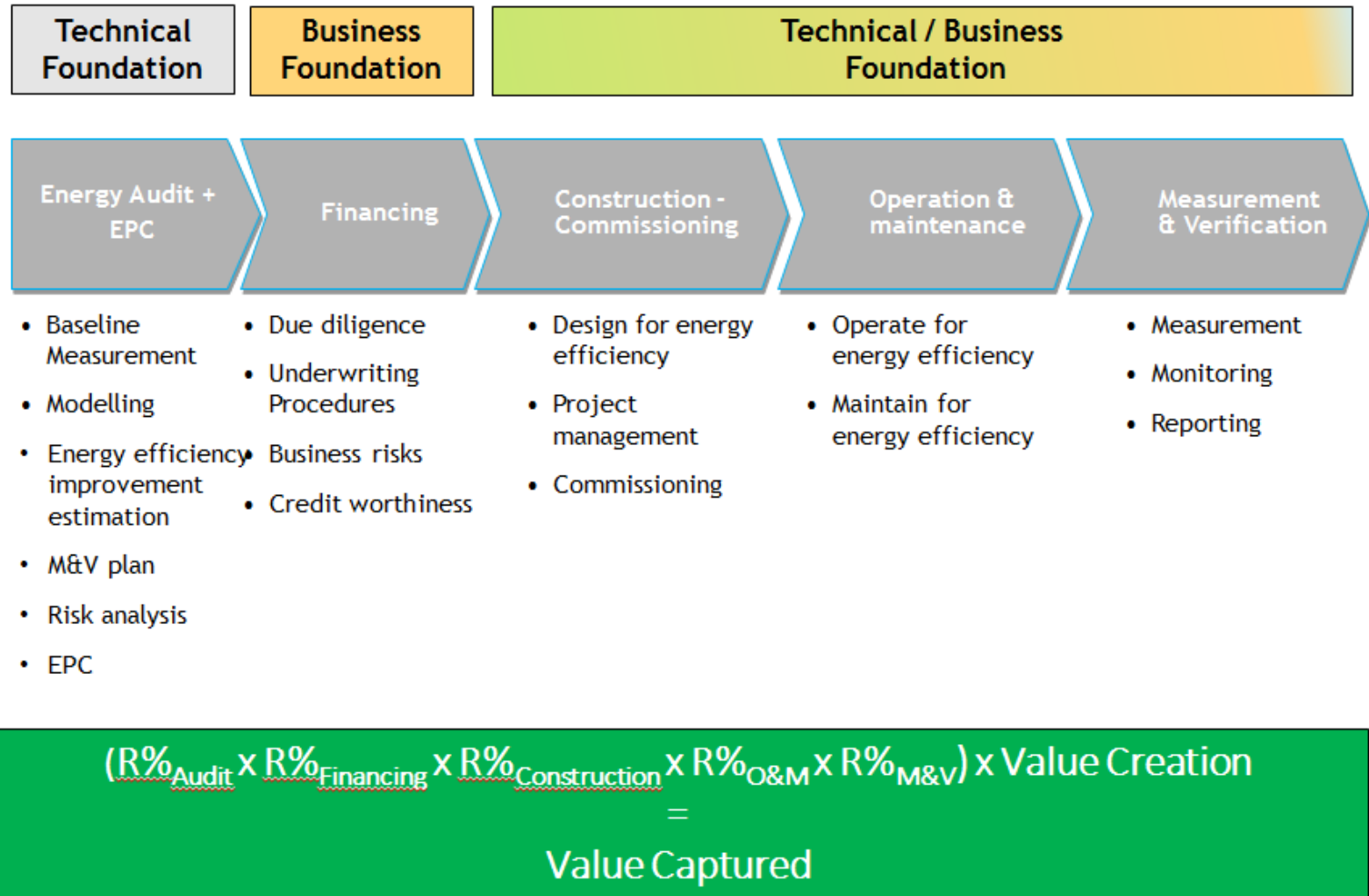


Energy Management of sustainable EE improvement actions





The value chain is multiplicative: It is as good as the weakest component





Benefits of quality criteria

✓ What are quality criteria for?

- Quality criteria contain quality requirements for services or goods with reasonably defined characteristics

✓ How can they help me?

Client

- Help to specify needs
- Help to define requirements when procuring energy efficiency services

Provider

- Help to define and describe own services
- USP
- (Internal) assessment of service quality during and at the end of the energy efficiency service project
- Define internal quality standards for own services, use for internal quality management/continuous quality improvement
- Development of an internal procedure and service quality standard

Financial Institutions

- Differentiation between quality assured and non-quality assured projects
- Definition of (minimum) requirements when financing energy efficiency projects



Benefits of quality criteria

✓ How can they help me?

Client

- Basis for service quality definition in tender documents
- Assessment of service quality during and after the energy efficiency service project based on project documentation

Provider

- Basis for service quality description in service proposal
- (Internal) assessment of service quality during and at the end of the energy efficiency service project
- Development of an internal procedure and service quality standard

Financial Institutions

- Consideration of the application and fulfillment of quality criteria in DD
- Requirement of application of quality criteria in EE service projects

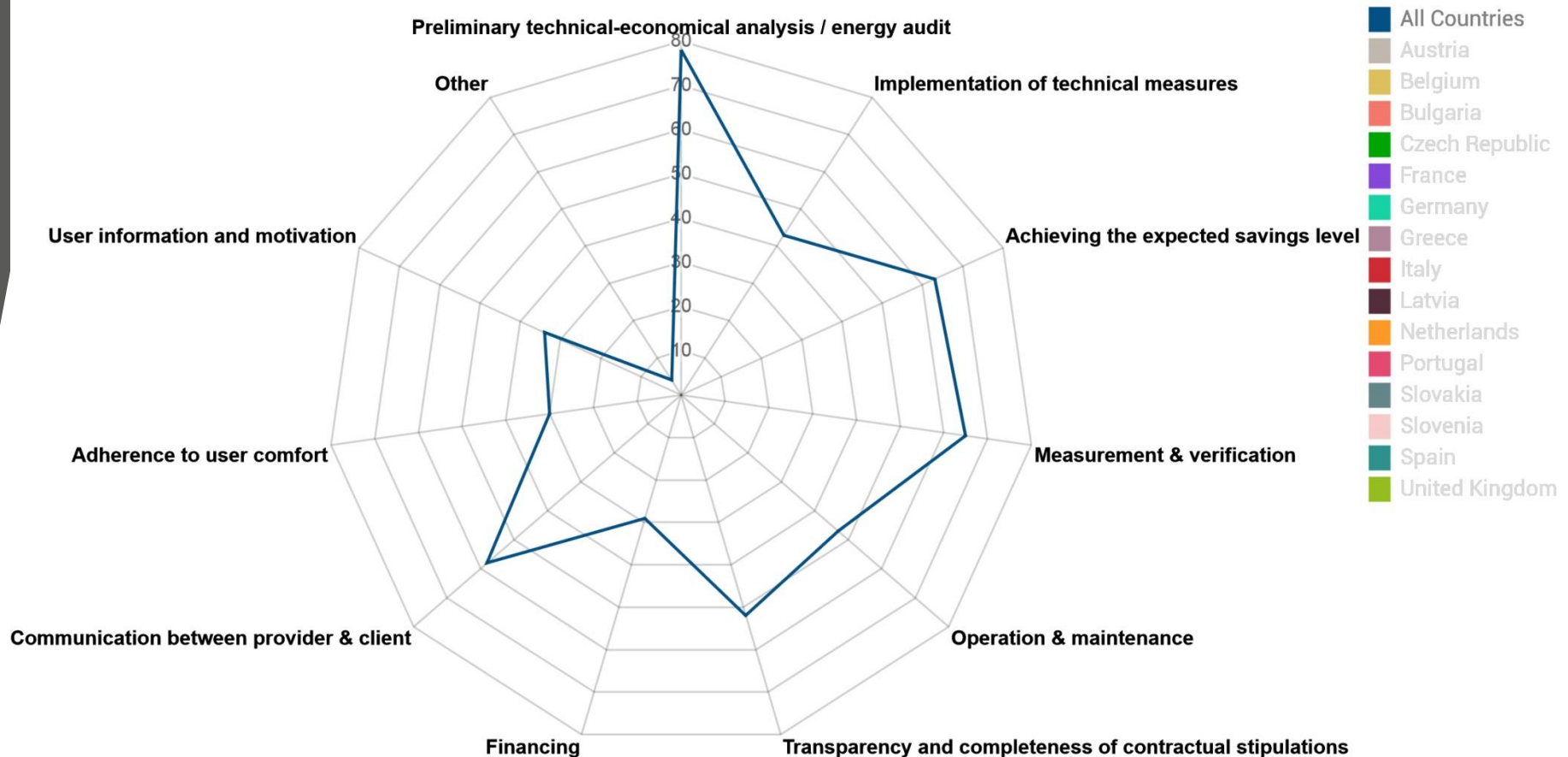


Technical Quality Criteria



Technical Quality Criteria

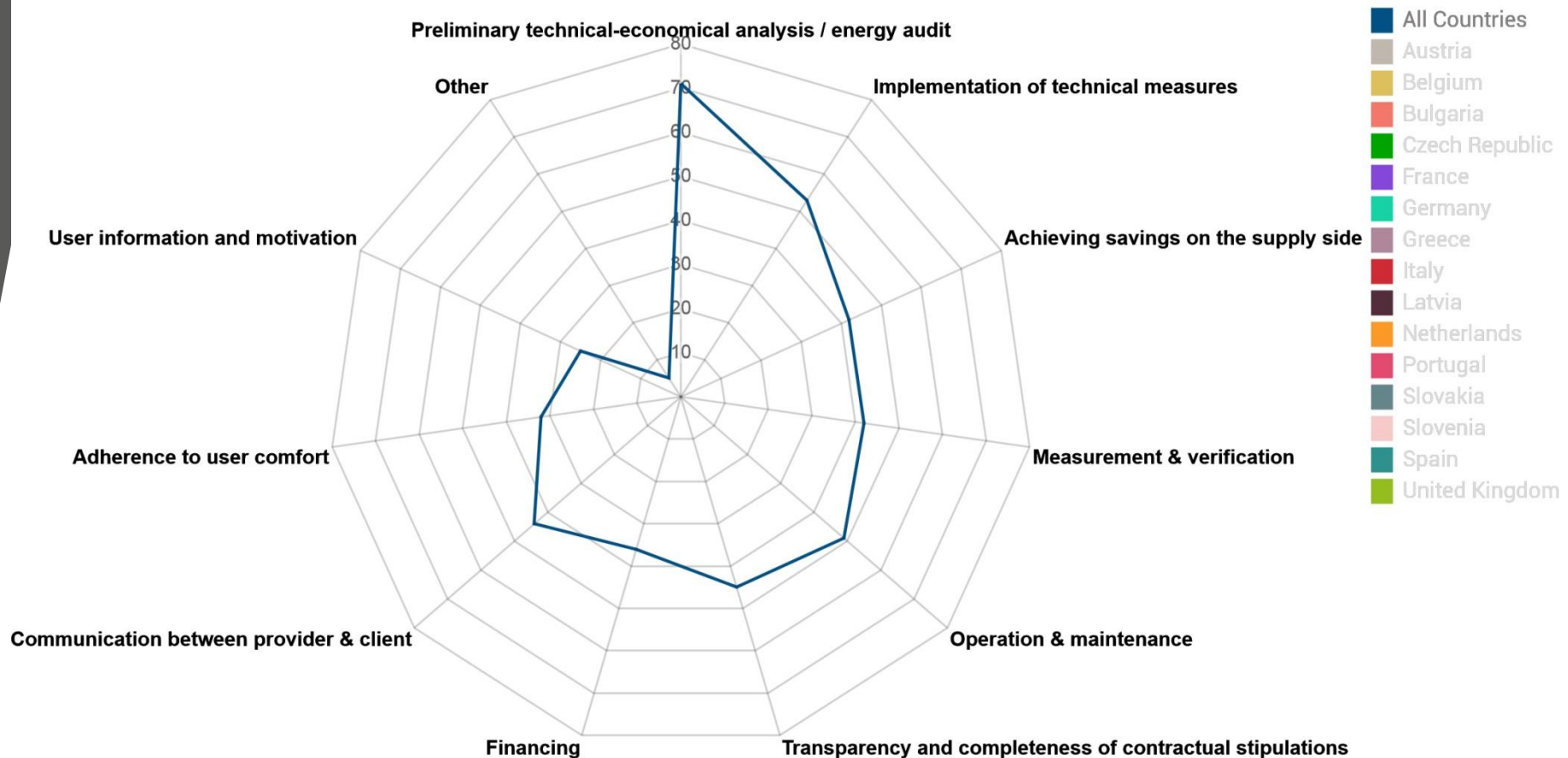
- ✔ What are the most important determinants of quality for EPC?
[QualitEE Survey, October 2017]





Technical Quality Criteria

- ✔ What are the most important determinants of quality for ESC?
[QualitEE Survey, October 2017]



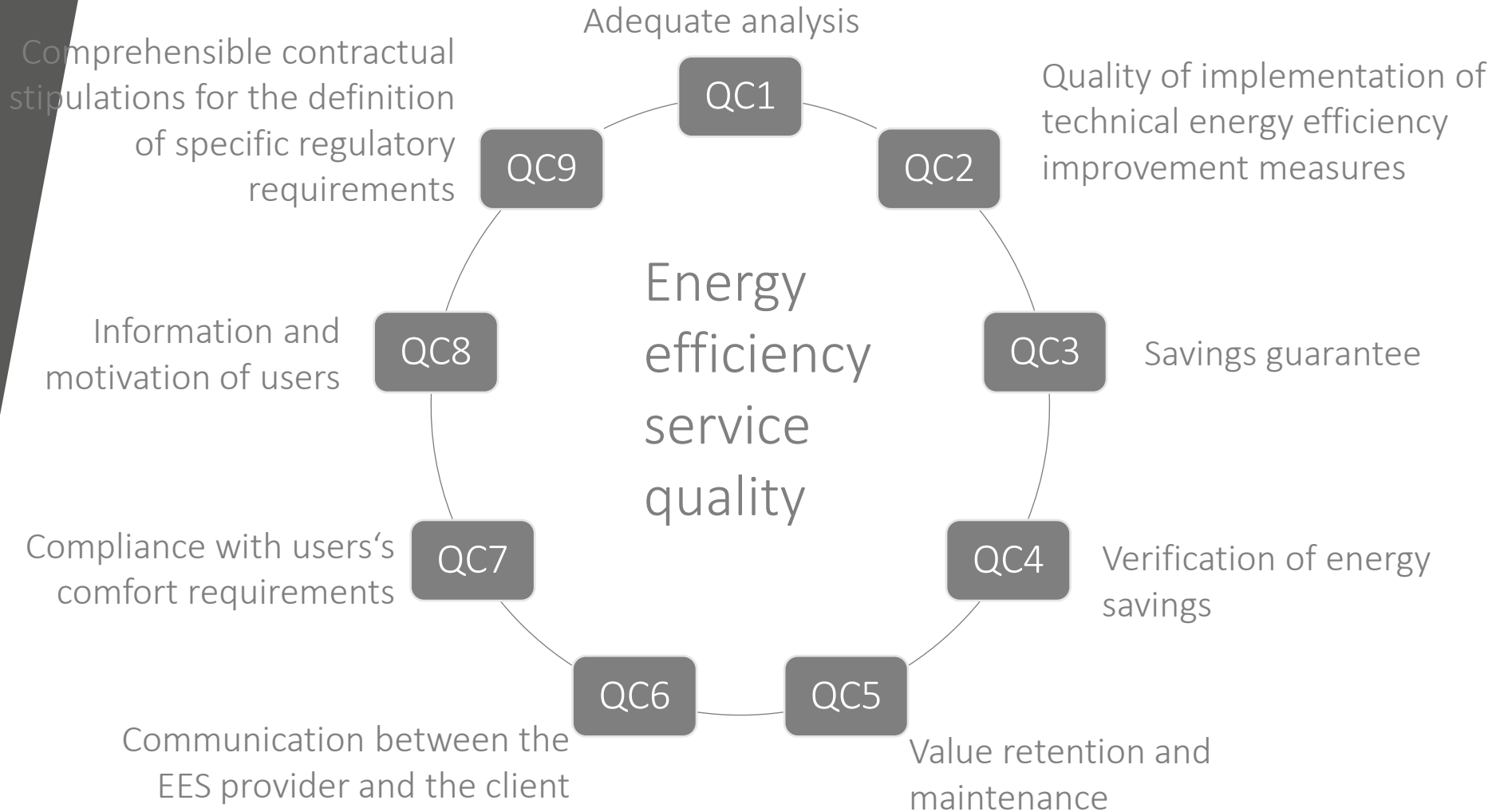


Quality Criteria Structure

Quality Criterion	Proof	Assessment	Comment
<p>Which specific aspect of the energy efficiency service is being assessed?</p> <p>What is the ideal requirement for this specific aspect?</p>	<p>What evidence should the assessor look for to assess the criterion.</p>	<p>How should the assessor decide whether the evidence collected demonstrates the criterion has been achieved?</p> <p>This could be pass/fail presence of the evidence or there may be a set of quality statements to assess against in a rating scale.</p>	<p>Supporting comments to assist the assessor in coming to their conclusion.</p>



Categories of Quality Criteria





Example AC 2-1

Assessment Criterion	Proof	Assessment	Comment
2-1 Performance of services in accordance with applicable standards, statutes and official permits	<p>Compliance with technical standards relevant for the implementation of technical measures, covering among others the following topics:</p> <ul style="list-style-type: none">▪ General provisions for construction services▪ Individual technical standards for those technical systems that are improved by the EES▪ Compliance with official permits that are relevant for the rendering of EES	<p><u>ex-ante:</u></p> <p>(a) Does the Contract commit the EES provider to comply with the standards stated in the 'proof' column, with official permits and statutory conditions applicable to the object?</p> <p>(b) Does the Contract commit the EES provider to verify the official permits applicable to the object with respect to their relevance to the EES to be rendered?</p> <p><u>ex-post:</u> Were the standards, statutory conditions and official permits complied with while rendering the services?</p>	<p>A complete, exhaustive list of standards to be complied with cannot be compiled here due to the heterogeneity of EES. Furthermore, country-specific technical standards must be applied.</p>



Example AC 3-1

Assessment Criterion	Proof	Assessment	Comment
3-1 Dependency of remuneration on adherence with the savings guarantee	<p>Saving guarantee type 1: The reduction of remuneration must be, at least, commensurate with the level of non-attainment of a guaranteed energy savings.</p> <p>Saving guarantee type 2: The achieved savings will be shared between the EE service-provider and the client in a specific proportion</p>	On the basis of contractual terms that relate to the guarantee of energy savings	<p>Both types will lead to a differentiation with regards to the quality of the guarantee promise: In general, type 1 is preferable to clients, because the maximum level of payment is known up front.</p> <p>Under certain conditions (e.g. unfeasible conditions for M&V), however, type 1 saving guarantees are difficult to implement, or even not preferred by the client.</p>



Assessment criteria

QC 1	Adequate analysis
AC 1-1	Agreement on the process of energy analysis pursuant to EN 16247-1
AC 1-2	Adequate data collection and analysis
AC 1-3	Adequacy of the derivation of recommended energy efficiency improvement (EEI) measures
QC 2	Quality of implementation of technical energy efficiency improvement measures
AC 2-1	Performance of services in accordance with applicable standards, statutes and official permits
AC 2-2	On-schedule delivery
AC 2-3	Commissioning of services and documentation of services rendered
AC 2-4	Induction of users or operating personnel
AC 2-5	Ensuring the functionality of newly installed facilities after the end of the Contract
QC 3	Savings guarantee
AC 3-1	Dependency of remuneration on adherence with the savings guarantee
AC 3-2	Guaranteed savings achieved (only applicable to saving guarantee type 1)
AC 3-3	Adequate intervals for the verification of compliance with guarantee promise
QC 4	Verification of energy savings
AC 4-1	Application of a standardized method for the calculation of energy-savings
AC 4-2	Selection of the most appropriate approach to the verification of energy savings
AC 4-3	Clear definition of the baseline (reference consumption)
AC 4-4	Clear definition of the basis of adjustment of the energy savings calculation
AC 4-5	Transparency and agreement of M&V processes and related responsibilities



Assessment criteria

QC 5	Value-retention and maintenance
AC 5-1	Compliance with the required system availability
AC 5-2	Rapid troubleshooting in case of malfunctions of technical systems
AC 5-3	Functionality of facility at the end of the Contract
AC 5-4	Clear definition of responsibilities of the service provider with respect to maintenance and repair
QC 6	Communication between the EES provider and the client
AC 6-1	Disclosure of contact persons
AC 6-2	Agreement on accessibility of data and data exchange (in both directions)
AC 6-3	Capturing and continual updating of all EEI measures taken by the EES provider
AC 6-4	Organisational measures for committing internal operating personnel
QC 7	Compliance with users' comfort requirements
AC 7-1	Definition of users' requirements (including regular review)
AC 7-2	Regular verification of compliance with physical comfort parameters
AC 7-3	Assessment of users' satisfaction
QC 8	Information and motivation of users
AC 8-1	Development of a concept for the motivation of users
AC 8-2	Establishment of a suggestion scheme for clients to improve energy efficiency
AC 8-3	Provision of action-oriented information on the subject of energy efficiency



QC 9	Comprehensible contractual stipulations for the definition of specific regulatory requirements
AC 9-1	Ownership transfer
AC 9-2	Handling of energy price risk
AC 9-3	Insurances
AC 9-4	Exit regulations
AC 9-5	Legal succession
AC 9-6	Unhindered access rights and right of access
AC 9-7	Permissibility of different types of financing (Cession, Leasing, Forfeiting)
AC 9-8	Regulation on intellectual property rights

In total 9 Quality Criteria with 38 Assessment Criteria along the value chain of EES





Benefits of Financial Quality Criteria

✓ What are quality criteria for?

- Establishment of a common understanding between service providers, clients and financial institutions for the assessment of the bankability of energy efficiency projects

✓ How can they help me?

Client

- Support in finding financing possibilities
- Establishment of tender documents and service contracts with relevant information

Provider

- Support in providing financial information about projects to financial institutions
- Establishment of service contracts with relevant information
- Support in finding financing possibilities

Financial Institutions

- Receiving relevant information about energy efficiency projects
- Better understanding the value of energy efficiency projects



Financial Quality Criteria

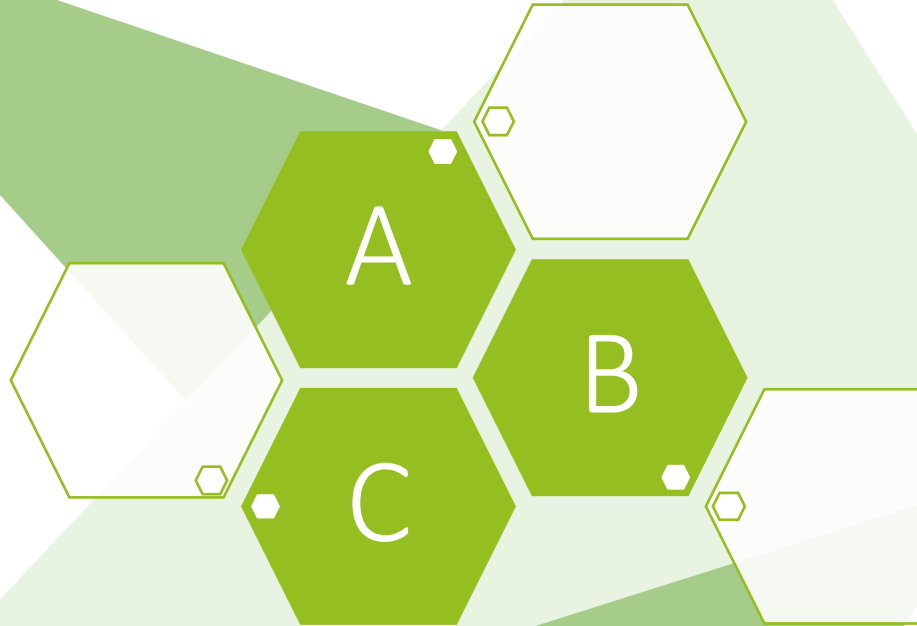


EES Projects



Innovation, best available technology,
COP, η , ρ , λ CO₂,
GWh/a, kW, ...

Different perceptions of different stakeholders



€, €, €, €, €



Main financial instruments for EES

One of the main barriers of EES projects = Financing

- ☑ Loan financing
- ☑ Leasing financing
- ☑ Cession
- ☑ Forfeiting of contracting rates

- ☑ Further relevant aspects for the selection of financing instruments from the perspective of the client
 - Cost of financing
 - Legal aspects
 - Collateral/Securities
 - Taxation
 - Balance sheet and accounting aspects
 - Management expenditures/Transaction costs



Financial Quality Criteria

☑ Aspects for selection of financial quality criteria (FQC)

- How can the future **cash flows** be predicted and secured?
- **Collateralisation** of technical equipment (assets)
- What will happen in the case of **failure or bankruptcy of ESCO** and what can be done to reduce the risk?
- What will happen in the **case of failure or bankruptcy of client** where the equipment is installed?

☑ **FQC 1:** Quality of cash flow prediction

☑ **FQC 2:** Incentive structure for cash flow generation

☑ **FQC 3:** Exploitation of cash flows

☑ **FQC 4:** Value and exploitation of assets (technical equipment)

☑ **FQC 5:** Non-energy benefits of EES projects



FQC 1: Quality of cash flow prediction

- ✓ Cash flows are the result of energy savings
 - main source for repayment
 - energy savings cannot be measured
 - energy efficiency \neq energy savings
 - agreement of baseline
 - selection and agreement on adjustment factors
 - measurement and verification (M&V) concept

- ✓ Criteria
 - M&V concept
 - Baseline and savings calculation
 - Scenarios
 - Best available technology



FQC 2: Incentive structure for cash flow generation

- ✔ Incentives for cash flows generation reduce the risk
 - contractual stipulation regarding the savings guarantee
 - co-operation of the client is necessary
 - well-balanced risk sharing

- ✔ Criteria
 - Risk sharing approach
 - Remuneration of EES provider depends on savings guarantee
 - Incentivising stipulations at the client's side



FQC 3: Exploitation of cash flows

- ☑ Ensuring payments for the case of economic difficulties of contracting parties or changes in legal status
 - ensuring that project implementation is continued
 - facility is sold
 - prior access to the cash flows for FIs

- ☑ Criteria
 - Preventing approach regarding exit-strategies
 - Replacement of EE provider
 - Assignment right of the EES provider (incl. cession, forfeiting, securitization)
 - Stipulations for suitable compensation and liquidated damages in case of early termination of the contract by EES client
 - Cash flow exploitation in case of sale of facility



FQC 4: Value and exploitation of assets (technical equipment)

- ✓ Parts of the equipment can be used as collateral
 - technical exploitation: assets can be removed
 - economic exploitation: assets can be sold
 - legal exploitation: ownership of remaining assets

- ✓ Criteria
 - Value of removeable parts of technical equipment is clearly defined in the project documentation (serial ID number)
 - Technical equipment can be used for different processes and branches
 - Contract defines ownership



FQC 5: Non-energy benefits of EES project

- o ✓ Also known as multiple-benefits
- o ✓ Benefits from the client's perspective
 - increased work productivity
 - reduced dependency of energy tariffs
 - sales premium
- o ✓ Criteria
 - List of non-energy benefits is available and classified
 - Quantification and monetarisation of non-energy benefits



FQC vs. different aspects of financing

	Cash Flows	Collateralisation of technical equipment	Default or bankruptcy of EES provider	Failure or bankruptcy of EES client
FQC 1. Quality of Cash Flow Prediction	++	O	+	+
FQC 2. Incentive Structure for Cash Flow Generation	++	O	++	O
FQC 3. Exploitation of Cash Flows	++	++	++	O
FQC 4. Value and Exploitation of Assets (Technical Equipment)	+	++	++	++
FGQ5. Non-energy Benefits of EES Project	O	O	+	++

The table shows the FQC that cover the different aspects of financing EES projects where ++ major aspects covered by the FQC; + some aspects covered by the FQC; o minor or no aspects covered by the FQC



FQC vs. Financing products

	Loan financing	Leasing financing	Cession	Forfeiting of contracting rates
FQC 1. Quality of Cash Flow Prediction	++	++	+	++
FQC 2. Incentive Structure for Cash Flow Generation	++	++	++	++
FQC 3. Exploitation of Cash Flows	++	++	++	++
FQC 4. Value and Exploitation of Assets (Technical Equipment)	+	++		
FGQ 5. Non-energy Benefits of EES Project	++	+		+

The table shows the relevance of the FQCs for different Financing products, where ++ FQC is very important; + FQC is important; o FQC is neutral or irrelevant for the specific financing product



Procurement handbook



Contents of Procurement Handbook

Introduction: objectives of the handbook

Legislative framework for EES procurement

- EU procurement directives and implications for choice of procurement procedures for EPC and ESC

Evaluation of EES criteria in EPC procurement

- Procurement procedure according to EU legislation
- Role of facilitator
- Evaluation of criteria in the procurement process
- Key EES quality criteria for procurement process

Evaluation of EES criteria in ESC Procurement

- Procurement procedure according to EU legislation
- Role of facilitator
- Evaluation of criteria in the procurement process
- Key EES quality criteria for procurement process



Objectives of Procurement Handbook

- ✔ handbook provides guidance to stimulate the application of EES quality criteria within the **procurement phase** of a project
- ✔ Target groups:
 - to the demand side of EES (public and private clients and project facilitators)
 - to the supply side of EES (energy service providers)
- ✔ Implementation of the EES quality criteria into the **public procurement** process is needed
 - to replace the use of **lowest investment cost criteria** as a sole criteria
 - wider use of the criteria would increase the **reflection of quality** and future energy consumption in investment decisions
 - EES providers and clients face **unclear legislative and administrative rules** for public organisations
 - decision-makers in the public sector **fear the complexity of the evaluation** process or claims that the process conflicts with the legal requirements



Procedure for procuring EPC

- ✓ The core requirement: **competitive bidding** prior to the contract signature - negotiation between contracting authority and tenderers is allowed
- ✓ Recommended: **negotiated procedure with prior call for competition**:
 - Client gets opportunity to choose the best project design, which complies with his activities and needs
 - Tenders (i.e. bids submitted by ESCOs) can be adjusted/improved during the negotiations with tenderers (bidders) within the award procedure



Role of EPC facilitators

✓ Project development phase:

- preliminary financial and technical analyses
- comparison of different options, supporting client in “make or buy” decisions
- providing information on the procedures for clients and stakeholders
- project pre-structuring
- selection and adaption of ESCO business models
- financial pre-structuring

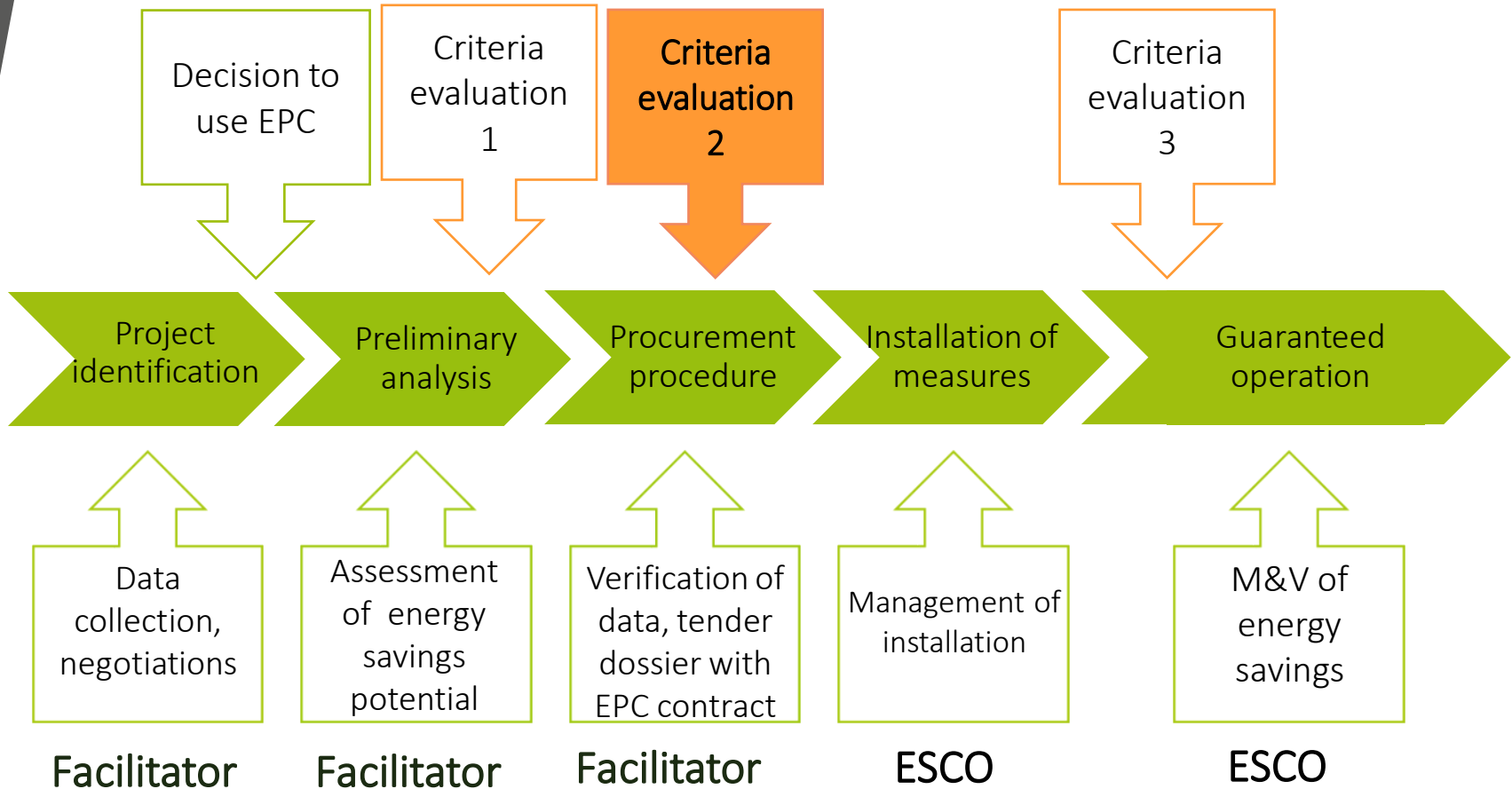
✓ Project procurement phase:

- selection of procurement procedure
- definition of ESCO qualifications and selection criteria
- drafting of tender dossier
- ESCO contract design
- Negotiations with the EPC providers and selection of best tender



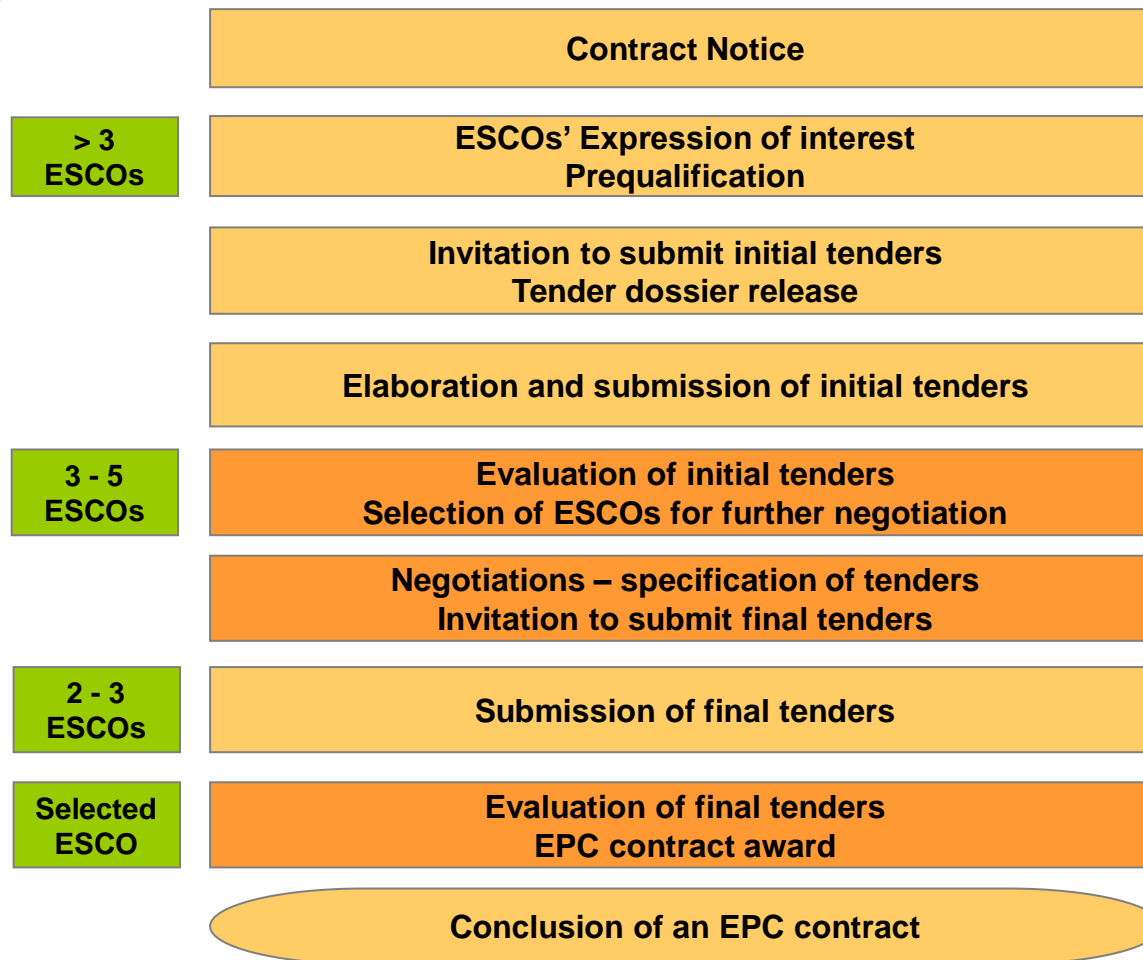
Exemplary criteria evaluation in EPC process

Client





Evaluation in negotiated procedure with prior call for competition for EPC



Procurement Procedure:

- Organized by EPC facilitator (or the client if there is no facilitator)
- Managed by Evaluation Commission nominated by the client



Evaluation in negotiated procedure with prior call for competition for EPC

- **Evaluation of initial tenders**
 - on the basis of the **evaluation of initial tenders**, the ESCOs suitable for further negotiation are selected
- **Negotiations with tenderers**
 - at least one round of negotiations, usually 2-3 rounds
 - in each round there is a new specification of tenders – contractor asks for new additional details of the solutions described in tenders – **which are evaluated in the next round**
 - invitation to submit final tenders
- **Evaluation of final tenders**



Example of evaluation criteria for EPC currently in use in the Czech Republic

Criteria	Weight
1) Amount of guaranteed savings in all forms of energy during the contractual period (in physical or financial units)	45%
2) Bid price i.e. the total price to be paid by the contracting entity to ESCO for the entire duration of the contract	35%
3) Quality of the technical design and project parameters 3a) completeness and clarity of description of measures (10 %) 3b) correctness of savings estimation (70 %) 3c) appropriate costs (relate to market prices) (10 %) 3d) other benefits: life-time, reliability, compliance with the operational requirements etc. (10%)	20%



Thank you

Daniela Bachner, e7 Energie Markt Analyse GmbH



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