

Introduction to Energy Performance Contracting & Structure of an Energy Performance Contract

For the Irish Universities

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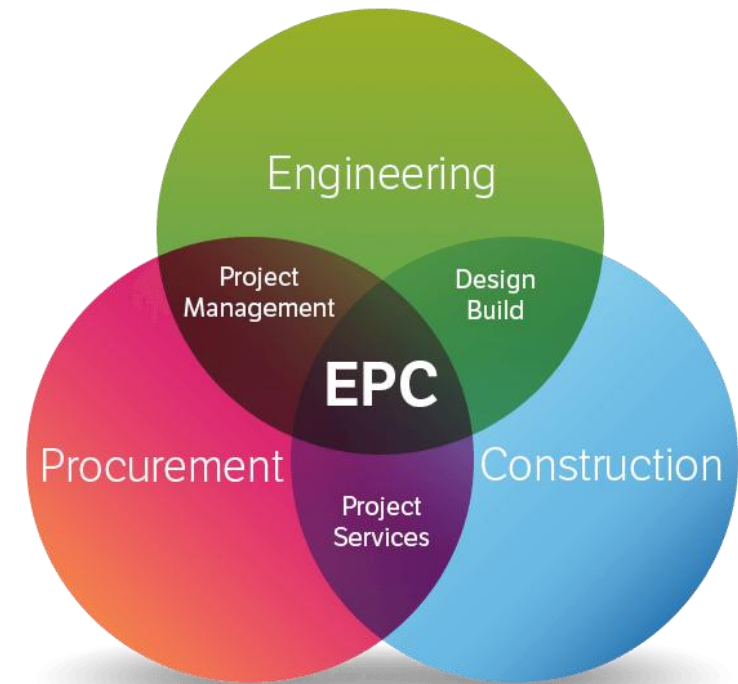


Summary

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Introduction to Energy Performance Contracting

The Directive 2006/32/EC of the European Parliament defines **Energy Performance Contracting** as “a contractual arrangement between the beneficiary and the provider (normally an Energy Service Company) of an energy efficiency improvement measure, where investments in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement”.



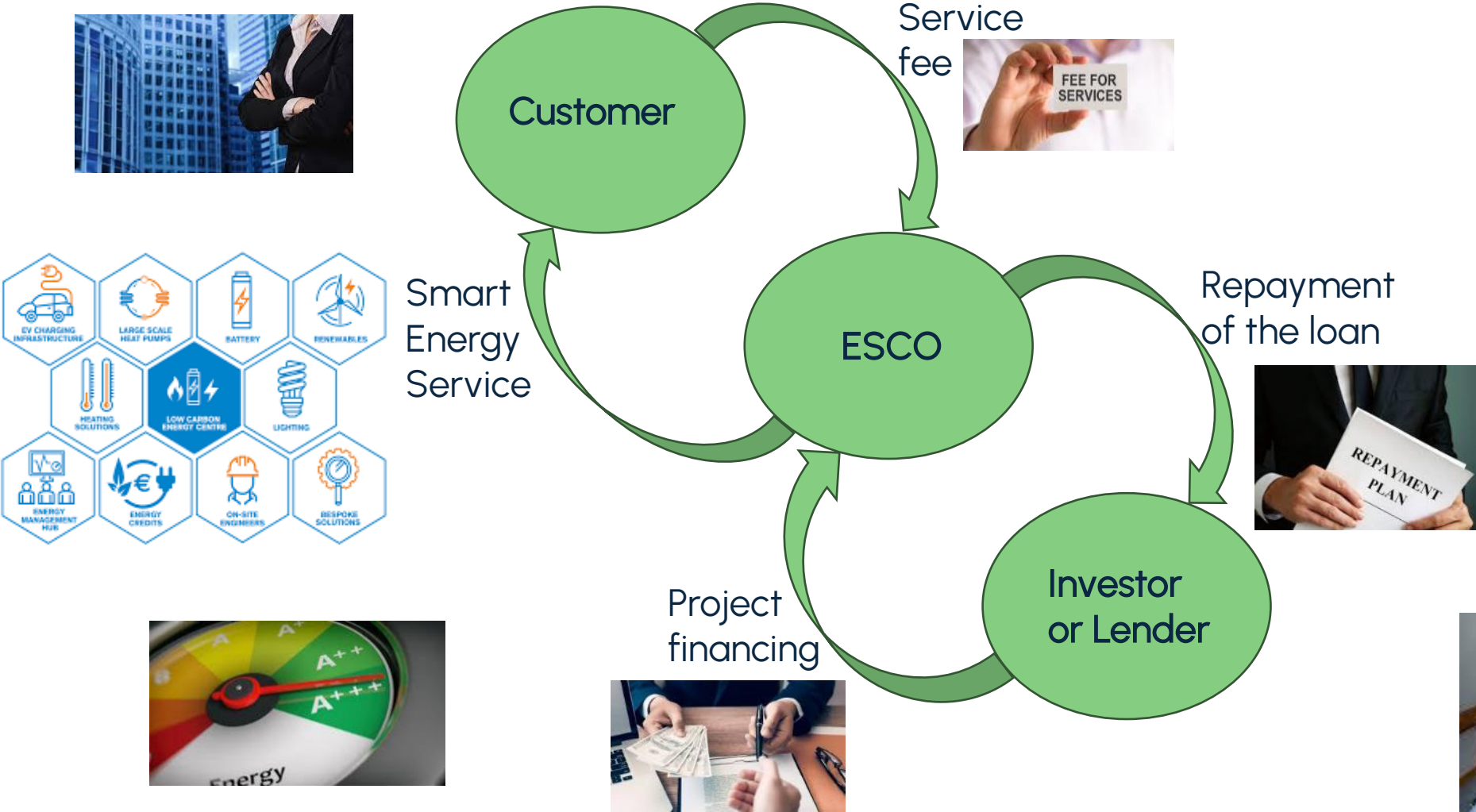
Energy Service Companies

An ESCO is a Company that provides energy services such as energy efficiency or renewable energy projects to its clients. Typically, an ESCO:

- Guarantees energy savings and/or energy cost reductions (performance guarantee).
- Receives a remuneration tied to the performances achieved.
- Provides finance, or assists to arrange finance, by providing a savings guarantee.
- Takes the responsibility for maintenance of the equipment and energy efficiency improvement measures installed.
- Provides staff training to ensure better system operation and control.



Relationships between Customer, ESCO and Investor/Lender




EPC VS Traditional Approach

“Traditional” **design-bid-build model** (also known as **design-tender**): the building owner bears all the risks:

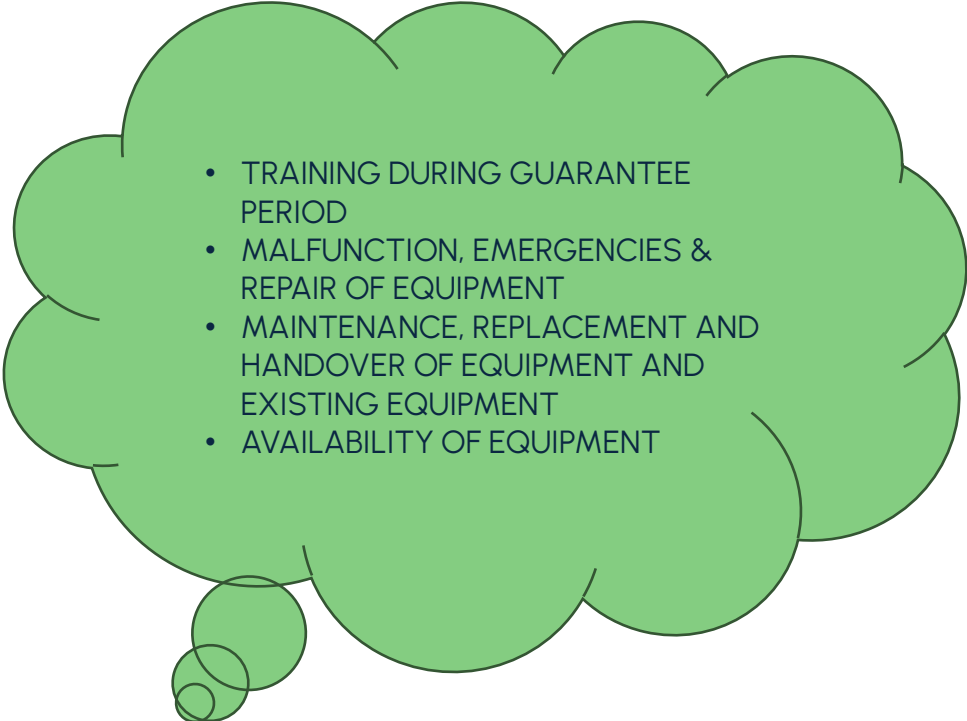
- possible **increase of the cost of the works**
- **technology risks** associated with the integration of the new equipment and measures within the existing building systems
- uncertainty about the **operational performance** of the installed energy efficiency measures.

EPC model: the ESCO manages all relationships with finance providers, energy suppliers, mechanical and electrical engineering consultants, technology suppliers, and installers. The client only needs to manage a **single contract** (the EPC) with a **single supplier** (the ESCO)

Structure of an Energy Performance Contract

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- THE WORKS
 - INTERIM PERIOD SAVINGS
 - DELAY AND LIQUIDATED DAMAGES
 - ENVIRONMENTAL CONDITIONS
 - ENVIRONMENTAL INCENTIVES
 - EXISTING EQUIPMENT
 - EQUIPMENT OWNERSHIP
 - EQUIPMENT WARRANTIES
 - ESCO WARRANTY
 - HAZARDOUS MATERIALS
 - TESTING AND COMMISSIONING
 - SUBSTANTIAL COMPLETION AND ACCEPTANCE OF THE WORKS

1. THE WORKS

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- TRAINING DURING GUARANTEE PERIOD
 - MALFUNCTION, EMERGENCIES & REPAIR OF EQUIPMENT
 - MAINTENANCE, REPLACEMENT AND HANDOVER OF EQUIPMENT AND EXISTING EQUIPMENT
 - AVAILABILITY OF EQUIPMENT

2. THE SERVICE

Structure of an Energy Performance Contract

- ADJUSTMENT OF VALUES FOR THE BASELINE ENERGY CONSUMPTION
- GUARANTEE
- ENERGY SAVINGS CALCULATION & PAYMENT

3. MEASUREMENT, VERIFICATION, GUARANTEE & PAYMENT

- VARIATIONS
- VALUE ENGINEERING
- OBLIGATIONS OF THE ESCO
- INTELLECTUAL PROPERTY RIGHTS
- LICENCES, PERMITS, APPROVALS & COORDINATION
- CLIENT REPRESENTATIVE
- INSURANCES
- TAX CLEARANCE CERTIFICATES IN RELATION TO PUBLIC SECTOR CONTRACTS
- LIMITATION ON LIABILITY & IDEMNITY
- FORCE MAJEURE
- SUSPENSION
- TERMINATION
- CONSEQUENCES OF TERMINATION
- OTHERS

4. MISCELLANEOUS

Energy Performance Contract: The Works

- The ESCO shall **carry out the Works** with all the skill, care, diligence, efficiency and professional conduct reasonably to be expected from a professional with the qualifications and experience.
- The ESCO shall **supervise and direct** the Works and shall ensure that the completed Works are fit for their intended purpose and shall be responsible for all construction and installation means, methods, techniques, sequences and procedures and for coordinating all elements of the Works.
- The ESCO shall **procure the Equipment** together with all **labour, personnel, tools, construction equipment and machinery, transportation** and other facilities and services necessary for the proper execution and completion of the Works.
- The ESCO shall complete the Works in accordance with the agreed **programme for the Works and the Design Documents** and shall comply with all applicable legislation, regulations, guidelines, by-laws, standards and codes of practice including, but not limited to the Construction Regulations and the Building Regulations.

Energy Performance Contracts: Existing Equipment & Equipment Ownership

- The **Existing Equipment** shall remain the **property of the Client** even if it is replaced or its operation made unnecessary as a result of the Works or Services.
- The ESCO shall advise the Client in writing where in the ESCO's opinion any of the **Existing Equipment** needs to be **replaced** or **removed** from the Premises giving reasons for such replacement or removal, and the Client shall at the earliest opportunity designate in writing to the ESCO which elements of the Existing Equipment (if any) should be replaced by ESCO and/or disposed of off-site from the Premises.
- **Title to the Equipment** or any part thereof together with any materials, licenses, powers and privileges purchased and installed by the ESCO shall remain **vested in the ESCO**, but the Parties agree that the **Client** shall have the option to **purchase** the Equipment at the expiry of the Contractual Agreement either for €1 or the current market value of the Equipment.
- Title to the Equipment shall pass to the Client immediately upon **payment to the ESCO** of the relevant amount.

Energy Performance Contracts: Equipment warranties

- All available **manufacturer warranties** relating to the Equipment (including warranties relating to spare parts used and installed when repair is necessitated by malfunction) are assigned by ESCO to the Client and delivered to them as soon as is practicable.
- The ESCO is granted the authority to make all necessary **manufacturer warranty claims** in relation to the Equipment on behalf of the Client as soon as reasonably possible following the discovery of a defect or fault.
- The Client may in writing direct the ESCO to **rectify and make good any defect or fault** in the Equipment and may include a stipulation in respect of a **reasonable and proportionate timeframe** within which a defect or fault must be rectified and made good by the ESCO and the ESCO shall rectify and make good any such defect or fault within the time stipulated.
- The ESCO shall **at its own expense** rectify and make good any defect or fault that appears in the Works or the Equipment..

Energy Performance Contracts: ESCO warranty

- The ESCO warrants and undertakes to the Client that materials and Equipment furnished will be of **good and merchantable quality, fit for purpose and new** (exceptions can be agreed) and that the Works will be free from faults and defects not inherent in the quality required or permitted.
- The ESCO warrants and undertakes that the Equipment and the Works will **conform with the requirements** of the Contractual Agreement and the Design Documents.
- The ESCO's warranty excludes remedy for damage or defect to the extent caused by:
 - **abuse by the Client** or any agent or employee of the Client;
 - **modifications** made or authorised by the Client and **not approved or executed by the ESCO** or Subcontractors;
 - **improper or insufficient maintenance** or operation by or on behalf of the Client that is not in accordance with the Contractual Agreement
 - **normal wear and tear** under normal usage.
- If required by the Client the ESCO shall furnish satisfactory evidence about the kind and quality of materials and Equipment and the recommended maintenance and if necessary shall update the Operations Manual accordingly.

Energy Performance Contracts: Testing and Commissioning

- When the Works are **nearing Substantial Completion** the ESCO shall notify the Client **no less than 7 (seven) days** in advance in writing of the **schedule for commissioning and testing** of the relevant part of the Works and/or Equipment and the Client and/or its nominee shall have the right to be present at any or all such tests conducted by the ESCO and/or manufacturers of the Equipment.
- The ESCO shall ensure that it supplies all necessary documents, information, suitably qualified and experienced personnel, power, consumables and instruments required to carry out the commissioning and tests. The ESCO shall comply with all and any protocols as to testing and commissioning agreed with the Client from time to time.
- The ESCO shall correct any deficiencies in the Works and/or the Equipment that may be observed during the commissioning and testing procedures.
- The ESCO shall deliver **a written report** on the **testing and commissioning** of the Works and the Equipment to the Client and shall provide the Client with all appropriate testing documentation (including testing and commissioning certificates) along with all **operations and maintenance documentation** for the Equipment to the Client on or before Substantial Completion of the Works.

Energy Performance Contracts: Substantial Completion and Acceptance of the Works

- If the ESCO fails to achieve **Substantial Completion** of the Works by the Agreed Date the Client shall have the right to terminate the Contractual Agreement.
- If the Client agrees that the Works have achieved Substantial Completion it will accept the Works by **signing the certificate of Substantial Completion and Snag List** and returning both to the ESCO specifying the Acceptance Date within 10 (ten) business days and the ESCO shall promptly proceed to complete all items on the Snag List.
- If the Client does not agree that the Works have achieved Substantial Completion and/or that the Snag List is not complete or correct then the Client shall notify the ESCO in **writing of any discrepancies** within 10 (ten) business days.
- To the extent the ESCO does not dispute the discrepancies raised by the Client the ESCO shall:
 - promptly and diligently **correct the Works** to conform to the description of the Works and resubmit the certificate of Substantial Completion to the Client;
 - **promptly complete all items** on the Snag List.
- If the ESCO disagrees with any or all of the discrepancies raised by the Client, the ESCO shall notify the Client of a **dispute** which shall be referred to **expert determination**.

Energy Performance Contracts: The Services / Training

- The ESCO shall no later than 10 (ten) days following Substantial Completion of the Works provide **training to the Client's staff** on the proper **operation and maintenance procedures** for the Works, the Equipment and/or Existing Equipment including any software replacement or upgrade.
- The training shall take place at the Premises at a time to be agreed by the Parties acting reasonably and the costs of such training shall be borne by the ESCO.
- If the ESCO adds to, changes, replaces, modifies, upgrades or alters any of the Equipment and/or the Existing Equipment then it shall as soon as possible and at its own expense provide all **necessary training** to the Client's staff on such **addition, change, replacement, modification, upgrade or alteration** to the Equipment and/or Existing Equipment including any upgraded software.

Energy Performance Contracts: Maintenance and Replacement of Equipment

- The ESCO shall be responsible for the **maintenance and upkeep** of the Equipment [and the Existing Equipment] and is obliged to carry out any technical, administrative and management measures during the lifecycle of any item of the Equipment [and/or the Existing Equipment] to **maintain or restore** its operative condition.
- The Client shall incur no cost for the maintenance, servicing or adjustment of the Equipment or the Existing Equipment provided however that when such need arises due to the **negligence or misconduct** of the Client or any employee or other agent of the Client then the Client shall be **liable for the cost of such maintenance**, servicing or adjustment.
- Upon the **expiry** of the Term of the Contractual Agreement the ESCO shall **hand over** the Equipment and Existing Equipment in a condition which can be regarded as **secure and operative** taking account of normal wear and tear.
- In addition to its maintenance obligations under this Agreement the ESCO undertakes to **replace** any item of Equipment and/or Existing Equipment at its own expense **upon expiry of its life cycle** during the Term of the Contractual Agreement.

Energy Performance Contracts: Measurement & Verification - Baseline

- In the calculation of Energy Savings the **Baseline** shall remain constant for the duration of the Contractual Agreement, except in circumstances where there is:
 - a change in the **use** of all or part of the Premises;
 - a change in the **occupancy** rate of the Premises;
 - a **modification to or enlargement** of the Premises;
 - implementation of **new standards** and/or any kind of regulation governing **lighting, temperature, relative humidity or ventilation** conditions in the Premises;
 - additional **enhancements to or reduction of the scope of the Works** requested by the Client which differ from those proposed in the Investment Grade Audit and Design Documents;
 - **replacement or repair** of the Equipment and/or Existing Equipment in order to **improve its efficiency or functionality**; or
 - **additional work** requested in writing by the Client that results in an increase or decrease in the amount of Energy used within the Premises.
- If the Baseline is adjusted the ESCO shall provide the Client with a **Baseline Adjustment Notice** summarising the new values within 20 (twenty) days.
- If the Client advises the ESCO Representative that it does not approve the adjusted Baseline all payments to be made by the Client shall continue to be calculated on the basis of the values that existed immediately prior to the Baseline Adjustment Notice and the matter shall be referred to expert determination.

Energy Performance Contracts: Measurement & Verification - Payments

- The Client will continue to make **payments** directly to **any and all suppliers for energy supplied** or received at the Premises.
- From the Commencement Date the Client shall pay the ESCO the **Monthly Payment** which shall be payable by the Client within 15 days of the end of the calendar month to which the payment relates.
- Energy Savings shall be **measured and/or calculated by the ESCO** and **approved by the Client** for each **Reconciliation Period** during the Guarantee Period.
- Within [5 (five) days] after the end of each Reconciliation Period the ESCO will send a **measurement and verification report** to the Client detailing the Energy Savings for each energy type achieved at the Premises during that Reconciliation Period together with a valid VAT invoice.
- Where the Energy Savings achieved at the Premises for a particular energy type for a Reconciliation Period are less than the Guarantee the ESCO shall pay the **Performance Guarantee Payment** to the Client for that Reconciliation Period.
- Where the Energy Savings achieved at the Premises for a particular energy type for a Reconciliation Period are **equal to or greater than the Guarantee but less than or equal to the Shared Savings Threshold** the ESCO will be entitled to 100% of the excess of such Energy Savings over and above the Guarantee.
- Where the amount the ESCO is entitled to is **less than the aggregate amount of the Monthly Payments made by the Client** during the relevant Reconciliation Period the **ESCO shall repay the Client the difference** between the two amounts.
- Where the amount the ESCO is entitled to is **greater** than the aggregate amount of the Monthly Payments made by the Client during the relevant Reconciliation Period the **Client shall only be obliged to pay the ESCO the difference** between the two amounts.
- Where the Energy Savings achieved at the Premises for a particular energy type calculated for a Reconciliation Period exceed the Shared Savings Threshold the ESCO will be entitled to an amount equal to:
 - 100% of the excess of such Energy Savings for that energy type over and above the Guarantee up to the Shared Savings Threshold calculated at the Unit Price; and
 - [50] % of the excess of such Energy Savings for that energy type over and above the Shared Savings Threshold for the relevant Reconciliation Period calculated at the relevant Unit Price.

Role of EPC Facilitator

Energy Service Company



Energy Audit



System design



Installation and Commissioning



Measurement & Verification



Maintenance Service

EPC Facilitator



Assistance for project financing



Procurement management

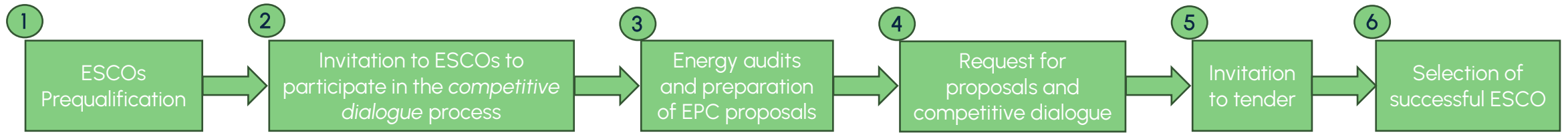


EPC contract management



Building owner

Tendering Process for EPC Procurement



1. The ESCOs prequalification process consists in the shortlisting of the ESCOs considering requirements for the **legal status**, **financial standing** and **previous experience** of ESCOs.
2. The ESCOs that passed the prequalification process are invited to participate in the competitive dialogue process, informed about the **award criteria**, and are given the **Technical File** and **Baseline Data** previously prepared by the client. Moreover, they will also be informed of the **technical and financial requirements** of the client and asked to visit each site to survey the buildings and gather additional data about the sites.
3. The ESCOs survey the buildings and prepare an **Investment Grade Audit** and an **EPC project proposal**, detailing the proposed works that will be carried out, the suggested measures, the guaranteed energy and cost savings, and total project cost.
4. The procuring body issues a **request for proposals**, inviting the ESCOs to submit their EPC proposals based on their individual IGA findings. During the competitive dialogue process, each invited ESCO presents the results of their IGA and their EPC proposal to a panel made up of representatives from the estates, finance, procurement and legal teams from the procuring body.
5. The procuring body develops and issues an **Invitation to Tender** (ITT) which includes the final contract that procurement body and ESCO are expected to sign after an ESCO has been selected and specifies the deadline for receipt of tenders, which will be typically set at 30 days after the ITT is issued.
6. Each received tender document is then evaluated based on the criteria set out in the ITT document by the procuring body (with possible assistance from the EPC facilitator) and the successful ESCO is selected.

The EasyPro Project

- The EasyPro project – Easy Procurement of Energy Performance Contracts is developing an innovative EPC facilitation service that will be offered free of charge to four Irish Universities (University College Cork, Technological University Dublin, Dublin City University, Maynooth University).
- EasyPro's main objective is to assist the procurement, legal, finance and estates teams at the four Irish Universities with the **EPC procurement process**, establishing a **framework of ESCOs** for the delivery of EPC contracts and selecting contractors to deliver the energy efficiency projects through a **competitive dialogue process**. Moreover, EasyPro can carry out **investor matchmaking** between funds and projects planned at the four Universities and will close **financing agreements** for the agreed project bundles.
- Please reach out to **Luciano De Tommasi**, International Energy Research Centre, at luciano.detommasi@ierc.ie if you wish to receive further information.



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