BASE

*Driving investment in climate solutions*

REQUEST FOR QUOTATION FOR SERVICES

ENERGY SAVINGS INSURANCE INDONESIA

**VALIDATION SERVICES AND ADAPTATION OF VALIDATION PROCEDURES**

## A. SUMMARY

The Basel Agency for Sustainable Energy (BASE) is seeking proposals from qualified firms with expertise in third-party or independent validation services to support the implementation of the Energy Savings Insurance (ESI) Indonesia project. This initiative, funded by the UK Partnering for Accelerated Climate Transitions (UK PACT) programme, is designed to stimulate private-sector investment in energy efficiency by deploying a structured model that integrates performance-based contracts, energy savings insurance, and independent validation. The independent validation services—which are the focus of this request—play a critical role in verifying projected and actual energy savings and ensuring trust among SMEs, technology providers, financial institutions, and insurers.

Interested firms are invited to submit their technical and financial proposals electronically by 12:00 PM CET on 1st September 2025. Detailed instructions for submission are provided in Section F of this document.

## B. PROJECT BACKGROUND AND OBJECTIVES

In April 2025, the Basel Agency for Sustainable Energy (BASE), with funding from the UK Partnering for Accelerated Climate Transitions (UK PACT) programme, launched the Energy Savings Insurance (ESI) Indonesia project. This 18-month initiative is being implemented in close partnership with the ASEAN Centre for Energy (ACE), which serves as BASE's local implementation partner in Indonesia.

The ESI model is designed to catalyse investment in energy efficiency (EE) by de-risking EE projects for small and medium-sized enterprises (SMEs) and facilitating access to finance and insurance. It provides a structured and integrated approach combining:

- Standardised contracts between technology providers and clients;
- Energy savings insurance that guarantees performance;
- Independent technical validation of projected and realised savings;
- Facilitation of access to finance through local financial institutions.

These components work together to build trust and accountability among key stakeholders, reduce credit risk, and encourage wider adoption of EE technologies.

Originally developed by BASE and successfully implemented in Colombia and Mexico, the ESI model has since been replicated in multiple countries across Latin America, Africa, and Asia. It has also been implemented in Spain, Italy, and Portugal under the brand GoSafe with ESI. The

model has been recognised by the Global Innovation Lab for Climate Finance as one of the most promising instruments to mobilise private sector investment in EE and is featured in international resources such as the G20 Energy Efficiency Investment Toolkit and the Swiss Sustainable Finance Compendium.

**ESI Model Components**

- Standardised contract[1]**:** A simplified agreement that clearly outlines the responsibilities of technology providers and clients, including the energy savings guarantee.
- Energy Savings Insurance: A third-party insurance product that protects clients in case the technology provider fails to deliver the guaranteed energy savings.
- Independent Validation: A neutral technical validation entity verifies energy savings projections, project installation, and annual performance reports, and acts as an arbitrator in case of disputes.
- Access to Finance: Financial institutions benefit from reduced borrower risk, enabling them to provide credit with improved terms to SMEs investing in EE solutions.

**Preliminary Market Projections**

A preliminary market assessment conducted under the first phase of the project—currently being led by ACE—is identifying significant potential for ESI-supported EE investments in Indonesia. Early estimates suggest:

- The model could support investments in 77 pilot SME projects, mobilising approximately GBP 17 million in EE-related capital in the coming three years.
- Over a 10-year period, projected impacts include 186,087 MWh of energy savings and 108,199 $tCO_2e$ emissions reductions.
- The long-term potential includes mobilising over GBP 1.5 billion, supporting 6,786 SMEs, saving 4.48 million MWh, and avoiding 2.60 million $tCO_2e$.

These figures are being further validated through an in-depth **market study** that is currently underway.

BASE is a Swiss non-profit foundation and a specialised partner of the United Nations Environment Programme (UNEP). Headquartered in Basel, Switzerland, BASE works globally to mobilise investment in sustainable energy and climate solutions.

The ASEAN Centre for Energy (ACE) is an intergovernmental organisation that represents the ten ASEAN Member States in energy matters. Based in Jakarta, ACE plays a central role in shaping regional energy policy, promoting energy cooperation, and supporting the implementation of sustainable energy initiatives across Southeast Asia. As BASE's local implementation partner, ACE brings deep regional expertise, strong government relationships, and technical capacity to the successful delivery of the ESI Indonesia project.

[1] The standardised contract is currently being legally adapted to the Indonesian context, but it is not expected that they will differ much from the English version of the contract provided as a complementary information with this ToR.

## C. SCOPE OF WORK

The Basel Agency for Sustainable Energy (BASE) is seeking the services of a neutral, technically qualified, and experienced validation entity to support the implementation of the Energy Savings Insurance (ESI) model in Indonesia. Specifically, the selected firm will be responsible for:

- Adapting the existing validation procedures developed under previous ESI programmes in Europe (Spain, Italy, Portugal, Croatia, Greece, and Slovakia) to the Indonesian regulatory and market context. We estimate that the main task within this work package will be translation, and we do not expect the adaptation to the Indonesian context to involve a significant workload or require the development of new methodologies.
- Delivering third-party validation services for energy efficiency (EE) projects in Indonesia, in accordance with the adapted procedures. To the extent that we gain access to a pipeline of energy efficiency projects during the course of the project, this work package will become the most relevant and active component of the services requested.

The validation entity will serve as a key implementation partner, helping to build confidence and credibility among SMEs, technology providers (TPs), financial institutions, and insurers. These services represent not only a core element of the ESI model, but also a new business opportunity for the selected entity in a growing EE market.

**Key Responsibilities**

The scope of work under this Request for Quotation (RFQ) includes:

- Adapting technical procedures for project validation and arbitration based on documentation developed for ESI Europe.
- Participating in consultation meetings with stakeholders (TPs, FIs, insurers, public institutions) to gather feedback and ensure local relevance.
- Supporting a testing phase of three pilot projects: adapt procedures in real project scenarios.

The validation activities will follow the IPMVP standard and cover both refurbishment projects (with an existing baseline) and new installations. All EE projects validated under this model are required to include a monitoring system with a datalogger to track key performance parameters.

Detailed technical guidance is provided in the annexed materials, including:

- “General Validation Process and Requirements”
- “Methodology Handbooks” per technology

**Validation Workflow**

The validation process is divided into three stages:

| Validation Action | Purpose | Timing | Location |
|---|---|---|---|
| PPV – Project Proposal Validation | Verification of energy savings estimates in line with methodology handbooks and best practices. | Before project implementation | Desk-based |
| PIV – Project Installation Validation | Confirmation that the EE system has been installed as specified. | After installation, before commercial operation | On-site |
| PAV – Project Annual Validation | Review of -yearly performance data. Conducted only in case of performance concerns or disputes between the TP and the client. | At the end of each operating year | Desk-based (on-site if required) |

**Cost Considerations and Sustainability**

The ESI Indonesia project, as funded by UK PACT, aims to establish a cost-efficient and scalable model for energy efficiency validation that remains accessible to SMEs. Accordingly:

- The validation and arbitration procedures must be simple, standardised, and transparent to facilitate adoption and ensure consistency across projects.
- The cost of validation services should be proportional to the typical size of an EE project. It will be covered by the Technical Partner (TP) (who may transfer this cost to their clients)
- The selected validation entity will be expected to maintain affordable pricing structures, allowing for broad market uptake without undermining the economic viability of EE investments.

By streamlining procedures and ensuring cost-effectiveness, the validation mechanism will contribute to a sustainable market ecosystem, encouraging long-term adoption of the ESI model in Indonesia.

**Activities to be conducted by the selected validation entity:**

The selected validation entity will be responsible for adapting and delivering independent validation services as part of the implementation of the Energy Savings Insurance (ESI) model in Indonesia. The work will include technical review, stakeholder consultation, translation of materials, and contribution to arbitration procedures, all based on materials developed under previous ESI programmes in Europe.

In addition to the activities listed below, all bidders are required to submit a detailed pricing[2] structure for the following three core validation services:

- Project Proposal Validation (PPV)
- Project Installation Validation (PIV)
- Project Annual Validation (PAV)

## 1. ACTIVITY 1: PROVIDE INPUTS TO THE STANDARDISED ESI CONTRACT

The Standardised ESI Contract defines the legal and technical relationship between technology providers and clients, including the role of the validation entity. The selected validation firm will review the contract and submit comments or proposed amendments to ensure clarity and feasibility from the perspective of the validator.

- Deliverable 1: Annotated version of the Standardised ESI Contract with comments or suggestions to adapt the Contract to the local Indonesian context.

## 2. ACTIVITY 2: REVIEW AND ADAPT THE METHODOLOGIES AND FORMS OF THE EXISTING VALIDATION PROCESS.

The selected entity will adapt existing documentation from ESI Europe to the Indonesian context, including:

- The “General Validation Process and Requirements”
- Technology-specific “Methodology Handbooks”
- Validation forms and reporting templates

Materials provided in Annex A and Annex B serve as the baseline for this adaptation. Minor adjustments may be made on a project-specific basis, subject to validation entity approval. If new technologies gain market traction, the entity may be asked to support development of new methodologies.

- Deliverable 2a: Adapted “General Validation Process and Requirements”
- Deliverable 2b: Technology-specific Methodology Handbooks (English version)
- Deliverable 2c: Updated Validation Forms and Reports

## 3. ACTIVITY 3: TRANSLATE VALIDATION DOCUMENTATION INTO BAHASA INDONESIA

All validation-related materials must be made available in both English and Indonesian, using appropriate technical terminology. Translations should be delivered within two weeks of approval of the corresponding English version.

- Deliverable 3a: Indonesian translation of the General Validation Process and Requirements

[2] Note: The fees proposed for each validation activity must be submitted as part of the proposal and will be considered binding and incorporated into the service contract.
Any future adjustments to these fees will only be considered if the scope of work changes significantly, and must be requested in writing and approved by BASE in advance.

- Deliverable 3b: Indonesian translation of the Methodology Handbooks
- Deliverable 3c: Indonesian translation of the Validation Forms and Reports

**4. ACTIVITY 4: PARTICIPATE IN CONSULTATION WORKSHOPS WITH TECHNOLOGY PROVIDERS**

The validation entity will join up to three stakeholder consultation workshops coordinated by BASE and ACE. The purpose is to present the validation methodologies to technology providers and sector associations, collect feedback, and refine the procedures where needed. The entity will also prepare and present supporting materials, and may be invited to bilateral discussions with financial and insurance partners.

- Deliverable 4a: Participation in consultation workshops with supporting presentations (PPT)
- Deliverable 4b: Revised validation documents incorporating stakeholder feedback where applicable

**5. ACTIVITY 5: DRAFT THE VALIDATION SERVICES CONTRACT BETWEEN THE VALIDATION ENTITY AND TECHNOLOGY PROVIDERS**

The validation entity will prepare a contract template for use between the validation entity and technology providers, specifically adapted to the ESI validation process developed under this assignment. This template will cover the following validation services:

- Project Proposal Validation (PPV)
- Project Installation Validation (PIV)
- Optional First-Year Annual Validation (PAV)

For the pilot stage (see Activity 6), this contract will be signed between the Validation Entity and the technology provider but will not represent any cost for the technology provider, as these costs are included in the ESI pilot services package funded by BASE. After completion of the pilot stage, subsequent validation contracts between the entity and technology providers will apply the fees as defined in the binding pricing structure included in the validation entity's proposal.

- Deliverable 6: Validation Services Contract template for technology providers (covering PPV, PIV, and optional PAV), in English and Indonesian language

**6. ACTIVITY 6: EVALUATION OF PILOT PROJECTS IN INDONESIA**

The selected Validation Entity will be responsible for evaluating three pilot EE projects in Indonesia. These pilot cases will serve to test the implementation of the adapted ESI validation procedures and to familiarise all actors with the full process, from proposal validation to post-installation monitoring.

The services required for each pilot project include:

- TP Proposal Validation: Review of the technical and economic proposal prepared by the Technology Provider, including one or two clarification meetings as needed.

- Project Installation Validation: On-site visit to verify that the project was implemented according to the validated proposal.
- First-Year Annual Report Review: Validation of the energy performance data submitted after one year of operation.
- Stakeholder Support Meetings: Availability to hold up to two video calls or meetings per project with the technology provider and/or the final client.
    - The first meeting should serve to introduce the ESI model, explain the validation methodology, and clarify expectations.
    - The second meeting, if needed, should address any questions or doubts related to the validation process, savings calculation, or documentation requirements.

The cost of these services must be included in the proposal and should be aligned with the binding unit costs provided for PPV, PIV, and PAV activities (see fee submission requirements above).

For the purpose of preparing financial proposals, bidders should assume that all three pilot projects to be validated are located within the Greater Jakarta area. Costs should be estimated accordingly, reflecting any travel, logistics, or local mobilization costs relevant to activities associated with PPV, PIV, and PAV.

## 7. ACTIVITY 7: INTEGRATION OF ENERGY EFFICIENCY PROJECT DATA INTO THE ESI MANAGEMENT INFORMATION SYSTEM

The implementation of the ESI model involves the use of a centralised Management Information System (MIS). While MIS development is not part of this assignment, the Validation Entity must:

- Collaborate with the MIS team to integrate validation forms, checklists, and reports.
- Review the quality of the MIS interface translations to Indonesian
- Support the adaptations of the MIS needed for Indonesia.

Based on BASE's experience, the time dedication and effort required for these MIS tasks are low. Nonetheless, smooth and timely cooperation with the MIS developer is essential once validation templates are prepared.

**Additional considerations for the proposal.**

BASE will provide the selected Validation Entity with reference documentation developed under the ESI Europe project (implemented in Italy, Portugal, Spain, Slovakia, Greece, and Croatia), as listed in Annex A. These materials will serve as the primary technical and procedural foundation for adapting the validation components to the Indonesian context.

- Important: No major changes are anticipated when adapting the existing materials. This expectation should be reflected in the proposed budget and level of effort described in the financial proposal.

All procedures and methodologies must be adapted in alignment with relevant Indonesian laws and regulations. The development and finalisation of all validation-related elements should take place in close coordination with the BASE project team, as well as with local

stakeholders, including technology providers, insurance companies, and other relevant actors involved in EE project implementation.

To ensure consistency with the ESI model, the adapted validation process must be:

- Aligned with the ESI Standardised Contract; and
- Agreed upon by the partner insurance provider(s).

In our experience implementing the ESI model in other countries, it is not typically necessary to make significant changes to the validation procedures based on feedback from the insurance provider. However, the Validation Entity should be prepared to engage with the insurer and, if required, provide technical feedback and clarifications to support the integration of the validation process into the insurer's underwriting framework.

## B. DELIVERABLES/SPECIFIC OUTPUTS EXPECTED AND TIMING

The following table contains expected dates and timing for each activity and deliverable. This table is complemented with the ANNEX E Timeline.

| TASK/DELIVERABLE | TIMING |
|---|---|
| Virtual kick-off meeting to align on validation tasks, methodology, and implementation steps | Within 2 weeks of contract signature |
| Activity 1: Provide inputs to the Standardised ESI Contract<br>Deliverable 1: Annotated Standardised ESI Contract with comments | Within Month 1 |
| Activity 2: Review and adapt validation methodologies and forms<br>Deliverable 2a: General Validation Process and Requirements (English)<br>Deliverable 2b: Methodology Handbooks per technology (English)<br>Deliverable 2c: Validation forms and reports (English)<br><br>Each of Deliverables 2a, 2b, and 2c will be reviewed and approved independently in English before moving to translation | All by end of Month 2.5<br><br>Rolling approvals between Month 1–2.5 |
| Activity 3: Translate validation documentation into Bahasa Indonesia<br>Deliverable 4a: Translation of Deliverable 2a<br>Deliverable 4b: Translation of Deliverable 2b<br>Deliverable 4c: Translation of Deliverable 2c | Each translation due within 2 weeks of English approval<br>All translated documents completed by end of Month 3 |

| | |
|---|---|
| Activity 4: Participate in consultation workshops<br>Deliverable 5a: PPT presentations for workshops<br>Deliverable 5b: Revised documents incorporating stakeholder input, if needed | Workshops will take place when needed during the 18-month project.<br>Deliverable 5a to be submitted at least 1 week before each workshop.<br>Deliverable 5b due 2 weeks after each event (if applicable). |
| Activity 5: Draft the Validation Services Contract between the Validation Entity and Technology Providers<br>Deliverable 6: Contract template for PPV, PIV, and optional PAV | By the end of Month 3. To be ready before the workshops |
| Activity 6: Evaluation of pilot projects in Indonesia<br>Support for three pilot projects, including PPV, PIV, PAV and two stakeholder support meetings per project | Support will be provided as needed during the 18-month project timeframe, once materials are ready and based on project implementation schedule |
| Activity 7:MIS Collaboration (related to Activity 2 & 4)<br>No separate deliverable required – coordination and exchange with MIS team begins after Deliverables 2c/4c are completed | Interaction expected between Month 3 and Month 5 |

**E.COMPLIANCE UNDER THE UK PACT GRANT AGREEMENT**

As this assignment is funded under the UK Partnering for Accelerated Climate Transitions (UK PACT) programme, the selected Validation Entity will be required to comply with relevant compliance obligations under the grant agreement signed between BASE and Palladium International Ltd, acting on behalf of the Foreign, Commonwealth & Development Office (FCDO) of the UK Government.

These obligations will be formally incorporated into the service contract signed with the selected provider and include, but are not limited to:

- Business Integrity: Adherence to anti-corruption, anti-bribery, anti-fraud, and conflict of interest standards as outlined in Palladium's Business Partner Code of Conduct.
- Safeguarding and PSEAH: Implementation of appropriate policies and practices to prevent sexual exploitation, abuse and harassment, and protect vulnerable individuals.
- Data Protection and Confidentiality: Handling of personal and project-related data in a secure and compliant manner, in line with applicable data protection regulations.
- Visibility and Branding: Application of UK PACT visibility guidelines for relevant outputs, communications, and public-facing materials.
- Due Diligence and Audit: Cooperation with any due diligence checks or financial audits deemed necessary by BASE, Palladium or FCDO, both during the project and for the required records retention period.

By submitting a proposal, bidders acknowledge their understanding that these compliance obligations will form part of the future contractual agreement, and agree to engage constructively in any necessary verifications or documentation processes as part of contract finalization.

**F. SUBMISSION OF QUOTATION AND EVALUATION CRITERIA**

**Submission Deadline**
Proposals must be submitted in English by 1st September 2025, 12:00 PM CET.

**Submission Format**
Quotations should be submitted electronically in PDF format, with the subject line:
"Proposal – Validation Services for ESI Indonesia"

Please send your submission by email to:

- Pablo Oses – pablo.oses@energy-base.org
- Rebecca Botello – rebecca.botello@energy-base.org
- Daniel Magallón - daniel.magallon@energy-base.org

**Late submissions will not be considered.**

**Proposal Content**
**1. Technical Offer**
The technical offer must include the following:

- Proposed approach for delivering the activities and deliverables outlined in this RFQ
- Detailed work plan and timeline for completion of deliverables
- Relevant company experience in similar assignments
- Description of the proposed team, including roles, qualifications, and indication of which team members are locally based
- Any suggested improvements or clarifications to the proposed scope

**2. Financial Offer**
The financial offer must:

- Be denominated in GBP.
- Include a detailed breakdown of costs, structured as follows:

  **A. Core Validation Services (Binding Unit Costs, per project):**
  - Project Proposal Validation (PPV)
  - Project Installation Validation (PIV)
  - Project Annual Validation (PAV)

  **B. Fixed or Lump Sum Costs for ESI Model Adaptation Activities:**
  - Activity 1: Review of Standardised ESI Contract
  - Activity 2: Adaptation of validation methodologies and forms
  - Activity 3: Translation of materials into Bahasa Indonesia
  - Activity 4: Workshop preparation and participation
  - Activity 5: Preparation of the Validation Services Contract with TPs

– Activity 6: Support up to three pilot projects (specify assumptions, e.g., travel or working days, project validation fee)

**3. Evaluation Criteria**

| Criterion | Description | Weight (%) |
|---|---|---|
| **1. Total Validation Cost (Core and Adaptation Activities)** | Evaluation of the full financial proposal, including:<br>**A. Core Validation Services** (binding unit costs for PPV, PIV, and PAV); and<br>**B. Fixed or lump sum costs** for all other activities (e.g., methodology adaptation, translation, workshops, pilot support).<br>Proposals will be scored relative to the most economically advantageous bid. | **30%** |
| **2. Technical Quality and Approach** | Assesses the clarity, feasibility, and appropriateness of the proposed approach to deliver the requested services. Includes demonstrated understanding of the objectives, methodology, and deliverables, as well as **clear adherence to the Terms of Reference outlined in the RFQ**. Prior experience in similar assignments will also be considered. | **50%** |
| **3. Local Implementation Capacity** | Evaluates the bidder's ability to carry out key validation activities through **local presence**. Includes assessment of the Indonesian team's qualifications, roles, and delivery structure. Preference will be given to proposals that ensure cost-effective local execution, especially for on-site work. | **20%** |
| **Total** | | **100%** |

**VAT Exemption:**
Services provided under this RFQ are funded by the UK PACT programme and are exempt from VAT and similar taxes under the terms of the grant agreement. Therefore, financial proposals should be submitted exclusive of VAT[3]

[3] Note: unless legally required. If VAT must be included by law, clearly specify and justify this separately.

## ANNEX A – LIST OF EXISTING DOCUMENTS

The below table contains the list of the existing documents to be adapted:

| EXISTING DOCUMENTS TO BE TRANSLATED AND ADAPTED TO LOCAL CONTEXT | | | | | |
|---|---|---|---|---|---|
| **Nº** | **Document name** | **Final user of the document** | **Type of document** | **nº pages** | **Comments** |
| 1 | ESI General process and requirements | All users | Methodology Handbook | 28 | Manual describing the rationale of the ESI validation process |
| 2 | ESI Europe Methodology Handbook AA | Technology Provider and Final Client | Methodology Handbook | 22 | Manual describing the technology validation methodology |
| 3 | ESI Europe Methodology Handbook AC | Technology Provider and Final Client | Methodology Handbook | 18 | Manual describing the technology validation methodology |
| 4 | ESI Europe Methodology Handbook_BO | TP and Client | Methodology Handbook | 17 | Manual describing the technology validation methodology |
| 5 | ESI EuropeMethodology Handbook CO | TP and Client | Methodology Handbook | 19 | Manual describing the technology validation methodology |
| 6 | ESI Europe Methodology Handbook LI | TP and Client | Methodology Handbook | 19 | Manual describing the technology validation methodology |
| 7 | ESI Europe Methodology Handbook PV | TP and Client | Methodology Handbook | 20 | Manual describing the technology validation methodology |
| 8 | ESI Europe Methodology Handbook RF | TP and Client | Methodology Handbook | 19 | Manual describing the technology validation methodology |
| 9 | ESI Europe Methodology Handbook SW | TP and Client | Methodology Handbook | 22 | Manual describing the technology validation methodology |
| 10 | ESI Europe Methodology Handbook WF | TP and Client | Methodology Handbook | 16 | Manual describing the technology validation methodology |
| 11 | 02_PPV_TP_AA_rex | TP | Validation Form | 3 | Template for requesting the validation of a retrofit project |
| 12 | 02_PPV_TP_AC_new | TP | Validation Form | 3 | Template for requesting the validation of a new project |
| 13 | 02_PPV_TP_AC_rex | TP | Validation Form | 3 | Template for requesting the validation of a retrofit project |
| 14 | 02_PPV_TP_BO_new | TP | Validation Form | 3 | Template for requesting the validation of a new project |

| | | | | | |
|---|---|---|---|---|---|
| 15 | 02_PPV_TP_BO_rex | TP | Validation Form | 3 | Template for requesting the validation of a retrofit project |
| 16 | 02_PPV_TP_CG_new | TP | Validation Form | 3 | Template for requesting the validation of a new project |
| 17 | 02_PPV_TP_EM_new | TP | Validation Form | 3 | Template for requesting the validation of a new project |
| 18 | 02_PPV_TP_EM_rex | TP | Validation Form | 3 | Template for requesting the validation of a retrofit project |
| 19 | 02_PPV_TP_LI_new | TP | Validation Form | 3 | Template for requesting the validation of a new project |
| 20 | 02_PPV_TP_LI_rex | TP | Validation Form | 3 | Template for requesting the validation of a retrofit project |
| 21 | 02_PPV_TP_PV_new | TP | Validation Form | 2 | Template for requesting the validation of a new project |
| 22 | 02_PPV_TP_PV_new_rev01 | TP | Validation Form | 2 | Template for requesting the validation of a new project (alternative methodology) |
| 23 | 02_PPV_TP_RF_new | TP | Validation Form | 3 | Template for requesting the validation of a retrofit project |
| 24 | 02_PPV_TP_RF_rex | TP | Validation Form | 3 | Template for requesting the validation of a new project |
| 25 | 02_PPV_TP_SW_new | TP | Validation Form | 2 | Template for requesting the validation of a new project |
| 26 | 02_PPV_TP_genereic New Project | TP | Validation Form | 3 | Template for requesting the validation of a retrofit project that combines several technologies |
| 27 | 02_PPV_TP_genereic Extension | TP | Validation Form | 3 | Template for requesting the validation of a new project that combines several technologies |
| 28 | All technologies_PIV_TP | TP | Validation Form | 2 | Template for requesting the validation of the project installation. Template common to all technologies |
| 29 | All technologies_PAV_TP | TP | Report | 2 | Template for reporting the annual savings of the project. Template common to all technologies |
| 30 | All technologies_PPV_VE new | Validation Entity | Validation Form | 1 | Template for Project Proposal Validation. Template common to all technologies |

| | | | | | |
|---|---|---|---|---|---|
| 31 | All technologies_PIV_VE new | Validation Entity | Validation Form | 1 | Template for Project Installation Validation. Template common to all technologies |
| 32 | All technologies_PAV_VE new | Validation Entity | Validation Form | 1 | Template for Project Annual Validation. Template common to all technologies |

For the sake of clarity:

PPV Project Proposal Validation

PIV Project Installation Validation

PAV Project Annual Validation

TECHNOLOGIES:

AA Air Conditioning

AC Air Compressed

BO Boilers

CG Cogeneration

EM Electric Motors

LI LED lighting

PV Photovoltaics

RF Refrigerators

SW Solar Water heaters

WF Whole Facility (building)

Note: The installations/projects may be New or Retrofits to existing installations and documents need to adapt to both scenarios

# ANNEX B – FORMS AND PROCEDURES

This annex includes the following complete reference documents from the Annex A table, provided to give bidders a clearer understanding of their structure, format, and content.

- LED lighting Methodology Handbook (document 20, ESI Europe Methodology Handbook LI)
- Project Proposal validation request form to be filled in by TP (document 10, 02_PPV_TP_LI_new)
- Project Proposal validation form by Validation Entity (document 30, All technologies_PPV_VE new)
- Project Installation validation form to be filled in by TP (document 28, All technologies PIV TP)
- Project Installation validation form by Validation Entity (document 31, All technologies PIV VE)
- Project Annual Validation form to be filled in by TP (document 29, All technologies PIV TP)
- Project Annual Validation form by Validation Entity (document 32, All technologies PIV TP)

– LED lighting Methodology Handbook (document 20, ESI Europe Methodology Handbook LI)

# METHODOLOGY HANDBOOK
# LIGHTING

| Prepared: | Reviewed: | Confirmed: |
|---|---|---|
| VALIDATION ENTITY | ESI | ESI |
| 01.10.2020 | TT.MM.20JJ | TT.MM.20JJ |

# CONTENT

## 1 OBJECT

This manual is to explain a practical procedure for evaluating lighting systems to determine the potential savings of replacing inefficient equipment with high-efficiency equipment with technological improvements to reduce power consumption.

The final purpose of this manual is to evaluate technology providers (TP) and projects under the Energy Savings Insurance model.

## 2 USE OF THIS MANUAL

This manual complements the ESI Europe General Process and requirements, describing the steps that Client, technology provider and Validation entity must follow to validate the:

- Project proposal: This validation is focused on evaluating the committed Energy Savings value ($ES_{Committed}$) based on the specific project situation, calculated by the TP.
- Installation: The installation validation process includes a site visit with a visual inspection of the technology by the VE to verify that the correct technology has been installed.
- Annual savings: The annual savings validation process is focused on verifying the Actual Energy Savings ($ES_{Actual}$).

Each section is divided in the following subsections:

1. Abbreviations/Definitions used in each subsection.
2. Applicable standards: International/local regulations for the applicable system.
3. Methodology efficiency description. General description of calculations.
4. Measurements methodology: before retrofit: Required measurements and project documentation review for the proposal validation.
5. Project installation validation: Documentation review required for installation validation.
6. Measurement methodology: annual validation. Measurements required for annual savings validation.

## 3 DEFINITIONS / ABBREVIATIONS USED IN THIS DOCUMENT

The following definitions shall be considered in the document

| | |
| --- | --- |
| ESI | Energy Savings Insurance |
| Retrofit | Action or set of actions designed to improve efficiency or conserve energy or water o manage demand. |
| Before retrofit technology Indicator ($I_{br}$) | Indicator based on measurements performed by the TP (or from the Energy datalogger before retrofit). |
| After retrofit technology Indicator ($I_{ar}$) | Indicator based on real measurements from the Energy datalogger after retrofit. |
| Committed Energy Savings ($ES_{Committed}$) | Percentage value which representing the estimated savings per project, calculated by the TP for each technology using the ESI methodology. This value will be included in the ESI contract. |
| Actual Energy Savings ($ES_{Actual}$) | Percentage value calculated by using real data from the mandatory Energy datalogger and considering the Operation factors according to ESI contract. |
| Operation factors | The project performance factors define the estimated use of a project at the time of signing the ESI contract. These factors are used for the calculation of the Committed Energy Savings and the Actual Energy Savings. |
| APECA | The Australasian energy performance contracting association |
| FENERCOM | Madrid Energy Foundation. |
| EEI | Energy efficiency index |
| NIST | National Institute of Standards and Technology |
| TP | Technology provider |
| VE | Validation entity |
| CL | Client |
| BR | Before retrofit - Before new technology is installed on site. |
| AR | After retrofit - After new technology is installed on site. |
| PPV | Project proposal validation |
| PIV | Project installation validation |
| PAV | Project annual validation |

## 4 REFERENCES

The following reference documents have been taken in account for this procedure:

- International Performance Measurement and Verification Protocol (IPMVP)-Volume 1: Concepts and Options for Determining Energy and Water Savings.
- APECA (2004), A best practice guide to measurement and verification of energy savings. Australian government,
- FENERCOM (2011), “Guía para la evaluación y seguimiento de ahorros en contratos de Servicios energéticos”. Comunidad del Madrid 2011
- ASHRAE (2014) Guideline 14-2014 MEASUREMENT OF ENERGY, DEMAND, AND WATER SAVINGS
- "Atlas of Solar Radiation in Spain using data from the Climate SAF EUMETSAT ", published in 2012 by the State Meteorological Agency.

## 5 RESPONSIBILITIES

The responsibilities of each party, regarding this procedure, is described below. As general rule The TP and VE team shall have members that have responsibility and authority to carry out these functions;

- Have background, experience, and recognized abilities to perform the assessment activities, data analysis, and report preparation.
- Be familiar with operating and maintenance practices for the selected equipment.

| Validation step | Responsibilities | | | Subsection |
|---|---|---|---|---|
| | TP | CL | VE | |
| Project Proposal validation (PPV) | • Perform measurements on previous technology with calibrated[1] equipment.<br>• Calculate project savings ($ES_{Committed}$)<br>• Sign ESI contract | • Provide access to TP for measurements<br>• Provide project information to TP<br>• Provide Project Operation Factors to TP<br>• Sign ESI contract | • Validate project documentation<br>• Validate measurement documentation<br>• Validate saving calculations<br>• Provide validation results on $ES_{Committed}$ | • 4 Measurement methodology: Before retrofit[2] |

[1] Instrumentation used in measuring the information required to evaluate energy be calibrated with procedures developed by the National Institute of Standards and Technology (NIST). Primary standards and no less than third order NIST-traceable calibration equipment should be utilized wherever possible. The period of recalibration/verification of the equipment should not be longer than 12 months.

[2] To calculate the energy savings, it´s very important to know about the actual status of the installation. This actual status must be determined by measurements before the retrofit technology installation. These measurements must be done under the same conditions that after retrofit. With these measurements, it will be obtained more accurate values of the different energy savings.

| Validation step | Responsibilities | | | Subsection |
|---|---|---|---|---|
| | TP | CL | VE | |
| Project installation validation (PIV) | • Install equipment<br>• Install data-logger<br>• Document installation of equipment and data-logger<br>• Inform VE about installation finish | • Ensure access to installation after complexion of the work. | • Validation the installation by performing a site visit to visually inspect the installed equipment<br>• Validate the operation of the installed equipment at the time of site visit<br>• Validate and visually inspect the installation of a data-logger during site visit<br>• Re-set the data-logger to start the first annual measurement period | • 5 Project installation validation. |
| Project annual validation (PAV) | • Provide to VE annual data-logger data together with CL<br>• Ensure datalogger re-calibration | Support TP to get data-logger data | • Calculate the $ES_{Actual}$ based on provided data-logger data<br>• If required, calculate economic compensation | • 6 Measurement methodology, annual validation. |

## 6 PARAMETERS AND THEIR DETERMINATION

The preferred measurement units used when applying this International Standard shall be SI units. If due to common use or understanding imperial units are applied, then the SI units should also be given. The use of units shall be agreed upon when establishing the parameters of the assessment and identified in the assessment report.

Where necessary to ensure valid results, measuring equipment shall be calibrated, verified, or both at specified intervals or prior to use against measurement standards traceable to international or national measurement standards; where no such standards exist, the basis used for calibration or verification shall be recorded.

All instruments used for measurement including those permanently installed shall have a record of the most recent calibration information of which the accuracy and calibration details for all devices should be mentioned in the report.

Records of the verification or calibration shall be kept over a period of min. 2 years by the technology provider and shall be presented in case of an arbitration. (Energy datalogger, power-meter, air flow meter…).

The mandatory energy datalogger/energy installed after retrofit shall show and measure as minimum parameters the following:

- Accumulated energy consumption (kWh)
- Average power (kW)
- Accumulated operation hours (h)

In case that it must be used a portable device to perform measurements on site, this one will have the following features:

| Measurement portable device | Parameters | Features |
| --- | --- | --- |
| Electric power meter/Electric analyzer | - Accumulated energy consumption (kWh)<br>- Average power (kW)<br>- Operation time (h) | - The period of recalibration/verification of the equipment should not be longer than 12 months.<br>- Instrumentation used in measuring the information required to evaluate energy be calibrated or verified as specified by law or industrial standards.<br>- Calibration certificate shall be available during the measurements time<br>- Calibration certificate shall be attached with the measurements report. |

# 7 METHODOLOGY FOR ENERGY EFFICIENCY MEASURES IN ELECTRICAL SYSTEMS: MEASUREMENTS AND ANALYSES

The following sections describe the different technology under Energy Savings Insurance model scope. Regarding the different required steps to register technology offered by TP within the ESI model and to register projects within the ESI model:

| Validation step | Subsection | Content |
|---|---|---|
| Project Proposal validation | • 6 Measurement methodology: Before retrofit | • Before retrofit measurements<br>• $ES_{commited}$ calculation against after retrofit technology. |
| Project installation validation | • 7 Project installation validation. | • Documentation review<br>• On site visit<br>• Energy datalogger installation |
| Project Annual validation | • 8. Annual validation. | • Energy datalogger measurements<br>• $ES_{actual}$ calculation |

For all technologies, following indicators shall be defined. The definition must be based on measurements or calculations:

- Measured: Values obtained from direct measurements or data sheet of the equipment.
- Calculated: Values obtained from a calculation.

| Value | Name | Step | Unit | Description for base case | Measured/Calculated | Responsibility |
|---|---|---|---|---|---|---|
| ***SAVINGS*** | | | | | | |
| $ES_{committed}$ | *Committed energy savings* | *PPV* | *%* | *Non-applicable* | *Calculated* | *TP* |
| $ES_{actual}$ | *Actual energy savings* | *PAV* | *%* | *Non-applicable* | *Calculated* | *VE* |
| ***INDICATORS*** | | | | | | |
| $I_{br}$ | *Indicator before retrofit* | *PPV* | *--* | *Non-applicable* | *Calculated* | *TP* |
| $I_{ar}$ | *Indicator after retrofit* | *PPV* | *--* | *Non-applicable* | *Calculated* | *TP* |
| $I_{ar(year\ n)}$ | *Indicator after n year* | *PAV* | *--* | *Non-applicable* | *Calculated* | *TP* |
| ***OPERATION FACTORS*** | | | | | | |
| $h_{signed}$ | *Yearly Signed operating hours* | *PPV - PAV* | *h/year* | *Non-applicable* | *Provided-Stipulated by contract* | *CL* |

# 8 LIGHTING

## 8.1 ABBREVIATIONS/DEFINITIONS

The terms used in this section is described in the following table

| Value | Name | Step | Unit | Measured/ Calculated | Responsable |
|---|---|---|---|---|---|
| ***GENERAL CONCEPTS*** | | | | | |
| *EEI* | Energy efficiency index | PPV | -- | Measured | TP |
| ***BEFORE RETROFIT*** | | | | | |
| $P_{br}$ | Total power installed before retrofit-br | PPV | kW | Measured | TP |
| $Plamp_{br\ -UNIT}$ | Power of one lamp before retrofit-br | PPV | kW | Measured/Calculated | TP |
| $Pcircuit_{br}$ | Power of one circuit which contain nl lamps-br | PPV | kW | Measured | TP |
| $C_{br}$ | Yearly energy consumption based on signed hours-br | PPV | kWh | Calculated | TP |
| **AFTER RETROFIT** | | | | | |
| $Plamp_{ar(nominal)}$ | Power of one lamp (nominal)-ar | PPV | kW | Measured | TP |
| $C_{ar}$ | Yearly energy consumption based on signed hours-ar | PPV | kWh | Calculated | TP |
| ***AFTER RETROFIT-YEAR N*** | | | | | |
| $C_{ar\ (year\ n)}$ | Yearly energy consumption obtained from total power installed-ar (year n) | PAV | kWh | Measured | VE |
| $P_{ar\ (year\ n)}$ | Total power installed before retrofit-ar | PAV | kW | Calculated | VE |
| ***OPERATION FACTORS*** | | | | | |
| $number\ of\ lamps_{circuit-br}$ | Number of lamps (circuit)-br | PPV | lamps | Measured | TP |
| $number\ of\ lamps_{ar}$ | Number of lamps under the scope of the project-ar | PPV | lamps | Measured | TP |
| $number\ of\ lamps_{br}$ | Number of lamps under the scope of the project-br | PPV | lamps | Measured | TP |

## 8.2 APPLICABLE STANDARDS

All new technology proposed by the TP shall meet the applicable European and national regulations as following:

| Spain | Portugal | Italy | Croatia | Slovakia | Greece |
| --- | --- | --- | --- | --- | --- |

**EUROPEAN STANDARDS**

***REGULATION (EU) 2017/1369 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2017*** setting a framework for energy labelling and repealing Directive 2010/30/EU. **COMMISSION DELEGATED REGULATION (EU) 2019/2015** of 11 March 2019 supplementing **Regulation (EU) 2017/1369** of the European Parliament and of the Council with regard to energy labelling of light sources and repealing Commission Delegated Regulation (EU) No 874/2012.

COMMISSION DELEGATED REGULATION (EU) 2021/340 of 17 December 2020 amending Delegated Regulations (EU) 2019/2013, (EU) 2019/2014, (EU) 2019/2015, (EU) 2019/2016, (EU) 2019/2017 and (EU) 2019/2018 with regard to energy labelling requirements for electronic displays, household washing machines and household washer-dryers, light sources, refrigerating appliances, household dishwashers, and refrigerating appliances with a direct sales function.

| | | | | | |
|---|---|---|---|---|---|
| **SPANISH TECHNICAL BUILDING CODE (2016)-** Document HE-03: Energy efficiency of lighting facilities. | **Lei 52/2018 – 5th change to Decreto de Lei 118/2013** that stipulates the minimum requirements regarding energy efficiency in homes and buildings as well as the efficiency of their various technical equipment's (heat pumps, lighting, boilers, etc.) | New appliances must meet the minimum requirements defined by the community regulations issued in accordance with the directives 2009/125 / EC and 2010/30 / EU. | **Building Act** This Act transposes Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (recast) (OJ L 153, 18.6.2010) into the legislation of the Republic of Croatia. | | |

### 8.2.1 EUROPEAN APPLICABLE STANDARDS

**REGULATION (EU) 2017/1369 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2017** setting a framework for energy labelling and repealing Directive 2010/30/EU.

**COMMISSION DELEGATED REGULATION (EU) 2019/2015 of 11 March 2019** supplementing Regulation (EU) 2017/1369 of the European Parliamentand of the Council with regard to energy labelling of light sources and repealing Commission Delegated Regulation (EU) No 874/2012.

This Regulation establishes requirements for the labelling of, and the provision of supplementary product information on, light sources with or without integrated control gear. The requirements also apply to light sources placed on the market in a containing product.

**COMMISSION DELEGATED REGULATION (EU) 2021/340 of 17 December 2020** amending Delegated Regulations (EU) 2019/2013, (EU) 2019/2014, (EU) 2019/2015, (EU) 2019/2016, (EU) 2019/2017 and (EU) 2019/2018 with regard to energy labelling requirements for electronic displays, household washing machines and household washer-dryers, light sources, refrigerating appliances, household dishwashers, and refrigerating appliances with a direct sales function

### 8.2.2 SPANISH APPLICABLE STANDARDS

***SPANISH TECHNICAL BUILDING CODE (2016)-Document HE-03: Energy efficiency of lighting facilities.*** This document stablishes limit values per different uses/areas. Lighting controls for several areas would be recommended also. This technical code introduces also the VEEI concept and stablishes limit values depending the final use of the area. A limit value for Power/$m^2$ is specified also for different uses.

### 8.2.3 PORTUGUESE APPLICABLE STANDARDS

**Lei 52/2018 – 5th change to Decreto** de Lei 118/2013 that stipulates the minimum requirements regarding energy efficiency in homes and buildings as well as the efficiency of their various technical equipment (heat pumps, lighting, boilers, etc.)

### 8.2.4 ITALIAN APPLICABLE STANDARDS

**New appliances** must meet the minimum requirements and labeling defined by the community regulations issued in accordance with the directives 2009/125 / EC and 2010/30 / EU.

### 8.2.5 CROATIAN APPLICABLE STANDARDS

Building Act (Official Gazette 153/13 - Provisional Translation, 20/17, 39/19, 125/19
Rulebook on lighting zones, permitted lighting values and methods of managing lighting systems, Official Gazette 128/2020
(Official Gazette 127/14, 116/18, 25/20, 41/21)

Building Act, 2013. This Act regulates the designing, construction, use and maintenance of construction worksand the enforcement of administrative and any other procedures relating thereto for the
purpose of ensuring protection and planning of space in accordance with the regulations governing physical planning and providing the essential requirements for construction works and other requirements prescribed for construction works under this Act and regulations adopted on the basis thereof as well as under special regulations.
This Act transposes Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (recast) (OJ L 153, 18.6.2010) into the legislation of the Republic of Croatia.

## 8.3 METHODOLOGY EFFICIENCY CALCULATION

Savings shall be determined by measuring the capacity or efficiency of a system before and after the retrofit and by multiplying the difference by a stipulated factor (operation hours).

Before retrofit

$$P_{br}\ (kW) * h_{signed} = C_{br}\ (kWh) = I_{br}$$

After retrofit:

$$Plamp_{ar(nominal)}\ (kW) * number\ of\ lamps_{ar} * h_{signed} = C_{ar}\ (kWh) = I_{ar}$$

After retrofit (year n)

$$P_{ar\ (yearn)}\ (kW) * h_{signed} = C_{ar\ (year\ n)}(kWh) = I_{ar(year\ n)}$$

For the same operation factors (hours and days) the energy saving will be the following:

$$ES_{actual}(\%) = \left(\frac{I_{br} - I_{ar(year\ n)}}{I_{br}}\right) * 100$$

$$ES_{commited}(\%) = \left(\frac{I_{br} - I_{ar}}{I_{ar}}\right) * 100$$

## 8.4 MEASUREMENT METHODOLOGY: BEFORE RETROFIT

For the project proposal validation, the VE shall review the project documentation and measurements report provided by the TP.

### 8.4.1 PROJECT DOCUMENTATION

The project documentation for the project proposal validation shall be as least the following:

- General projects details
  - Total $m^2$ under the scope of the project: Drawings of affected area.
  - Use of the area/s under the scope of the project.
  - General project data information:
    - A diagrammatic representation of the facility under measurement.
    - Single line diagram for the installation under the scope of the project
- Before retrofit status:
  - Data sheet of an old unit: Type, Brand, Power, Labeling.
  - Number of equipment to replace (Operation factors)
  - Number of use hours (estimated-Operation factors)
- After retrofit status
  - Data sheet of the proposed new unit: Type, Brand, Power, Labeling.
  - Number of equipment to replace (Operation factors)
- Energy datalogger (if it exists previously):
  - Manufacturer's data sheet of the existing energy datalogger
  - Last calibration / verification certificate of the existing energy datalogger. The last verification/calibration will have done as maximum 12 months before the day in which this test is carried out.
  - Energy consumption data for the last 12 months.
  - Scheme, showing clearly, where the existing Energy datalogger is located

### 8.4.2 MEASUREMENT REPORT.

VE shall review the measurement report against this methodology. It means that the TP shall perform and document consumption measurement of the “before retrofit “system according to the following steps, depending on if there is an energy datalogger installed previously on site.

**In case of a new installation,** the technology provided must select a similar project or technology with similar features in order to use the methodology described in the following points. If there isn´t a similar project, it shall be established reference values that could be assumed as valid for the proposed base scenario.

**<u>If the client has previously installed an energy datalogger</u>** for the lamps included under the scope of the project.

1) TP shall switch ON all lamps included in the scope of the project during 1h. TP shall ensure that all lamps are ON during 1h min.
2) TP shall note the following parameters from the lighting energy datalogger:
    a. Measurement date: (dd/mm/yyyy)
    b. Measurements time: (hh:mm)
    c. Average power (kW) for 1 hour.

    TP/CL shall take photographs (with date and time) of the energy datalogger screen, showing clearly the different parameters noted.
3) Before retrofit indicator should be calculated by the following formula:

$$P_{br}\ (kW) * h_{\ signed} = C_{br}\ (kWh) = I_{br}$$

**<u>If the client doesn´t have previously installed an energy datalogger</u>** for the lamps included in the scope of the project.

1) One lamp included in the scope of the project will switch on during 1h.
2) The total power of this lamp shall be measured with a power meter or similar which must show clearly the instant power (kW)
3) We will repeat this operation minimum in 5 different lamps. If there are installed more than one different kind of lamps, TP shall repeat this operation in every lamp´s kind.

$$Plamp_{br\ -UNIT\ (type\ 1)}(kW) = \frac{Plamp_{br\ -UNIT\ (type\ 1)-1}(kW) + Plamp_{br\ -UNIT\ (type\ 1)-2}(kW) + \cdots..}{5}$$

$$Plamp_{br\ -UNIT\ (type\ 2)}(kW) = \frac{Plamp_{br\ -UNIT\ (type\ 2)-1}(kW) + Plamp_{br\ -UNIT\ (type\ 2)-2}(kW) + \cdots..}{5}$$

.....

$$Plamp_{br\ -UNIT\ (type\ n)}(kW) = \frac{Plamp_{br\ -UNIT\ (type\ n)-1}(kW) + Plamp_{br\ -UNIT\ (type\ n)-2}(kW) + \cdots..}{5}$$

$$P_{br}(kW) = \left[\left(Plamp_{br\ -UNIT\ (type\ 1)}(kW)\right) * number\ of\ lamps_{br(type\ 1)}\right] + \left[\left(Plamp_{br\ -UNIT\ (type\ 2)}(kW)\right) * number\ of\ lamps_{br(type\ 2)}\right] + \cdots\ldots\ldots\ldots\ldots\ldots + \left[\left(Plamp_{br\ -UNIT\ (type\ n)}(kW)\right) * number\ of\ lamps_{br(type\ n)}\right]$$

4) If it isn´t possible to measure an individual lamp, it will be acceptable to measure a circuit which contains only several lamps included in the scope of the project (This circuit shall include minimum 5 lamps). The power per unit in this case would be the following:

$$Plamp_{br\ -UNIT}(kW) = \frac{Pcircuit_{br}\ (kW)}{number\ of\ lamps_{circuit-br}}$$

5) TP could use the circuit method if all lamps under the same circuit are the same. $Plamp_{br\ -TOTAL}(kW)$ shall be calculated following the formula:

$$P_{br}\ (kW) = \left[\left(Plamp_{br\ -UNIT\ (type\ 1)}(kW)\right) * number\ of\ lamps_{br(type\ 1)}\right] + \left[\left(Plamp_{br\ -UNIT\ (type\ 2)}(kW)\right) * number\ of\ lamps_{br(type\ 2)}\right] + \cdots\ldots\ldots\ldots\ldots\ldots + \left[\left(Plamp_{br\ -UNIT\ (type\ n)}(kW)\right) * number\ of\ lamps_{br(type\ n)}\right]$$

4) Before retrofit indicator should be calculated by the following formula:

$$P_{br}\ (kW) * h_{\ signed} = C_{br}\ (kWh) = I_{br}$$

6) VE validate the indicators and consumptions calculation against this methodology.

After the measurements, $ES_{committed}$ could be calculated considering the nominal input power for the lamp selected:

$$Plamp_{ar(nominal)}\ (kW) * number\ of\ lamps_{ar} * h_{\ signed} = C_{ar}\ (kWh) = I_{ar}$$

$$ES_{commited}(\%) = \left(\frac{I_{br} - I_{ar}}{I_{br}}\right) * 100$$

## 8.5 PROJECT INSTALLATION VALIDATION

VE shall verify the project documentation of the new equipment provided by the TP: The required documentation for the installation validation will be at least the following:

- General projects details
  - Final value of sqm under the scope of the project. Final drawing of affected data.
- After retrofit status
  - Data sheet of final new unit: Type, Brand, Power, Labeling.
  - Final number of equipment to replace: Lighting schedule (Operation factors)
  - Delivery receipt for the new equipment.
- Energy datalogger
  - Features: range, accuracy, parameters, calibrations/verifications certificates)
  - Last calibration/verification certificates.
  - Electricity diagram which shows clearly that the energy datalogger only considers the equipment under the scope of the project.

VE shall note the current measurement from the Energy datalogger installed on site. The options are the following:

a) Reset the energy datalogger (if is possible)
b) If option A isn´t possible note the following parameters:
   a. Accumulated consumption
   b. Measurement date: (dd/mm/yyyy)
   c. Measurements time: (hh:mm)

This reset point/s will be the reference start point for the annual validations.

## 8.6 MEASUREMENT METHODOLOGY: ANNUAL VALIDATION

An energy datalogger shall be installed at the time of the installation of the equipment. The energy datalogger information covered only the new equipment under the scope of the project.
To calculate the different indicators, the operation factors shall be the same before and after retrofit
The measurement methodology operation should be the following:

1) Switch ON all the lamps under the project scope for 1 hour
2) Note the instant power of the lamps under the scope of the project (kW)
3) After retrofit indicator for n year would be the following:

$$P_{ar\ (yearn)}\ (kW) * h_{\ signed} = C_{ar\ \ (year\ n)}(kWh) = I_{ar(year\ n)}$$

4) Calculate the actual energy savings

$$ES_{actual\ (yearn)}(\%) = \left(\frac{I_{br} - I_{ar\ (year\ n)}}{I_{br}}\right) * 100$$

## 9 HISTORY

| *Version* | *replaces* | *Key changes:* |
| --- | --- | --- |
| 0 | -- | |
| 1 | | - |
| 2 | - | Adaptation to Croatia, Greece and Slovakia |

This history includes only the last 3 revisions.

## 10 ANNEX I

Table 01: Energy efficiency classes of light sources Source: COMMISSION DELEGATED REGULATION (EU) 2019/2015 of 11 March 2019 supplementing Regulation (EU) 2017/1369

**Energy efficiency classes of light sources**

| Energy efficiency class | Total mains efficacy $\eta_{TM}$ (lm/W) |
| --- | --- |
| A | $210 \leq \eta_{TM}$ |
| B | $185 \leq \eta_{TM} < 210$ |
| C | $160 \leq \eta_{TM} < 185$ |
| D | $135 \leq \eta_{TM} < 160$ |
| E | $110 \leq \eta_{TM} < 135$ |
| F | $85 \leq \eta_{TM} < 110$ |
| G | $\eta_{TM} < 85$ |

– Project Proposal validation request form to be filled in by TP (document 10, 02_PPV_TP_LI_new)

# 02. PROJECT PROPOSAL VALIDATION (PPV) - NEW PROJECTS
## Lighting (7.5 - LI)

## LIGHTING PROJECTS

### PROJECT IDENTIFICATION

Application No. | Application date dd mm yy

### TECHNOLOGY PROVIDER DATA

Name of Contract Manager: | Cell phone: | Email:

### CLIENT / PROJECT DATA

Name or Corporate name:

Address:

City: | Zip Code: | Country:

Name of Contact person 1: | Cell phone: | Email:

Name of Contact person 2: | Cell phone: | Email:

Project location:

### 1. GENERAL CONSIDERATIONS

Project in a new installation where previously there was no use of the equipment to be replaced or improved

1.1 Scope of the project

1.2 Selection of the approach methodology for the definition of the base scenario

The Technology Provider must select the approach methodology most accurate with the type of technology, the conditions before the implementation of the proposed project and the information available on the site, so that, the parameters can be established to define the applicable base scenario. Only one approach methodology can be selected.

a. From the energy performance information of a standard technology:

b. From the energy performance information of a similar technology or project:

1.2.a. Approach from the data of a model technology (complete this section only if applies to your approach methodology )

This approach considers those technologies that hypothetically would have been implemented in the absence of the proposed project, technologies widely used in the sector, whose energy behavior has been characterized by technical studies within the sector, obtaining from these, reference efficiency values that could be assumed as valid for the proposed base scenario.

Indicate the service demand taken as a reference: | Value: | Unit:

Indicate the equipment to cover the service demand:

For the selected reference equipment: | Nominal capacity: | Unit: | Energy efficiency: | Unit:

Estimated average efficiency: | Unit: | Estimated energy consumption: | Unit:

Data source taken as a reference:

Indicate the weighting factor applied: | Justify:

1.2.b. Approach from the data of a similar technology or project (complete this section only if applies to your approach methodology )

This approach considers those technologies that would have been hypothetically implemented in the absence of the proposed project, technologies whose energy behavior is comparable with other technologies or projects with similar characteristics, obtaining from these, referece efficiency values that can be assumed as valid for the base scenario.

Indicate the service demand taken as a reference: | Value: | Unit:

Description of the technology or project taken as a reference:

Name: | Quantity:

Type: | Brand:

Reference: | Unit Consumption (W): | Luminous flux (lm / un):

Power source: | Use: indoor | outdoor

Lighting System specifications:

Other relevant information:

| | |
|---|---|
| Why is the technology or project taken as a reference comparable to the proposed project ?: | |

1.3 Selection of the variables taken as a reference:

| | | | | | |
|---|---|---|---|---|---|
| 1. Illuminated area | | 4. Luminous efficacy | | 7. Energy Consumption | |
| 2. Amount of light required | | 5. Total electric power | | | |
| 3. Luminous flux emitted | | 6. Equipment operation time | | | |
| 8. Other: | | | | | |

1.4 Conditions of the variables taken as a reference:

| Selected reference variables | Value | Unit | Justification of the selected range |
|---|---|---|---|
| | | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

## 2. ENERGY PERFORMANCE INDICATORS

The Technology Provider must define the variable on which the energy performance indicator is built.

2.1 Operating factor (list all variables which the Energy Performance Indicator is build on)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Operating factor 1 | | Unit | | Monitored: | Yes | | No |
| Operating factor 2 | | Unit | | Monitored: | Yes | | No |

2.2 Before retrofit Energy Performance indicator (Ibr)

| No. | Operation time | Total power installed before retrofit - BR | $I_{br}$ |
|---|---|---|---|
| | $h_{signed}$ (h) | $P_{br}$ (kW) | $C_{br}$ (kWh) |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| … | | | |

Comments:

2.3 Information about AR equipment

Data sheet of proposed AR equipment

| | | | | | |
|---|---|---|---|---|---|
| Name: | | | | Quantity: | |
| Type: | | Brand: | | Use: Indoor | Outdoor |
| Reference: | | Unit Consumption (W): | | Luminous flux (lm / un): | |
| Luminous efficacy (lm / W): | | Total electric power (W): | | Power factor: | |
| Average useful life (h) | | Color temperature (K): | | Color efficiency index: | |
| Lighting System Specifications: | | | | | |
| Description of other changes in the installation associated with the technology: | | | | | |

2.4 Energy Performance indicator after retrofit (Iar)

| No. | Nominal Power of one lamp (nominal) - AR | Number of lamps installed - AR | Signed operating time | Iar |
|---|---|---|---|---|

| | $P_{lamp\ ar(nominal)}$ (kW) | (Units) | $h_{signed}$ (h) | $C_{ar}$ (kWh) |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| … | | | | |
| … | | | | |

Comments:

## 3. COMMITED ENERGY SAVINGS

| Energy savings | Unit | Value |
|---|---|---|
| Commited Energy Savings ***ESscommitted*** | % | |

| | |
|---|---|
| If an alternative procedure to the Methodology Handbook has been used, please explain | |

## 4. DOCUMENTS TO BE ATTACHED

The Technology Provider must submit the following information with the present form:

- Last calibration / verification certificate of equipment used for measurements
- Electricity diagram which shows clearly that the existing energy datalogger only considers the equipment under the scope of the project.
- Detailed procedure of alternative methodology (if it is used)
- Timed and dated photographs showing clearly required parameters on energy datalogger (or other equipment used for measurements)
- "Reference" equipment project (if it exist). This must contains al least the data listed in point 7.4.1. of document "ESI Europe_MethodologyHandbook_LI"
- AR equipment project This must contains al least the data listed in point 7.4.1. of document "ESI Europe_MethodologyHandbook_LI"

DECLARATION

I declare that the information provided in this document is truthful and I authorize Validation Entity to verify it, so that in the event of falsehood or non-compliance there is an early termination of the Project and Technology Provider registration within the ESI Europe programme

| By the technology provider |
|---|
| Name of the Contract Manager: |
| |
| Date: dd mm yyyy |
| Signature: |

– Project Proposal validation form by Validation Entity (document 30, All technologies_PPV_VE new)

# PPV CHECKLIST

## VALIDATION OF PROJECT PROPOSAL (Exclusive for Validation Entity)

Application No | Application date: dd mm yy

## 1. VALIDATION CRITERIA

The information provided by the Technology Provider will be evaluated by Validation Entity in order to identify if all the criteria defined in the ESI Europe programme are being met. The Project Proposal must comply with ALL the requirements to be validated.

| Methodology information | YES | NO |
|---|---|---|
| 1 Has the technology provider followed the methodology described in the ESI Europe Handbook? | | |
| 2 Have the indicators ($I_{br}$) ($I_{ar}$) been calculated according to ESI Europe Handbook? | | |
| 3 If the technology provider has not followed the methodology described in the ESI Europe Handbook, Has an alternative methodology been adopted? | | |
| 4 If the technology provider has followed own methodology, is this considered appropriate by the validation entity? | | |

If the Technology Provider has followed an own methodology, please explain the calculation of Energy Savings:

| Monitoring system information | YES | NO |
|---|---|---|
| 5 Has a Monitoring system been included in the AR project? | | |

If the answer is NO, please explain why:

| Documentation: The following documentation has been attached | YES | NO |
|---|---|---|
| 6 "Reference" project (if it exist) | | |
| 7 AR equipment project | | |
| 8 Electricity diagram which shows clearly that the energy monitoring system only considers the equipment under the scope of the project. | | |
| 9 Timed and dated photographs showing clearly required parameters on energy monitoring system (or another equipment used for measurements) screen | | |
| 10 Detailed procedure of alternative procedure (if it is used) | | |

## 2. VALIDATION RESULT

VALIDATOR DECLARATION

After evaluating the information provided by the Technology Provider, Validation Entity states that the Project Proposal

COMPLIES ☐ FAILS ☐

With all the criteria of the ESI Europe programme _____

Validator Name: Date: dd mm yy

Signature

– Project Installation validation form to be filled in by TP (document 28, All technologies PIV TP)

# 03. PROJECT INSTALLATION VALIDATION (PIV) - ALL TECHNOLIGIES

## PROJECT INSTALLATION VALIDATION

### PROJECT IDENTIFICATION

| Application No. | | Application date: | dd | | mm | | yy | |
|---|---|---|---|---|---|---|---|---|

### 1. PROJECT INFORMATION

The Technology Provider must list all the equipment that were effectively installed as part of the project, indicating its main specifications according to the manufacturer (include the appropriate measure units).

Technology implemented:

1.1 List of equipment effectively installed:

| Name of the equipment installed in the project | Brand | Model or reference | Quantity | Characteristics | | Nominal consumption rate | |
|---|---|---|---|---|---|---|---|
| | | | | Nominal Capacity | Nominal Efficiency | Electricity | Energy source |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Observations:

General project differences from Project Proposal

### 2. AR MONITORING SYSTEM

Description of mandatory monitoring system replacing described on site

2.1 Monitoring system installed in the after retrofit (AR) equipment:

| Variable monitored | Equipment for monitoring | Equipment Brand | Model or reference | Equipment accuracy | Calibration frequency | Last Calibration Date |
|---|---|---|---|---|---|---|
| 1. | | | | | | |
| 2. | | | | | | |
| 3. | | | | | | |
| 4. | | | | | | |
| 5. | | | | | | |

2.2 Has the monitoring system been reset? If not, please indicate monitoring system record

Reset Date: Reset Time:

2.5 Contingency plan (establish alternatives for monitoring when problems arise with the measurement or recording data):

2.6 Variable monitoring:

Identify the conditions required for each variable to be monitored with the monitoring system implemented.

| Variable monitored | Unit of measurement | Data source | Monitoring frequency | Monitoring procedure | Start data point (if monitoring system cannot be reset) ***Validation Entity Exclusive USE*** |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2 | | | | | |
| 3 | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 4 | | | | | |
| 5 | | | | | |

## 3. DOCUMENTS TO BE ATTACHED

The Technology Provider must submit the following information with the present form:

- Delivery receipt for the after retrofit (AR) equipment
- Technical datasheet of the after retrofit (AR) equipment
- Technical datasheet of the after retrofit (AR) monitoring system

## DECLARATION

I declare that the information provided in this document is truthful and I authorize Validation Entity to verify it, so that in the event of falsehood or non-compliance there is an early termination of the Project and Technology Provider registration within the ESI Europe programme

| By the Technology Provider |
|---|
| Name of the Contract Manager: |
| |
| Date: dd mm yy |
| Signature: |

– Project Installation validation form by Validation Entity (document 31, All technologies PIV VE)

## PIV CHECKLIST

### PROJECT INSTALLATION VERIFICATION (For the exclusive use of Validation Entity)

Application No. | Report date: dd mm yy

### 1. VERIFICATION CRITERIA

The information provided by the Technology Provider will be evaluated by Validation Entity in order to identify if all the criteria defined in the ESI Europe programme are being met. The Project Installation must comply with ALL the requirements to be validated

| Compilance information | YES | NO |
|---|---|---|
| 1. The site where the project was implemented corresponds to the location described in the validated project proposal (PPV). | | |
| 2. The installed equipment corresponds to the type of technology indicated in the validated project proposal (PPV). | | |
| 3. The installed equipment corresponds to the specifications proposed for the new equipment of the project in accordance with the validated project proposal (PPV). | | |
| 4. Due to their technical characteristics, the installed equipment would allow achieving the savings defined in the validated project proposal (PPV). | | |
| **Datalogger information** | **YES** | **NO** |
| 5 The monitoring equipment meets the accuracy and calibration requirements in accordance with applicable standards. | | |
| 6 The datalogger has been correctly reset. (In case it is not possible to rest, the reference measures that will be the starting point have been noted). | | |

If any of the above answers is NO, please explain why:

| Documentation: The following documentation has been attached | YES | NO |
|---|---|---|
| 7 Delivery receipt for the after retrofit (AR) equipment | | |
| 8 Technical datasheet of the after retrofit (AR) equipment | | |
| 9 Technical datasheet of the after retrofit (AR) monitoring system | | |

### 2 VALIDATION RESULT

VALIDATOR DECLARATION

After evaluating the information provided by the Technology Provider, Validation Entity states that the Project Installation

COMPLIES FAILS

with all the criteria of the ESI Europe programme, being the project installation in accordance with the validated project proposal

Validator name | Date: dd mm yy

Signature

– Project Annual Validation form to be filled in by TP (document 29, All technologies PIV TP)

# 04. PROJECT ANNUAL VALIDATION (PAV) - ALL TECHNOLOGIES

## PROJECT ANNUAL VALIDATION

### PROJECT ID

Application No | Application date dd mm yy

### PROJECT IDENTIFICATION

#### CLIENT / PROJECT DATA

PROJECT ID

### 1. ENERGY PERFORMANCE INDICATORS AFTER RETROFIT $I_{ar(year\ n)}$

The Technology Provider must list all the equipment that was effectively installed as part of the project, indicating its main specifications according to the manufacturer (include the appropriate measure units).

Technology implemented:

1.1 AR (year n) Measurements:

1.1.a. Representative period selected (It will be established within a full operating cycle under normal conditions):

From dd mm yy To dd mm yy

Why is that period representative?:

1.1.b. AR(year n) measurements :

From dd mm yy To dd mm yy

1 year | Another duration (if different): | If it is different, Why? :

perating time - ***h(ar (1 year***

1.2 AR (year n) Energy Performance indicator ($I_{ar(year\ n)}$)

Identify the conditions required for each variable to be monitored with the monitoring system implemented.

| Monitored period | | | AR Energy consumption for 1 year | Signed operation time | $I_{ar(year\ n)}$ |
|---|---|---|---|---|---|
| No. | from (dd/mm/yyyy) | to (dd/mm/yyyy) | ***C(ar (year n) )*** (kWh) | Operating hours (***hsigned***) | ***C(ar (year n-weighted) )*** (kWh) |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| … | | | | | |
| … | | | | | |

1.3 Considerations

Does the project meet the legal maintenance requirements?- (just for **PV** or **SW** projects)

Has there been any incident during measurements period?

### 2. REAL ENERGY SAVINGS

| Energy savings | Unit | Value |
|---|---|---|
| Commited Energy Savings ***EScommited*** | % | |

| Energy savings | Unit | Value |
|---|---|---|
| Actual Energy Savings ***ESreal*** | % | |

## 3. EVALUATION

| Energy savings | Unit | Value |
|---|---|---|
| ***ESreal - EScommited*** | % | |

## 4. COMPENSATION (IF NECESSARY)

| Energy savings | Unit | Value |
|---|---|---|
| ***ESreal - EScommited*** | % | |
| ***Agreed units of transformed energy*** | % | |
| ***Agreed cost per energy unit*** | % | |
| ***Economic compensation*** | % | |

Comments:

## 5. DOCUMENTS TO BE ATTACHED

The Technology Provider must submit the following information with the present form:

- Last calibration / verification certificate of the existing energy datalogger. (If it already exist) or another equipment used for measurements
- Detailed procedure of alternative methodoligy (if it is used)
- Timed and dated photographs showing clearly required parameters on energy datalogger (or another equipment used for measurements) screen

DECLARATION

"I declare that the information provided in this document is truthful and I authorize Validation Entity to verify it, so that in the event of falsehood or non-compliance there is an early termination of the Project and Technology Provider registration within the ESI Europe programme

| By the Technology Provider |
|---|
| Name of the Contract Manager: |
| Date: dd mm yy |
| Signature: |

– Project Annual Validation form by Validation Entity (document 32, All technologies PIV TP)

# PAV-CHECKLIST

## Project annual validation (For the exclusive use of Validation Entity)

Application No. | Report date: dd mm yy

## 1. VALIDATION CRITERIA

The information provided by the Technology Provider will be evaluated by Validation Entity in order to identify if all the criteria defined in the ESI Europe

| Methodolgy information: | YES | NO |
|---|---|---|
| 1. Has the (AR) equipment been used under normal conditions during the one year period? | | |
| 2 Has the indicator (Iar) been calculated following the ESI Europe methodology described in the handbook? | | |
| 3 Has the Energy Savings been calculated following the ESI Europe methodology described in the handbook? | | |
| 4 If the technolgy provider has not followed the methodology described in the ESI Europe handbook,is this considered appropriate by the validation entity? | | |

If the Technology Provider has followed an own methodology, please explain the calculation of Energy Savings

| Monitoring system methodology: | YES | NO |
|---|---|---|
| 5 The equipment and the monitoring methodology implemented allow the monitoring of the minimum required parameters. | | |
| 6 The monitoring equipment meets the accuracy and calibration requirements in accordance with applicable standards. | | |

| Documentation: The following documentation has been attached | YES | NO |
|---|---|---|
| 7 Last calibration / verification certificate of the AR monitoring system. | | |
| 8 Timed and dated photographs showing clearly required parameters on energy datalogger screen | | |
| 9 Detailed alternative methodology (if applicable) | | |

## 2 VALIDATION RESULT

VALIDATOR DECLARATION

After evaluating the information provided by the Technology Provider, Validation Entity states that the Project Annual monitoring

COMPLIES FAILS

with all the criteria of the ESI Europe programme

Validator name | Date: dd mm yy

Signature

# ANNEX C – VALIDATION PROCESSES TIME DEDICATION REFERENCES

| Validation actions | Direct payment | Reference time dedication |
|---|---|---|
| A. Project Proposal Validation (PPV) | Pilot stage: Covered by BASE as part of pilot service package.<br>Post-pilot: Initially paid by Technology Provider (TP); typically passed on to the client within the EE project cost. | 4 hours<br>(Desk-based review of EE proposal documentation and savings calculations.) |
| B. Project Installation Validation (PIV) | Pilot stage: Covered by BASE as part of the pilot service package.<br>Post-pilot: Initially paid by Technology Provider (TP); typically passed on to the client within the EE project cost. | 1 day visit on site. Typically half a day of technical visit (3 to 5 hours) |
| C. Annual Validation Report (PAV) | Pilot stage: Covered by BASE as part of the pilot service package (first-year validation).<br>Post-pilot: If the final client is interested in this service, initially paid by Technology Provider (TP); typically passed on to the client within the EE project cost. | 2 to 3 hours |
| D. Arbitration Procedure (when required) | Paid by the party that loses the arbitration case (not covered by BASE). | Scenario 1 (Simple desk-based review): 1–2 hours<br>Scenario 2 (Moderate complexity): 1 full day (including travel, typically to the project site location). |

# ANNEX D – DRAFT OF THE STANDARDISED ESI CONTRACT

(The most updated English version of the ESI contract is inserted here as part of this RFQ)

Date: _____, Year

**SYSTEM SUPPLY AND MAINTENANCE AGREEMENT**

**between**

**THE SUPPLIER**

And

**THE CLIENT**

**CONTENTS**

---

**CLAUSE**



**SCHEDULES**

This agreement is dated [DATE]

**Parties**

(1) [FULL COMPANY NAME] incorporated and registered in [JURISDICTION] with company number [NUMBER] whose registered office is at [REGISTERED OFFICE ADDRESS] (**Supplier**)

And

(2) [FULL COMPANY NAME] incorporated and registered in [JURISDICTION] with company number [NUMBER] whose registered office is at [REGISTERED OFFICE ADDRESS] (**Client**)

**Agreed terms**

## 1 Recitals

1.1 The Client is desirous of acquiring the equipment described in Schedule I (the **System**) for the [_____] facilities located at [_____] (the **Facilities**), [for purposes of improving the energy efficiency in the Facilities.]

1.2 The Supplier is desirous of supplying, installing, and setting up the System for the Client, as well as rendering maintenance services in connection therewith, in accordance with the technology solution framework described in the energy efficiency project document dated as of [_____], set out in Schedule 1 (the **Project**).

1.3 The Client is interested in acquiring the technology solution proposed by the Supplier, subject to the satisfaction of the terms and conditions of the Project.

1.4 Therefore, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree to enter into this Agreement, which shall be governed by the following Clauses, schedules and annexures, appendices as specified and agreed between the Parties in writing from time to time.

## 2 Interpretation

2.1 **Definitions**:

**Achieved Energy Saving** means the actual percentage of energy saving achieved by the Client during a certain year.

**Agreement** means this System's Supply and Maintenance Agreement together with all schedules, amendments, variations if any as agreed between the Parties in writing.

**Business Day** means a day other than a Saturday, Sunday or public holiday in [the United Kingdom] when banks in [London] are open for business.

**Cap Insurance Coverage** means the maximum amount of money, in the aggregate, that the Insurance Company will pay to the Client for any claims under the insurance described in Clause 4.4(b).

**Certificate of Initial Assessment** means the outcome of the Annual Validation issued by the Independent Expert one year after the issuance of the positive Installation Validation Report as defined in clause 9.3.

**Certificate of Periodic Assessment** means the outcome of the Periodic assessment performed by the Supplier's Supervisor and the Client's Supervisor starting one year after the issuance of the Certificate of Initial Assessment. The Certificate of Periodic Assessment is issued by the Client and The Supplier without any involvement of the Independent Expert.

**Client** shall have the meaning provided in the preamble.

**Client's Supervisor** means the person appointed by the Client to act as its representative in all matters relating to the performance of and compliance with the obligations in this Agreement.

**Committed Energy Saving** means the percentage of energy saving, calculated based on the Client's current consumption in the Facilities, which the Supplier undertakes to deliver to the Client as a result of the supply and installation of the System.

**Conditions Precedent** shall have the meaning provided in Clauses 4.2 and 4.4.

**Data Protection Legislation** shall mean all applicable legislation and regulations relating to privacy or the protection or processing of personal data in any relevant jurisdiction, including Regulation 2016/679 (the General Data Protection Regulation) and Directive 2002/58/EC, and any other legislation which implements any other current or future legal act of the European Union concerning the protection and processing of personal data, including any amendment or re-enactment of the foregoing.

**Energy Saving Warranty** means the period specified in Clause 9.1, which shall commence on the date of issuance of the Installation Validation Report by the Independent Expert, during which the Supplier represents and warrants that the System will allow the Client to achieve the Committed Energy Saving.

**Facilities** shall have the meaning provided in Recital 1.1.

**First Annual Validation** means the assessment by the Independent Expert one year after the issuance of a positive Installation Validation Report as defined in clause 9.3 resulting into the issuance of a Certificate of Initial Assessment.

**Force Majeure Notice** means the notice to be delivered by the Party affected by an event of force majeure informing the other Party of the existence of such event and

explaining the reasons why it prevents fulfillment of obligations under this Agreement, how long it expects this event to last (if feasible) and any measures adopted to mitigate damages to the other Party.

**Indemnification for Committed Energy Saving Shortfall** means the indemnification to be paid by the Supplier to the Client in case the Committed Energy Saving is not reached, which shall be calculated pursuant to Clause 9.2.

**Independent Expert** means [*Insert name*] or [the independent expert to be joint appointed by the Parties pursuant to Clause 5.1].

**Initial Assessment** shall have the meaning provided in Clause 9.3(a).

**Installation Validation Report** means the report to be issued by the Independent Expert upon completion of the supply, installation and setup of the System by the Supplier. The Installation Validation Report shall include the determination of whether the installation performed by the Supplier conforms to the specifications of the Project, if the data-logger installed by the Supplier is operating properly.

**Insurance Company** shall have the meaning provided in Clause 4.4.

**Party** means either the Supplier or the Client, as the case may be.

**Periodic Assessment** shall have the meaning provided in Clause 9.3(b).

**Project** means the energy efficiency project and offer of supply, installment, setup and maintenance of the System, which shall be prepared by the Supplier for the Client.

**Project Validation Report** means the report to be issued by the Independent Expert determining *inter alia*, the feasibility of the achievement of the Committed Energy Saving indicated upon installation of the System in the Facilities.

**Supplier** shall have the meaning provided in the preamble.

**Supplier's Supervisor** means the person appointed by the Supplier to act as its representative in all matter relating to the performance of and compliance with the obligations hereunder.

**System** shall have the meaning provided in Recital 1.1.

2.2 In this Agreement:

(a) the words "include" or "including" (or any similar term) are not to be construed as implying any limitation;

(b) general words shall not be given a restrictive meaning by reason of the fact that they are preceded or followed by words indicating a particular class of acts, matters or things;

(c) words indicating gender shall be treated as referring to the masculine, feminine or neuter as appropriate;

(d) a reference to a statute, statutory provision or subordinate legislation ("**legislation**") refers to such legislation as amended and in force from time to time and to any legislation that (either with or without modification) re-enacts, consolidates or enacts in rewritten form any such legislation.

(e) any reference to any document other than this Agreement is a reference to that other document as amended, varied, supplemented, or novated (in each case, other than in breach of the provisions of this Agreement) at any time;

(f) a reference to a document "in the agreed form" means a form of document agreed by each of the Parties and signed by or on behalf of each Party for the purposes of identification;

(g) references to the time of day are to Central European Time (CET);

(h) a reference to something being "in writing" or "written" includes any mode of representing or reproducing words in visible form that is capable of reproduction in hard copy form, including words transmitted by email but excluding any other form of electronic or digital communication;

(i) a reference to a document or communication being "signed" by or on behalf of any person means signature in manuscript by that person or her/his duly authorised agent or attorney (which manuscript signature may be affixed or transmitted by email) and not any other method of signature;

(j) any reference to a "person" includes any individual, body corporate, trust, partnership, joint venture, unincorporated association or governmental, quasi-governmental, judicial or regulatory entity (or any department, agency or political sub-division of any such entity), in each case whether or not having a separate legal personality, and any reference to a "company" includes any company, corporation or other body corporate, and any limited partnership or limited liability partnership wherever and however incorporated or established;

(k) any reference to any English legal term for any action, remedy, method of judicial proceeding, legal document, legal status, court, official or any legal concept or thing shall be deemed to include what most nearly approximates in that jurisdiction to the English legal term.

## 3 Purpose

3.1 The Supplier shall (i) supply, install, fully set up the System in the Facilities; and (ii) achieve the Committed Energy Saving, as per the terms of this Agreement and the Project.

3.2 The Supplier shall provide the preventive and corrective maintenance services in connection with the System to the Client as per the terms of this Agreement.

3.3 The Supplier shall provide corrective maintenance services in connection with the System not covered by the warranty, as per the terms of the Project.

**4 Conditions Precedent**

4.1 The obligations under this Agreement shall be subject to the fulfilment of the conditions set forth in Clauses 4.2 and 4.4 (**Conditions Precedent**) no later than [___] Business Days from the date of this Agreement. If the Supplier fails to satisfy either of the Conditions Precedent within such time period, this Agreement shall be null and void with no further force or effect.

4.2 Delivery of a positive Project Validation Report issued by the Independent Expert:

The Supplier is required to deliver to the Client a positive Project Validation Report issued by the Independent Expert (appointed as per Clause 5) taking into account the criteria set out in Clause 4.3.

4.3 For the purposes of preparation of a Project Validation Report, the Supplier shall forthwith [on the date of this Agreement] provide the Independent Expert with an executed copy of this Agreement and the Project for its review. The criteria for issuance of a positive Project Validation Report are *inter alia* as follows:

(a) the Project expressly includes the minimum content set forth in Schedule 3 hereto and the Independent Expert determines, in accordance with industry standards, that the Project has been developed to the extent necessary to permit the proper validation thereof by the Independent Expert;

(b) the Independent Expert must expressly represent in the Project Validation Report that it deems the Committed Energy Saving provided in the Project to be feasible if the operational factors indicated therein are duly satisfied and the Independent Expert has received sufficient data to complete such assessment; and

(c) the Independent Expert determines that the Supplier is capable of implementing the Project, taking into consideration the criteria defined in Schedule 3.

4.4 Delivery by the Supplier to the Client of an Insurance Certificate (as defined below):

The Supplier shall deliver to the Client, a certificate from a top tier insurance company operating in [___] (**Insurance Company**), which shall certify the retention of insurance in favour of the Client and include the following specifications (**Insurance Certificate**):

(a) the Supplier will act as the policyholder and will appoint the Client as insured;

(b) the insurance will cover an amount up to [___] Euros (the **Cap Insurance Coverage**), in connection with the Supplier's obligation to pay to the Client

the Indemnification for Committed Energy Saving Shortfall, as applicable. The existence of this insurance shall not limit in any way the Supplier's obligation to make good the entire Committed Energy Saving Shortfall;

(c) the insurance coverage will be effective upon the issuance by the Independent Expert of a positive Installation Validation Report (as further detailed in Clause 6.1(e) below);

(d) the policy's coverage will not exceed the Cap Insurance Coverage and that the Insurance Company is jointly liable with the Supplier upon first request by the Client, with express waiver by the Insurance Company of any [benefit of privilege], excussion and division, or any other rights, interests or exceptions which may delay payment to the Client of the Indemnification for the Committed Energy Saving Shortfall;

(e) the Insurance Company's obligation to pay the amount requested by the Client, not exceeding the Cap Insurance Coverage, upon the Client's first request with no objection or exceptions of any kind, including any exceptions which may apply against the policyholder no later than [10 (ten) Business Days] from the date of receipt of the following documents:

(i) copy of the [payment request] made to the Supplier;

(ii) written declaration issued by the Client confirming that more than [10 (ten) Business Days] have lapsed since the delivery of such payment request and the Supplier's failure to fulfill such request;

(iii) written declaration issued by the Client indicating the amount requested to the Insurance Company and the bank account details necessary for the Insurance Company to make the corresponding payment;

(iv) Certificate of Initial Assessment in the form of Schedule 4, which shall contain the amount of the Indemnification for Committed Energy Saving Shortfall, it being agreed that the amount requested to the Insurance Company shall not, under any circumstance, exceed the Indemnification for Committed Energy Saving Shortfall as provided in the Certificate of Initial Assessment; and

(v) written declaration issued by the Client confirming that it has not disassembled or moved the System.

(f) the Cap Insurance Coverage may be reduced by any partial payments made by the Insurance Company, in which case the insurance policy shall remain effective for the remaining unpaid amount;

(g) the coverage provided by the insurance policy to the Client shall remain effective until the earlier of:

(i) the date on which the sum of all payments made by the Insurance Company to the Client under the Insurance Certificate reaches the Cap Insurance Coverage; and

(ii) the date of termination of this Agreement for any reason whatsoever.

## 5 Independent Expert

5.1 Simultaneously with the execution of this Agreement, the Parties agree to appoint (_____) to act as independent expert, with the following functions (the "Independent Expert"): ~~**[**Within [___] Business Days from the date of this Agreement, the Parties shall appoint an [independent entity] jointly agreed by both Parties in writing (**Independent Expert**) to carry out the following functions**] OR** [Simultaneously with the execution of this Agreement, the Parties are appointing [_____] to act as an independent expert (**Independent Expert**) to carry out the following functions]: [*Note: It is preferable to appoint the Independent Expert upfront or alternately if the Independent Expert is to be appointed subsequently the scenario where Parties are unable to agree on the subsequent appointment of an Independent Expert should be contemplated*.]~~

(a) Project validation: to review and where applicable, approve the Project for the fulfilment of the Conditions Precedent set out in Clause 4.2 and Clause 4.3;

(b) Installation validation: to review and inspect, and if applicable, approve the installation and setup of the System upon completion of the implementation of the Project by the Supplier and issue the Installation Validation Report;

(c) First Annual Validation: to assess the energy savings based on energy data recorded by the data-logger one year following the confirmation pursuant to Clause 5.1(b) above, to confirm the correct operation of the System, if applicable, as well as the energy saving achieved during such period, issuing the Certificate of Initial Assessment;

(d) Conflict resolution: to resolve conflicts between the Parties, if pursuant to a Periodic Assessment as per Clause 9.3(b), Parties are unable to agree on any of the following:

(i) whether or not the Committed Energy Saving has been achieved;

(ii) if the Committed Energy Saving has not been achieved, to report the difference between the Achieved Energy Saving and the Committed Energy Saving in the Periodic Assessment Certificate;

(iii) whether the shortfall in the Committed Energy Saving was caused by the Client or not and to the extent such shortfall is not entirely caused by the Client, the amount of the Indemnification for the Energy Saving Shortfall to be paid by the Supplier to the Client.

5.2 [On the date of this Agreement], the Supplier shall enter into a services agreement with the Independent Expert (appointed in accordance with Clause 5.1) (**Expert Services Agreement**). The Parties agree that:

(a) the [Client shall have the right to be a confirming party to the Expert Services Agreement] and;

(b) the Independent Expert's fees shall be borne by the Parties in the following manner and shall be specified accordingly in the Expert Services Agreement:

(i) the fees for the services in Clauses 5.1(a), 5.1(b) and 5.1(c) shall be borne solely by the Supplier;

(ii) the fees for the services in Clause 5.1(d), if required, shall be borne equally by the Parties.

5.3 The Supplier covenants and agrees that the Expert Services Agreement shall provide for the Independent Expert's obligation to immediately inform the Client in writing if the Supplier fails to pay the Independent Expert's fees as set forth therein along with an explanation for such default, if any. Upon being notified of any delay or default in payment by the Supplier under the Expert Services Agreement, the Client may, at its discretion, pay these overdue amounts to the Independent Expert on behalf of the Supplier and recover such amounts from the Supplier as per Clause 5.4.

5.4 The Client shall have the right to either offset any payments made to the Independent Expert on behalf of the Supplier against any amounts due by the Client to the Supplier or request the immediate reimbursement by the Supplier of the corresponding amount, together with all accrued interest until the date of recovery [as per the prevailing bank rate].

## 6 Implementation of the Project and Obligation of each of the Parties

6.1 The Supplier agrees and covenants to:

(a) employ the human and material resources necessary for the most efficient implementation of the Project. Except where expressly provided to the contrary in the Project, the Supplier shall be responsible for the supply of all materials and equipment, supervision, workforce, tools, machinery, services, transportation, connections and other installations, as well as any other elements and services necessary for the fulfillment of this Agreement;

(b) supply the System in accordance with the quality [standards / levels] provided in the Project. In case any parts of the System supplied by the Supplier fail to meet the specifications described in the Project, the Supplier shall substitute, immediately and free of charge, all such parts of the System and bear all the costs related to such substitution and installation thereof, as well as for the disassembly, removal and, where applicable, disposal of the replaced parts. In

case of a defective assembly or installation, pursuant to the Client's request, the Supplier shall take all actions necessary to cure such defect, immediately and free of charge, as well as bear all related costs;

(c) deliver to the Client the technical documentation necessary for the adequate operation of the System, particularly those expressly listed in the Project, as well as make available to the Client's Supervisor any on-site trainings in respect of the maintenance and operation of the System;

(d) perform the installation and setup of the System in accordance with the timeline provided in the Project. The Parties hereby acknowledge the essential character of such timeline. The Supplier shall report to the Client, on a weekly basis, the status and progress of the Project implementation, as well as immediately notify the Client of any delays or events that may adversely affect such timeline. In case of failure to comply with any due dates stipulated in the timeline caused by an act or omission imputable to the Supplier, the Supplier shall pay non-compensatory damages to the Client in the amount of [_____] Euros for each day in arrears, without prejudice to any additional claims for losses and damages caused to the Client as a result of such default;

(e) obtain the approval of the installation and setup of the System by the Independent Expert. To such effect, upon completion of the supply, installation and setup of the System by the Supplier, the Supplier shall send to the Independent Expert, with a copy to the Client, a written request to visit the Facilities, no later than [5 (five) Business Days] from the receipt of such request, and run the appropriate tests, as determined by the Independent Expert in accordance with industry standards, in order to:

(i) verify if the installation performed by the Supplier complies with the provisions set forth in the Project;

(ii) verify if the data-logger installed in the System is operating properly; and/or

(iii) run a performance test in the System, if applicable;

If the Independent Expert determines that the installation has been completed in accordance with the Project, the data-logger is operating properly and the performance test results indicate that the System is [reasonably likely] to achieve the Committed Energy Saving, it shall issue a positive Installation Validation Report. If any of the foregoing conditions is not satisfied, the Independent Expert will issue a negative Installation Validation Report detailing the reasons for such determination. The determination of the Independent Expert shall be binding on both Parties.

The issuance of a positive Installation Validation Report will have the following consequences: (i) the title to the System, its equipment and parts thereof, as well as the risks associated therewith, will immediately shift from the Supplier to the Client, and (ii) the insurance coverage provided in the Insurance Certificate shall immediately become effective. The Parties hereby

covenant and agree to procure that a copy of the positive Installation Validation Report be delivered to the Insurance Company by the Client no later than [3 (three) Business Days] from the issuance thereof.

If the Independent Expert issues a negative Installation Validation Report, it shall describe the reasons for such determination and indicate if such issues can be cured, in which case the Supplier shall have a period of [10 (ten) Business Days] from the issuance of such negative Installation Validation Report to take all actions necessary to cure such issues and obtain a positive Installation Validation Report, at its sole expense. Both the failure by the Supplier to cure any issues within the 10 (ten) Business Days' period set forth herein and the issuance of a negative Installation Validation Report by the Independent Expert for issues that cannot be cured shall be deemed a material breach of this Agreement by the Supplier.

(f) following the issuance of a positive Installation Validation Report, perform preventive and corrective maintenance services in the System, in a diligent manner and as detailed in the Project, for a period of [_____] months;

(g) retain and maintain, at its sole expense, a liability insurance from a solvent insurance company to cover any losses that may be attributed to it in connection with the implementation of the Project, including the corresponding maintenance services, which shall cover at least [_____] Euros;

(h) prior to the commencement of the implementation of the Project, inform the Client of the specific risks associated with the activities to be performed in the Facilities, of all emergency situations that may affect the Client's workers and of any work-related accident that may result from concurrent activities, adapt its preventive documentation to the peculiarities of the Facilities, communicate to its workers all information and instructions received from the Client regarding labor risk prevention, as well as strictly follow such instructions, including with the adoption of training and monitoring measures of its assigned personnel arising from such information/instructions;

(i) ensure that the personnel assigned to the implementation of the Project has received the necessary training and information in connection with labor risk prevention, not only in respect of collective protection measures but also relating to the use of the personal protective equipment necessary for the performance of the activities under safe conditions. Additionally, the Supplier shall carry out periodic checks on the labor conditions of the workers performing the activities and ensure the regular monitoring of such workers' health in light of the inherent risks of their labor activities, pursuant to the terms set forth in the [applicable] regulations on labor risk prevention. All the activities related to the supply, installation, setup and/or maintenance of the System performed by the Supplier shall be conducted in a manner that does not impair the Client's activities in the Facilities. In turn, the Client shall grant the Supplier access to the Facilities; and

(j) comply with the applicable regulations and implement the Project in accordance with applicable laws and regulations, including obtaining at its expense, all licenses, permits and governmental approvals necessary for the implementation of the Project, as well as informing the Client of any permits, licenses or approvals that the Client may be required to obtain on its own and assist the Client with all necessary formalities and procedures related thereto. [*Note: any jurisdiction-specific licenses may be specifically referred here*]

6.2 The Client agrees and covenants to the following:

(a) pay the amounts due in accordance with this Agreement on or before the corresponding due dates and in the manner set forth herein or in the Project;

(b) grant the Supplier and its personnel and, as applicable, the Independent Expert, the necessary access to the System, on the dates and at the times agreed upon by the Parties, for the correct implementation of the Project and inspection thereof;

(c) prior to the commencement of the implementation of the Project, provide the Supplier with accurate information and instructions respecting the existing risks in its work site which may affect the activities to be performed by the Supplier, as well as any emergency situations that may affect the Supplier's workers and any work-related accident resulting from concurrent activities;

(d) make available to the Supplier the documentation related to the risk assessment in connection with health and safety at work, planning of preventive activities as well as preventive and protective measures to be adopted, such that the Supplier may duly communicate this information to its workers who may be temporarily allocated in the Facilities..

6.3 Each of the Parties agree that:

(a) each Party shall appoint a representative to act on their behalf on all matters relating to the performance of and compliance with this Agreement (the **Supplier's Supervisor** or the **Client's Supervisor**, as the case may be). Each Party shall inform the other Party, the Independent Expert and the Insurance Company by written notice of its appointed representative. Any Party may appoint other individuals to act as its supervisor at any time and any such appointment(s) shall become effective upon receipt of a written notice thereof by the other Party, which notice shall contain the relevant contact information for notice purposes in accordance with Clause 12.7 below. Any substitution of the Supplier's Supervisor or the Client's Supervisor, as the case may be, shall be notified in writing by the respective Party to the Independent Expert and the Insurance Company;

(b) The Supplier and the Client shall determine the means of coordination necessary for the correct application of the protective, preventive and emergency measures in the System considering the implementation of the Project, as well as inform their respective workers of such measures.

## 7 Fees

7.1 Supply, installation and setup of the System

In consideration of the supply, installation and full setup of the System in the Facilities, the Client shall pay to the Supplier a global flat fee of [_____] Euros. This fee shall be payable by the Client in accordance with the timeline included in the Project. In case of absence of specific provisions in the Project, this fee shall be payable as follows:

(a) [_____]% of the fees, plus any taxes imposed thereon, no later than [7 (seven) Business Days] following the satisfaction of the Conditions Precedent; and

(b) [_____]% of the fees, plus any taxes imposed thereon, no later than [7 (seven) Business Days] following the issuance of a positive Installation Validation Report by the Independent Expert.

7.2 Maintenance

In consideration of the planning and implementation of the maintenance services, the Client shall pay to the Supplier:

(a) a [monthly] fee of [_____] Euros, plus any taxes imposed thereon, for the scheduled maintenance work provided in the Project and

(b) an [hourly] fee of [_____] Euros, plus any taxes imposed thereon, for the nonscheduled maintenance work which is not covered by the System warranty;

The fees for the nonscheduled maintenance work which is not covered by the System warranty shall be payable by the Client in accordance with the timeline included in the Project. In case of absence of specific provisions in the Project, this fee shall be payable no later than [3 (three) Business Days] after the end of the base-month when the relevant maintenance work has been performed.

## 8 Term

Subject to Clause 11, the term of this Agreement shall be equal to the entire period of the Energy Saving Warranty (as defined in Clause 9 below) [plus 90 (ninety) days].

## 9 Energy Saving

9.1 The Supplier represents and warrants to the Client that, upon installation and setup of the System, the Client shall obtain a Committed Energy Saving of at least [_____]% of the Client's current annual energy consumption, equivalent to [_____][kWh/year] as indicated in the Project, for a period of [_____] years from the issuance of a positive Installation Validation Report by the Independent Expert (the **Energy Saving Warranty**). The Client is entering into this Agreement placing reliance on the Energy Saving Warranty, which is a fundamental term of this Agreement.

9.2 In order to determine whether or not the Committed Energy Saving has been achieved, the tests described in Clause 9.3 below shall be run on an annual basis following the issuance of a positive Installation Validation Report, for purposes of assessing the percentage of the actual energy efficiency gained during each annual period being assessed (the **Achieved Energy Saving**) and the difference, if any, between the Committed Energy Saving and the Achieved Energy Saving during such period. In order to calculate the Indemnification for Committed Energy Saving Shortfall, the Parties hereby agree that in case of a negative deviation, *i.e.*, if the Energy Saving Achieved is lower than the Committed Energy Saving, the Supplier shall pay to the Client an indemnification of [_____] Euros for each negative percentage of deviation.

By way of illustration, if the Committed Energy Saving is 40% and the Achieved Energy Saving in a given assessment period is 10.6% only, there would be a negative deviation of 29.4% (i.e. 40% - 10.6%). If the Parties had agreed to an indemnification of €300.00 (three hundred Euros) for each negative percentage of deviation, the total indemnification would correspond to €8,820.00 (eight thousand, eight hundred and twenty Euros).

This indemnity obligation shall be immediately terminated in case of disassembly and/or displacement of the System by the Client.

9.3 The Parties shall run, on a regular basis, the following performance tests or performance assessment of the System:

(a) one year after the issuance of a positive Installation Validation Report, the Independent Expert shall asses the performance of the System, based on the information provided by the Supplier's Supervisor and on the data of the data-logger and the operational factors provided in the Project, and assess (the **Initial Assessment**):

(i) the Achieved Energy Saving during the first year of operation of the System;

(ii) the difference between the Committed Energy Saving and the Achieved Energy Saving for such period;

(iii) the Indemnification for Committed Energy Saving Shortfall for such period, if any.

Upon completion of the First Annual Validation, the Independent Expert shall sign and deliver to each Party a copy of the Certificate of Initial Assessment, which shall be prepared in the form of Schedule 4 hereto.

(b) Following the Certificate of Initial Assessment, the Parties hereby agree that the Client's Supervisor and the Supplier's Supervisor shall run performance tests or assessments -if applicable on an annual basis until the end of the

Energy Saving Warranty (each, a **Periodic Assessment**) to assess, for each given year:

(i) the Achieved Energy Saving resulting from the operation of the System during such year;

(ii) the difference between the Committed Energy Saving and the Achieved Energy Saving for such period;

(iii) the Indemnification for Committed Energy Saving Shortfall for such period, if any.

For the Periodic Assessments, the tests or the performance assessments shall be jointly performed by both the Client's Supervisor and the Supplier's Supervisor in compliance with the methodology and calculation agreed and used during the First Annual Validation. The Client shall grant the Supplier's Supervisor access to the Facilities to the extent necessary for the joint performance of the Periodic Assessment with the Client's Supervisor. Upon completion of such tests, the Supplier's Supervisor and the Client's Supervisor shall document the results in a Certificate of Periodic Assessment in the form of Schedule 4 hereto without involvement of the Independent Expert. In case of Committed Energy Saving shortfall or any discrepancies between the assessments of either of the supervisors, a Certificate of Periodic Assessment will not be issued; however, both the Client's Supervisor and the Supplier's Supervisor shall provide in writing, a detailed and reasonable explanation for each of their opinions and provide a copy of such document to both the Parties. Upon receipt of such document, any of the Parties may submit this as a conflict to the Independent Expert, who shall settle such conflict in its capacity as an independent expert acting as an arbitrator. The detailed proceeding to be followed in such cases is described in Schedule 5 hereto.

## 10 Independence of the Parties, absence of employment relationship

[Nothing contained in this Agreement shall be construed as establishing an employer-employee, partnership or independent contractor relationship between the Parties. The Supplier agrees to comply with its employment and social security obligations and to indemnify the Client from and against any losses arising out of a breach thereof.][*This clause may be retained/omitted/modified depending upon the domestic contract laws of the jurisdictions involved.*]

## 11 Termination

11.1 This Agreement shall automatically terminate upon expiration of its term as per Clause 8.

11.2 This Agreement may be terminated by:

(a) mutual agreement between the Parties communicated in writing;

(b) at the election of the non-breaching Party, in case of a material breach of any obligations hereunder by the other Party, except if such breach can be cured and is in fact cured no later than [10 (ten) Business Days] from the receipt by the breaching Party of a written notice from the non-breaching Party requesting such cure. The breaching Party's failure to cure a breach within the period set forth herein shall give the non-breaching Party the right to terminate this Agreement by written notice to the breaching Party, without prejudice to any additional claims for losses and damages resulting therefrom;

(c) in case of a force majeure that prevents a Party from fulfilling its obligations hereunder, such Party may notify the other Party in writing explaining the relevant events of force majeure preventing such performance, how long it expects these events to last (if feasible) and any measures adopted to mitigate damages to the other Party (the **Force Majeure Notice**), in which case the compliance with obligations affected by the event of force majeure shall be suspended. For the avoidance of doubt, a Party's own strike or voluntary non-performance of the terms of this Agreement in the absence of any events preventing the performance of this Agreement shall not be deemed an event of force majeure. Notwithstanding the foregoing, no later than [_____] following the receipt of a Force Majeure Notice, any of the Parties may terminate this Agreement, it being agreed that any mutual performance shall be restituted, reversed or reimbursed as the case may be, but no losses and damages shall be due by one Party to another. ;

11.3 Except where expressly specified to the contrary, termination of this Agreement shall not affect any of the Parties' rights and remedies that have accrued as at termination, including the right to claim damages in respect of any breach of this Agreement which existed at or before the date of termination.]

11.4 Any provision of this Agreement that expressly or by implication is intended to come into or continue in force on or after termination shall remain in full force and effect.

## 12 General

12.1 **Confidentiality**.

(a) Each Party undertakes that it shall not at any time during this Agreement, and for a period of [five **OR** [NUMBER]] years after termination of this Agreement, without the written consent of the other Party, disclose to any person any confidential information concerning this Agreement, the terms of this Agreement, the business, affairs, customers, clients or suppliers of the other Party [or of any member of the group to which the other Party belongs], except as permitted by Clause 12.1(b). [For the purposes of this Clause, **group** means, in relation to a Party, that Party, any subsidiary or holding company from time to time of that Party, and any subsidiary from time to time of a holding company of that Party.]

(b) Each Party may disclose the other Party's confidential information:

(i) to its employees, officers, representatives or advisers who need to know such information for the purposes of exercising the Party's rights or carrying out its obligations under or in connection with this Agreement. Each Party shall ensure that its employees, officers, representatives or advisers to whom it discloses the other Party's confidential information comply with this Clause 12.2;

(ii) as may be required by law, a court of competent jurisdiction or any governmental or regulatory authority;

(iii) if the information is or becomes publicly available (other than by breach of this Agreement);

(c) No Party shall use any other party's confidential information for any purpose other than to perform its obligations under this Agreement.

12.2 **Entire agreement**.

[This Agreement constitutes the whole agreement between the Parties relating to the Project to the exclusion of any terms implied in law that may be excluded by contract. They supersede and extinguish any and all prior discussions, correspondence, negotiations, drafts, arrangements, understandings or agreements relating to the Project. *Provided*, however that this Clause does not limit or exclude any liability for fraud.][*Note: this clause may need to be modified in different jurisdictions, depending upon applicable domestic contract law.*]

**12.3 Variation**

No variation of this Agreement shall be effective unless it is in writing and signed by or on behalf of each Party.

**12.4 Waiver**

No failure or delay by a party to exercise any right or remedy provided under this Agreement or by law shall constitute a waiver of that or any other right or remedy, nor shall it prevent or restrict the further exercise of that or any other right or remedy. No single or partial exercise of such right or remedy shall prevent or restrict the further exercise of that or any other right or remedy.

12.5 **Severance**.

(a) If any provision of this Agreement is held to be invalid or unenforceable by any judicial or other competent authority, all other provisions of this Agreement will remain in full force and effect and will not in any way be impaired.

(b) If any provision of this Agreement is held to be invalid or unenforceable but would be valid or enforceable if some part of the provision were deleted or amended, the provision in question will apply with the minimum modifications necessary to make it valid and enforceable.

(c) If any provision or part-provision of this Agreement is deemed deleted under this Clause, the Parties shall negotiate in good faith to agree a replacement provision that, to the greatest extent possible, achieves the intended commercial result of the original provision.

**12.6 Further assurance**. Each Party shall, and shall use all reasonable endeavours to procure that any necessary third party shall, promptly execute and deliver such documents and perform such acts as may [reasonably] be required for the purpose of giving full effect to this Agreement.

12.7 **Notices**.

(a) Any notice to be given under this Agreement must be in [English] and in writing, and may be served by hand, by first class post or airmail (pre-paid and signed for in each case) or by email to the address, or email address (as applicable) given below, or to such other address or email address as may have been notified by any Party to the other Parties for this purpose (which shall supersede the previous address, or email address (as applicable) from the date on which notice of the new address is deemed to be served under

(b) All notices shall be in writing and delivered (i) by hand with receipt confirmation by the other Party, (ii) through a notary, (iii) by certified facsimile (iv) by regular mail or e-mail or any other means with return receipt and duly addressed to the Client's Supervisor or the Supplier's Supervisor, as the case may be, whose contact information may be found below:

| | | |
|---|---|---|
| | [Supplier's Supervisor] | |
| | | |
| | | |
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(b) A notice or other communication shall be deemed to have been received: if delivered personally, when left at the address referred to hereinabove; if sent by pre-paid first class post or other next working day delivery service, at [9.00 am **OR** [TIME]] on the [second **OR** [NUMBER]] Business Day after posting; if delivered by commercial courier, on the date and at the time that the courier's delivery receipt is signed; or, if sent by [fax or] email, one Business Day after transmission.

(c) The provisions of this Clause do not apply to the service of any proceedings or other documents in any legal action.

**12.8 Third party rights**. No one other than a Party to this agreement shall have any right to enforce any of its terms.

**12.9 Governing law**. This Agreement, and any dispute or claim (including non-contractual disputes or claims) arising out of or in connection with it or its subject matter or

formation, shall be governed by, and construed in accordance with the law of [England and Wales].

**12.10** **Jurisdiction**. Each party irrevocably agrees that the courts of [England and Wales] shall have exclusive jurisdiction to settle any dispute or claim (including non-contractual disputes or claims) arising out of or in connection with this agreement or its subject matter or formation.

**12.11** **Data Privacy**. The data privacy obligations in connection with this Agreement are set out in Schedule 6.

This agreement has been entered into on the date stated at the beginning of it.

[SIGNATURE PAGE]

**Schedule 1 Project**

[To be provided by the Supplier]

**Schedule 2 Formula for calculation of the Committed Energy Saving**

The Committed Energy Saving will be calculated based on the actual conditions of the installation of the System and the estimated usage data, in accordance with the following formula

$$ES_{commited}(\%) = \left(\frac{I_{br} - I_{ar}}{I_{br}}\right) * 100$$

Where:

- $I_{br}$ means the index prior to the installation of the System, obtained by the operation of preexisting installations. This index will be based upon:
  (i) On-site measurements of pre-existing installations (kW, kWh…)
  (ii) Operational factors (number of units, operating hours, [charges // load])
- $I_{ar}$ means the index after the installation of the System for the validation of the proposal. This index will be based upon:
  (i) Datasheet of the Manufacturer for the new equipment (kW, kWh, rpm, etc.)
  (ii) Operational factors (number of units, operating hours, [charges // load])

Commited Energy saving will be calculated based on the actual conditions of the installation of the System and the estimated usage data, in accordance with the formula in the methodology handbook per technology.

**Schedule 3 Minimum Project Content**

| | |
|---|---|
| **Regarding the Supplier** | |
| **Regarding the System** | |
| **Regarding the Committed Energy Saving** | |

| | |
|---|---|
| | |
| **Installation of the System** | |
| **Implementation of the System** | |
| **Permits, Licenses and Approvals** | |
| **Fees** | |

**Schedule 4 Form of Certificate of Initial Assessment and Certificate of Periodic Assessment**

***CERTIFICATE OF ASSESSMENT IN CONNECTION WITH THE SYSTEM'S SUPPLY, AND MAINTENANCE OF AGREEMENT ENTERED INTO BY AND BETWEEN [CLIENT'S NAME] AND [SUPPLIER'S NAME] AS OF [DATE]***

***Date of Assessment:****……..*

*…. Initial Assessment*
*….Periodic Assessment*

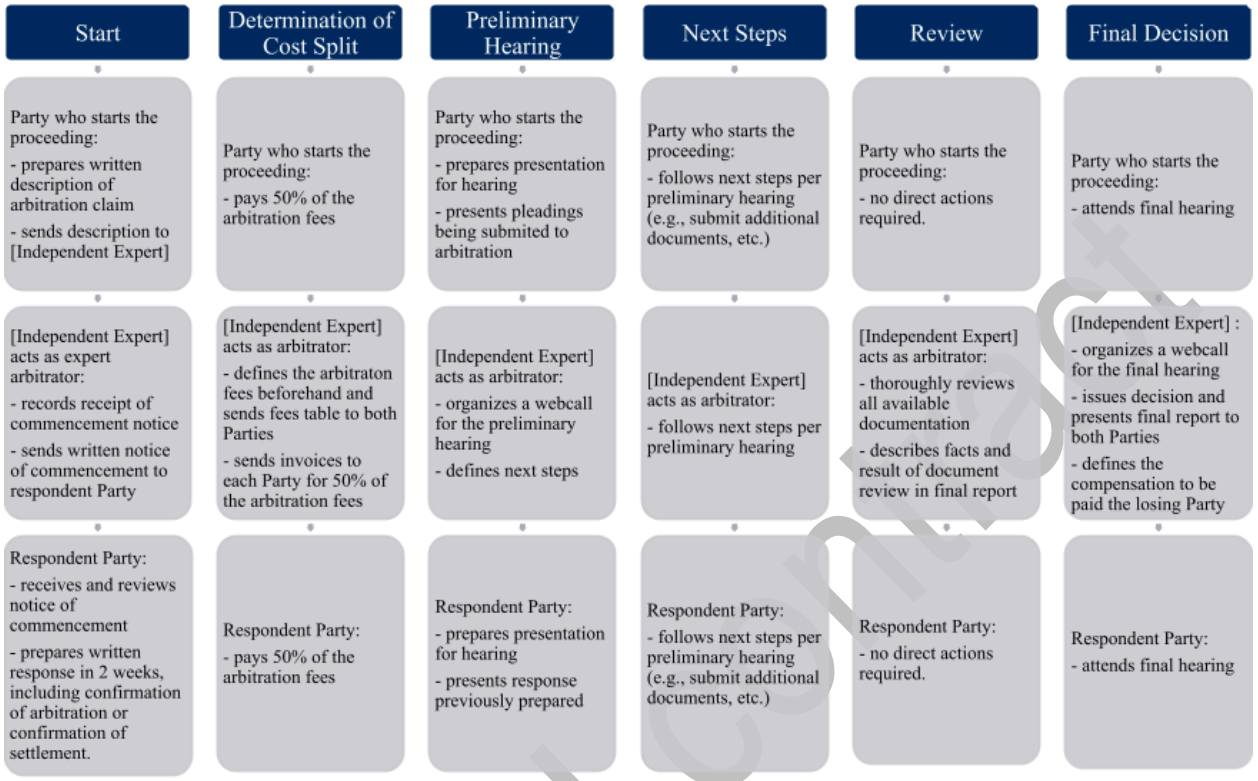
***Operating Period of the System subject to Assessment:***
*From …… through ……*

***Party Responsible for Assessment:***
*……*
*……*
*……*
*……*
*……*
*……*
*……*

***Achieved Energy Saving:*** *..... %*
***Difference from Committed Energy Saving:*** *……..%*
***Indemnification for Committed Energy Saving Shortfall:*** *…… Euros.*

*[Location], [date]*
*[Signatures]*

## Schedule 5 Proceeding before Independent Expert for disputes relating to a periodic assessment



## Schedule 6 Data Protection Obligations

1. For the purpose of this Schedule the terms "Controller", "Processor", "Data Subject", "Personal Data", "Supervisory Authority" and "Processing" will be as defined in applicable Data Protection Legislation, and "Process" and "Processed" will be construed accordingly.

2. The Parties undertake that they will comply, and take all reasonable steps to cause their employees, agents and subcontractors to comply with, all applicable Data Protection Legislation in connection with the performance of their obligations under this Agreement.

3. The Parties acknowledge and agree that, for the purposes of applicable Data Protection Legislation, the applicable Recipient is the controller, and the applicable Provider is the processor, of any Personal Data provided by such Recipient to enable the provision of the Services.

4. In processing Personal Data on behalf of the applicable Recipient during the provision of the Services, the applicable Provider (acting as processor) shall:

   (i) only act on the instructions of the Recipient, as set out in this Agreement or as otherwise documented by the Recipient, unless any applicable laws require otherwise, in which case, the Provider shall promptly notify the Recipient of such legislative requirement before processing such Personal Data (unless the Provider is barred from notifying the Recipient under any applicable laws);

   (ii) implement and maintain at all times during the term of this Agreement appropriate technical and organisational measures to protect such Personal Data against accidental or unlawful destruction or accidental loss, alteration, unauthorised disclosure or access, taking into account the state of the art, the costs of implementation and the nature, scope, context and purposes of the processing;

   (iii) ensure the reliability of any person that the Provider discloses such Personal Data to, including by ensuring such persons have committed themselves to confidentiality or are under an appropriate statutory obligation of confidentiality in respect of such Personal Data;

   (iv) only transfer Personal Data outside the European Economic Area in accordance with applicable Data Protection Legislation. If the Provider is required by applicable law to transfer such Personal Data outside of the European Economic Area, the Provider shall inform the Recipient of such requirement before making the transfer (unless the Provider is barred from making such notification under applicable law);

   (v) provide reasonable cooperation as requested by the Recipient to assist the Recipient with responding to any request from a Data Subject, and in ensuring compliance with its obligations under the Data Protection

Legislation with respect to security, breach notifications, data protection impact assessments and consultations with Supervisory Authorities;

(vi) notify the Recipient without undue delay on becoming aware of a Personal Data breach and reasonably assist the Recipient, at the Recipient's request and cost, in ensuring compliance with the Recipient's obligations under applicable Data Protection Legislation with respect to Personal Data breach notifications;

(vii) upon the termination or expiry of the Agreement for any reason, promptly (at the Recipient's election) delete, or return to the Recipient, all such Personal Data, unless it is necessary for the Provider to retain certain copies of such Personal Data to comply with any applicable laws; and

(viii) maintain and make available to the Recipient, on the Recipient's request, complete and accurate records to demonstrate its compliance with this Clause 13 and allow for audits and inspections by the Recipient or the Recipient's designated auditor on reasonable written notice

5. The Recipient hereby generally authorises the Provider to engage sub-processors of the Personal Data, including any member of the Provider's Group, for the provision of the Services. The Provider shall notify the Recipient of any intended new sub-processor of such Personal Data and provide the Recipient with a reasonable period to object to such new sub-processor's engagement. The Provider shall ensure that any sub-processor of the Personal Data is under an obligations with respect to the Personal Data that are no less protective than the provisions of this Schedule. The Provider shall remain fully liable for performance of any sub-processor's obligations under this Agreement.

6. Each Party shall promptly, and without undue delay, notify the other Party and provide reasonable assistance as requested, where it becomes aware of any Data Subject complaint in relation to the other party's Personal Data, or, unless and to the extent required by applicable law, any communication by a relevant data protection authority in relation to the Personal Data of the other party Processed pursuant to this Agreement.