



USER REQUIREMENTS SPECIFICATION FOR ICP COMPLIANT SOFTWARE

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1.0 INTRODUCTION TO ICP

The Investor Confidence Project (ICP) Europe, is an Energy Efficiency (EE) initiative addressing investment market barriers, which have been repeatedly identified as the main impediments to mass scaling of EE investments in Europe, by the International Energy Agency, the Buildings Performance Institute Europe, the Energy Efficiency Financial Institutions Group, as well as other relevant EE stakeholders in Europe.

Specifically, the Investor Confidence Project (ICP) Europe aims to unlock access to financing for the building renovation market by standardising how energy efficiency projects are developed and measured. The ICP framework assembles best practices and existing technical standards into a set of protocols that define a clear roadmap for developing projects, determining savings estimates, and documenting and verifying results.

The initiative builds on the successful experience of its United States counterpart, which has been pointed out as a best practice approach by the Energy Efficiency Financial Institutions Group and the International Energy Agency.

The project is supported by the Horizon 2020 European Research and Innovation programme and by the Stiftung family foundation and aims to establish itself as an EU-wide, open access system, to provide more stable, predictable, and reliable savings outcomes and to enable greater private investment through a more efficient transparent marketplace.

1.1 SOFTWARE OVERVIEW

Software can aid the ICP process by leading a user through the standardised process steps towards an ICP Investor Ready Energy Efficiency™ (IREE) project. By providing documentation assembly, access and verification, compliant software packages will enable standardisation to be achieved at scale. This in turn will enable faster development of ICP compliant projects requiring fewer resources.

The 'ICP Virtual Documentation Package' (VDP) may be in the form of an installed or web based software/application, and is most likely to be an 'add-on' to an existing software package. The VDP will need to support the requirements of the ICP Performance Protocols and ICP System as described in this document. Each proposal will then be approved or rejected on a case by case basis as an ICP credentialed application.

2.0 OVERALL DESCRIPTION

The ICP Virtual Documentation Package will facilitate the workflow required to originate, develop and monitor Investor Ready Energy Efficiency™ projects through an automated and secure process.

The developer's software/application will be designed to support the requirements of the ICP Performance Protocols and the ICP System. Specifically, qualifying products must enable managed and easy access to all of the required documentation as well as support the ICP workflow for creating ICP IREE™ projects.

The key users will be:

- Project developers (PDs) – who will be using the software to upload data and documents for review by the QA provider throughout the life of the project. They will also be able to view the status of the QA review.
- QA providers (QAPs) – who will be reviewing submissions from the PDs to determine compliance with the ICP requirements throughout the life of the project, and who will be able to approve or reject submissions made by the PD, and provide a QA status summary.
- Investors, underwriters and building owners – who will be using the software to track the progress of a project towards certification and performance during the operational phase.

2.1 DOCUMENTATION MANAGEMENT

The software should provide a means to access a VDP (user interface screen, tab, layout, folder structure, etc. based on provider's discretion), giving secure access to the documentation specified by the ICP Protocols.

Access should be controlled so that various parties in the process (developers, building owners, QA providers, lenders, underwriters) can access the documentation that they have been permitted to view, upload or download in a secure fashion. This is indicated in the table below.

2.2 DOCUMENT ORGANISATION

The VDP should be organised in such a manner that users can easily locate files according to the ICP project lifecycle as shown below. This also shows the key objectives of each stage within the process.

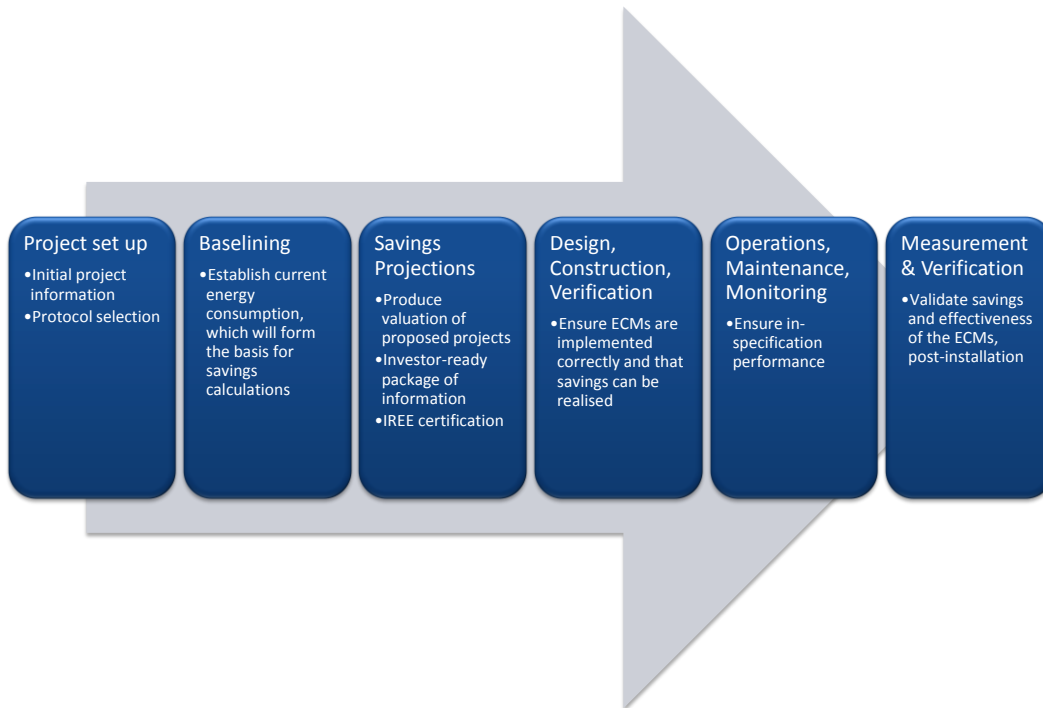


Figure 1: Overall project lifecycle

The following flowchart shows the typical process at each key stage of the project process. At each stage, a similar process takes place:

- Data and documentation are submitted by the PD; the production of some key documents is supported by templates (see section 2.5 in this document).
- The QAP is notified that they are ready to be reviewed.
- The QAP completes the review and either notifies the PD that further information or modifications are required, or that the information provided meets ICP requirements; there should be a means for the QAP to provide status summary and for the PD to respond.
- Information can be submitted and reviewed across different stages concurrently during the Underwriting Phase (stages 1 to 4).
- Note that the initial project information stage (Stage 1) is not a mandatory requirement, but may be helpful in ensuring that the PD selects the appropriate protocol
- When all the required information has been submitted and approved at the Savings Calculation stage (stage 4), the QAP can provide Investor Ready Energy Efficiency (IREE)TM certification to the project.
- The project continues in a similar way through to the Measurement & Verification stage, and is completed at the end of the reporting period.
- All users should be able to view the overall status of the project (in the form of a project ‘dashboard’), and also the progress made at each stage i.e. the information that has been submitted, items pending review and that have been reviewed and approved or that have been reviewed and rejected.

ICP USER REQUIREMENTS DOCUMENT

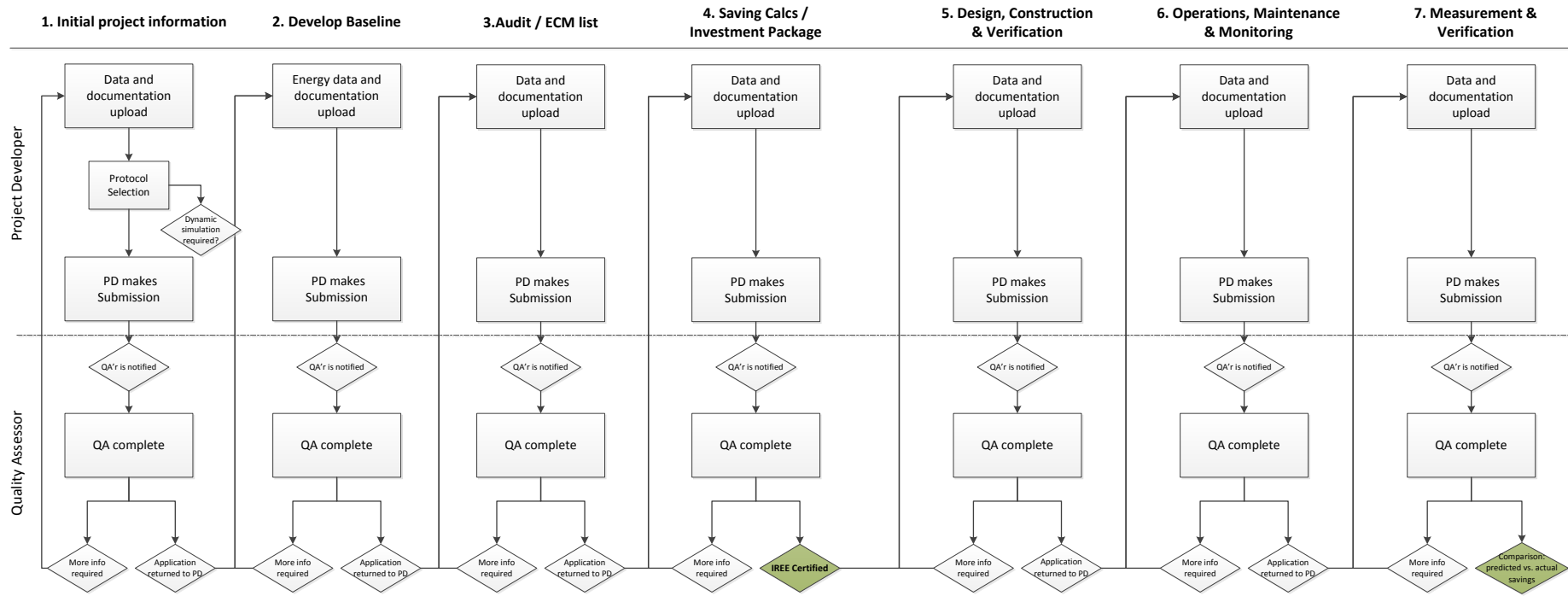


Figure 2: Typical process at each stage of the project process

2.3 USER NOTIFICATIONS

The VDP will send notifications to the relevant user of actions taken by other users and any actions required by them. For example, notification may be sent to a QAP when a PD has uploaded data ready to be reviewed. The notification is likely to take the form of an email, and should include a brief description of the action taken and action required.

2.4 DOCUMENT ASSOCIATION

The documentation required by the ICP Energy Performance Protocols is summarised as software inputs and documentation elements. These are shown in the Appendix of this document. Compliant applications must allow users to easily access each identified data element. How this is accomplished (screen, user interface widget, folders, checklists, tags, etc.) will be left to the software provider's discretion.

2.5 DOCUMENT TEMPLATES

Document templates are available that facilitate fast and efficient creation of key components required by the ICP Protocols. Currently, there are three templates available:

- Operational Performance Verification template
- Operations, Maintenance and Monitoring template
- Measurement and Verification template

These should be incorporated into the software, either as online forms or such that the PD can download these templates, and upload them once completed.

2.6 DOCUMENT VERIFICATION

Applications should enable a workflow allowing for the QAP (or other authorised reviewer) to designate that a project conforms to the ICP specifications (the IREE™ certification). Upon such designation the project data and documentation should be "locked" to prevent retroactive changes.

3.0 MINIMUM SOFTWARE REQUIREMENTS

This section outlines in broad terms the minimum requirements that any software will need to meet in order to become ICP Credentialed. A developer may write a bespoke application, or make alterations to an existing application, to achieve the requirements set out in this document.

Web-based platforms

Developers may decide to meet the requirements of this document using a web-based platform, in which case, the platform should be cross browser compatible.

Installed software requirements

Developers may decide to meet the requirements of this document using installable software. In which case, supported software systems should be compatible with latest versions of Windows and/or Macintosh operating systems. Mobile applications will also be considered.

Document security

Documents should be managed safely and securely. It is therefore required that any organisation developing or hosting the proposed application is accredited to the information security standard, ISO/IEC 27001:2013 Information security management.

Version updates

Periodically, minor modifications to ICP requirements may be made. This may require that updates must be made to the software to reflect these changes and to maintain the credentialed status of the software.

4.0 APPENDICES

Protocol Section	ICP Section	Protocol	Documentation Required	Comments
2	Baselining	All (TT and TAB where relevant to the baseline)	Weather data	Can be the actual weather file or data, or a reference to the source of the data used (e.g. weather station)
2	Baselining	All (TT and TAB where relevant to the baseline)	Baseline utility data	Raw utility data
2	Baselining	All	Description of baseline period	Minimum 12 months period; include start/end dates
2	Baselining	All	Utility rate structures	
2	Baselining	All (TT and TAB where relevant to the baseline)	Energy end-use consumption	Estimates or metered data
2	Baselining	All	Building asset / operational / performance data	Building drawings, equipment inventories, system and material specifications, field survey results and/or CAD take-offs, observations, short-term monitored data, spot measurements, and functional performance test results as appropriate
2	Baselining	TT,TAB	Assessment of interactive effects	
2	Baselining-optional	All	Interval meter data	
2	Baselining-optional	All	Sub-metering data	
2	Baselining-optional	All	On-site weather data	
2	Baselining-optional	All	Calibration certificates	For meters
2	Baselining-optional	All	Owner's rental information	
3	Baselining-Demand	All (TT and TAB where relevant to the baseline)	Copies of utility bills	At least one for electricity and each fuel
3	Baselining-Demand	All (TT and TAB where relevant to the baseline)	Monthly consumption load profiles	
3	Baselining-Demand	All (TT and TAB where relevant to the baseline)	Monthly peak demand	
3	Baselining-Demand	All (TT and TAB where relevant to the baseline)	Interval meter data	

Protocol Section	ICP Section	Protocol	Documentation Required	Comments
4	Savings Calculations	LT,LAB	Modeller qualifications	
4	Savings Calculations	ST,TT,SAB,TAB	Savings calculator qualifications	
4	Savings Calculations	LT,LAB	Model calibration	Demonstrate that the calibration criteria are met
4	Savings Calculations	LT, LAB	Model input files	Including information about modelling software used and version number
4	Savings Calculations	All	Descriptions of ECMs	Including information about any interactive effects
4	Savings Calculations	ST,TT,SAB,TAB	Calculations	Workbooks, spreadsheets and other calculation tools
4	Savings Calculations	All (TT and TAB where relevant to the ECMs)	Weather file	Used for simulation or savings calculations
4	Savings Calculations	All	Calculation results	
4	Savings Calculations	All	Cost estimate details	For each ECM
4	Savings Calculations	All	Bids by trade	If applicable
4	Savings Calculations	All	Quality control statement	Review of model / calculation results against data from comparable projects
5	Design, Const & Verification	All	OPV authority qualifications	
5	Design, Const & Verification	LT,ST,LAB,SAB	OPV Plan	
5	Design, Const & Verification	All	OPV statement of project conformity	Project conforms with audit intent and scope
5	Design, Const & Verification	All	OPV report	
5	Design, Const & Verification	All	Training materials	And record of training
5	Design, Const & Verification	LT,ST,LAB,SAB	System manual(s)	For all new and modified systems and equipment

Protocol Section	ICP Section	Protocol	Documentation Required	Comments
6	OM&M	LT,LAB,ST,SAB	Points list/trending plan	Key variables trended in BMS
6	OM&M	LT,LAB,ST,SAB	Plan for fault detection and remediation	
6	OM&M	All	Operator's Manual and Organisational chart	Persons involved with OM&M, and responsibilities for monitoring and response
6	OM&M	All	Maintenance plans / service response logs	Including warranties for new equipment
6	OM&M	All	Training curriculum	

REFERENCES

ICP Europe's website: <http://europe.eepformance.org/>

ICP Europe Protocols: <http://europe.eepformance.org/protocols.html>

ICP Credentialed software provider packages currently available in the USA:

- [Performance Systems Development](#)
- [Encentiv Energy](#)
- [HELiOS Building Efficiency](#)
- [National Electrical Contractor Association's Energy Conservation and Performance Platform](#)
- [Noesis Energy](#)
- [Sustainable Real Estate Solutions](#)