

JOINT FINAL CONFERENCE

Next Generation Energy Performance Assessment,
Rating and Certification

Towards a Smart and Decarbonised Future for European Buildings

Part 2: Synthesis of insights
Summary of insights from ePANACEA

24 May 2023
Brussels and online





Overview of project insights

Policy and market perspective

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This project has received funding from the European Union's HORIZON 2020 research and innovation programme under grant agreement No 892421

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Initial objectives ePANACEA project

Specific objectives for policy, technology and market

Based on the building energy rating system:

- Improve accuracy of the energy performance assessment results.
- Information adapted to users, professionals and the Administration
- Inclusion of smart and novel technologies
- Convergence for calculations across the European Union
- Gap between calculation results and real consumption data.
- Improve the confidence of users and the banking sector for investment in building rehabilitation.

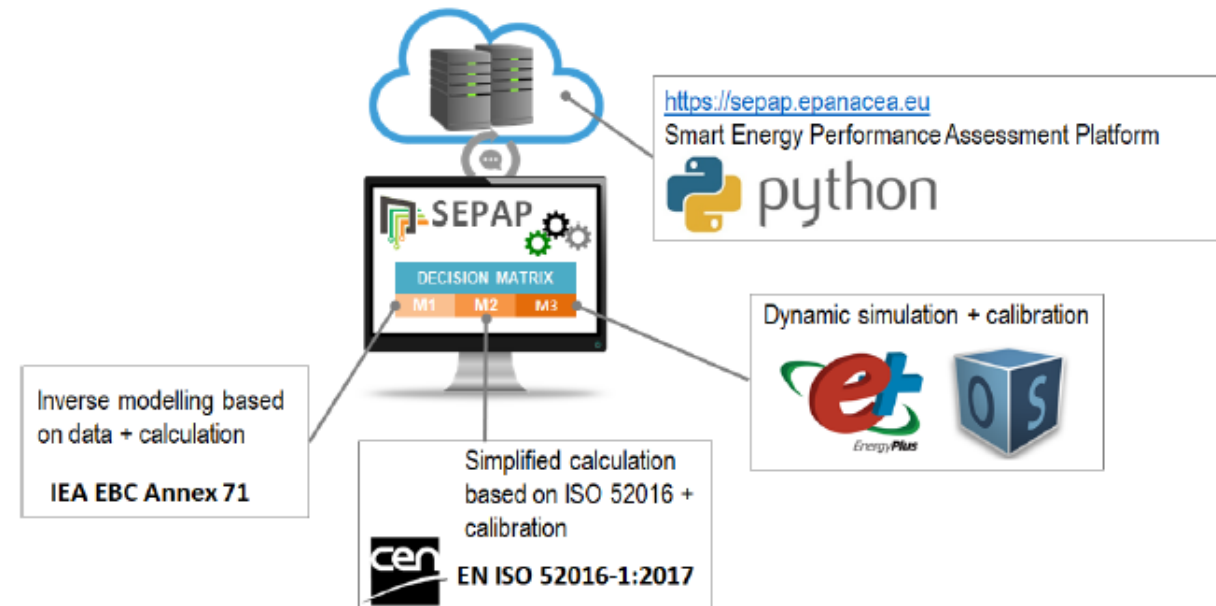


Technological perspective outcomes

- Improve accuracy of the energy performance assessment results.
- Inclusion of smart and novel technologies
- Convergence for calculations across the European Union
- Gap between calculation results and real consumption data.

ePANACEA

- 3 calculation methodologies, for EPC and for energy simulation.
- 3 degrees of depth and precision, adaptability.
- SRI integration and novel technologies
- Intercomparison of methodologies, calculations and results between various Member States. Identification of needs and differences between Member States
- Adaptation to EPBD requirements, present and future



Technological perspective outcomes

Integrated online Smart Energy Performance Assessment Platform (SEPAP)

- Energy evaluation adapted to the needs.
- Improved consideration of user behaviour and occupant patterns.
 - Recommendations related to user behaviour.
- Use of building monitoring data to increase accuracy and develop a standardised format for data acquisition from different sources.
- Cost-optimal, individual business plan for deep renovation of buildings. Building Passport.

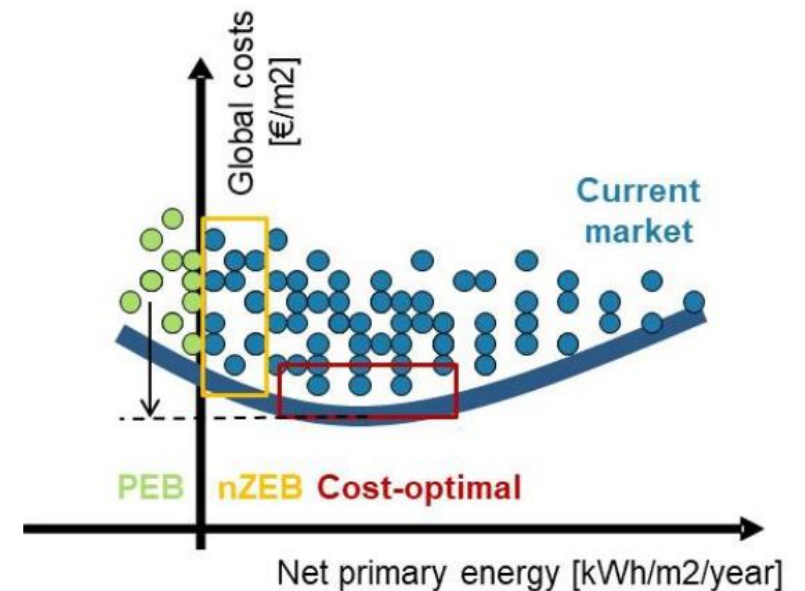


Political perspective outcomes

- Information adapted to users, professionals and the Administration
- Convergence for calculations across the European Union
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- Improve the confidence of users and the banking sector for investment in building rehabilitation

Support for Public Administrations

- Analysis of the needs of the sector, professionals and users
- Tools to facilitate the integration of methodologies across Europe
- Adaptation of current systems to new needs in the revision of the EPBD
- Calculation methodologies specialized in approaching certificate and energy audit as a factor to improve confidence in rehabilitation investments.



Political perspective outcomes

Regional Exploitation Boards (REB)

Dialogues with policy makers and organizations involved in certification

The project has created 5 REBs based on the geographical location of the Member States

Integration in European policies

Feed back between professional sectors and Administration.



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EPBD compliance MEE

Current EPBD revision in progress (based on drafts)

Integration of the SRI that will already be mandatory

EPC actual consumption

Improves confidence MEPs

Mechanisms to improve financing rehabilitations

Annex V indicators and EPC content



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Overview of project insights of user-related tasks

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User related tasks in ePANACEA

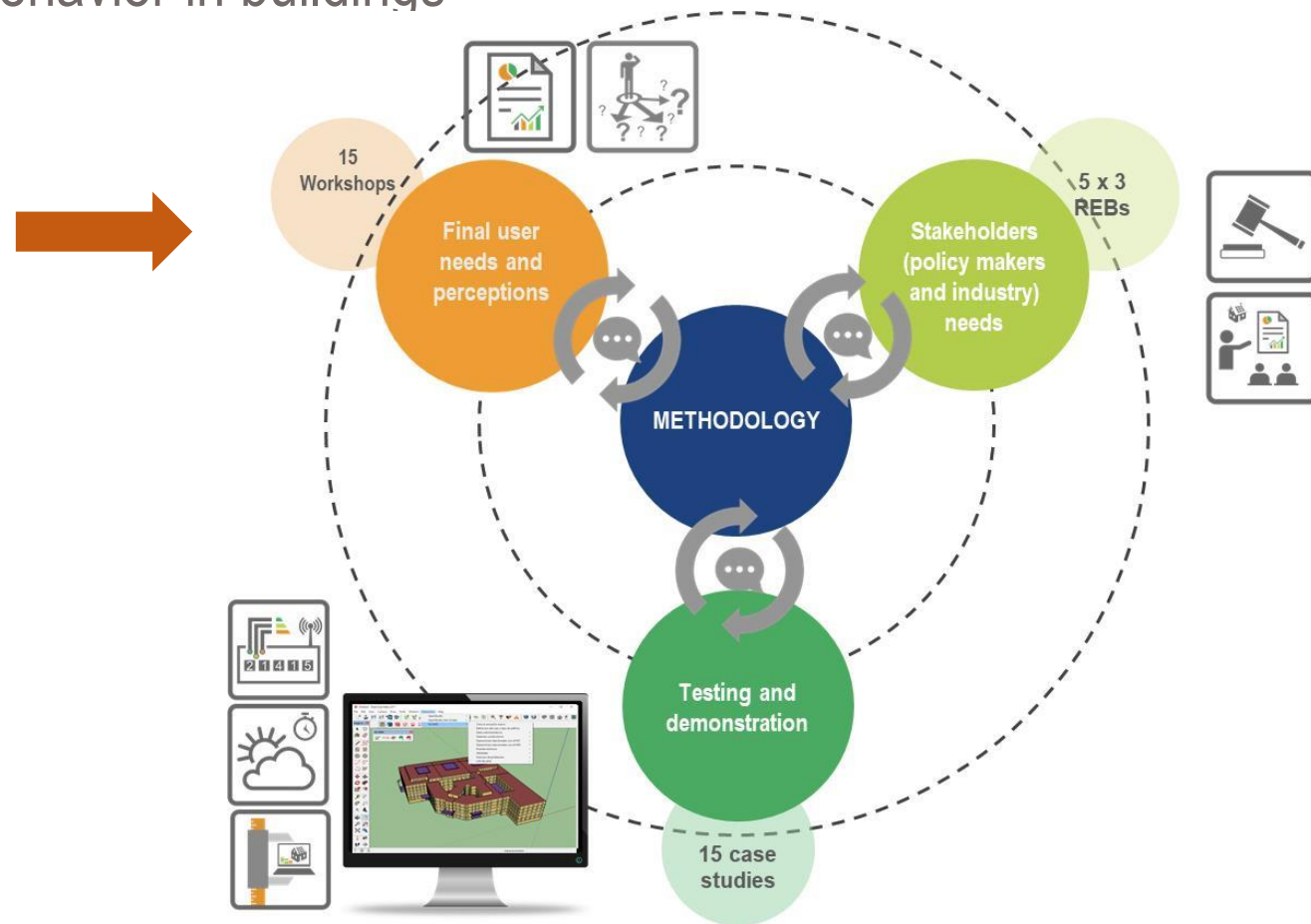
Participatory actions + research on energy behavior in buildings

Purpose of feedback loop with users of EPC:

integration of users' critiques, needs and suggestions for improvement in the development of the methodology and new EPC summary pages in order to raise awareness and to increase acceptance and use of EPC.

Field study in ePANACEA pilot countries:

Spain (CENER); Belgium (Flemish region) (VITO); Finland (VTT); Austria (EASt); Greece (CRES)



Overview of participatory actions

Field-study in 5 ePANACEA pilot countries

What?

- **Stakeholder interviews:** gaining deeper understanding of users' perceptions, knowledge and current use of EPC + first insights on critiques and needs regarding EPC

3 round of user workshops

- **1st workshop:** Users' needs, critiques and suggestions to improve current national EPCs
- **2nd workshop:** Users' acceptance and preferences of ePANACEA proposals for a new EPC oriented towards end-users and collection of suggestions for improvement
- **3rd workshop:** „2nd acceptance test of EPC“: comparison of participants' acceptance regarding current EPCs and new EPC summary pages



Participatory actions with EPC users

Target groups in all participatory actions

Who? - “all stakeholders along the „value-chain“

End-users of EPC + other stakeholders

- **End-users:** building occupants, owners and tenants, building managers
- **Other stakeholders:** all who have influence on the opinion-building process regarding EPC and energy efficiency in buildings by end-users: (e.g. policy makers, energy advisors, architects, multipliers of EPC like real estate companies, housing associations, landlords, craftsmen).

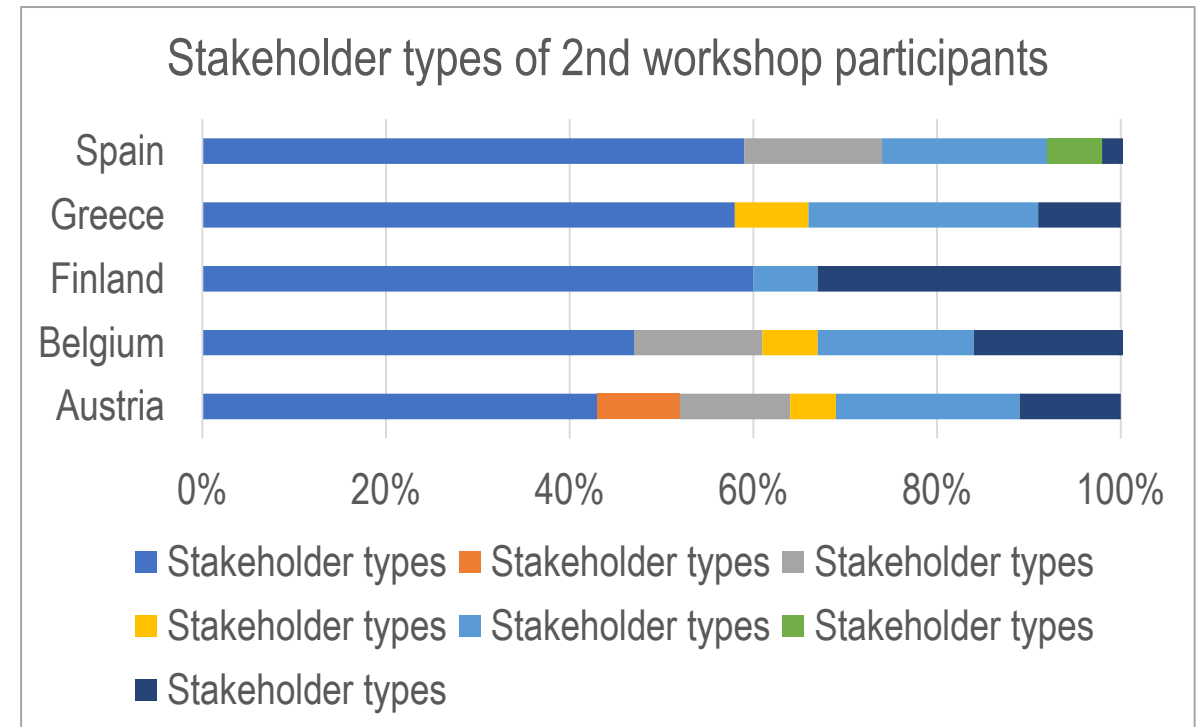


Participation in interviews and workshops

Number of participants and stakeholder types

Table 1: Number of participants in all participatory actions in ePANACEA pilot countries

ePANACEA pilot country	n° participants
<i>Belgium (Flanders)</i>	66
<i>Spain</i>	90
<i>Austria</i>	86
<i>Greece</i>	85
<i>Finland</i>	40
<i>+ Germany</i>	8
Total participatory actions	375



Insights on user perception and needs

Stakeholder interviews & 1st round of user workshops



End-users and experts have different needs:

- **End-users:** feedback about real energy consumption and energy costs, connected to reliable information about individual recommendations including hints for every-day energy behavior
- **Experts:** point out original purpose of the EPC – a tool to compare the EE of buildings - which excludes information about the real energy consumption.
- **ePANACEA** proposes a way to integrate the “end-user dimension“ by providing information based on actual conditions as a supplement to end-users.

Figure 1: Perceptions regarding EPC from all ePANACEA pilot countries



Further recommendations for an adequate EPC

Stakeholder interviews & 1st round of user workshops

- Streamlining the content of EPC and making it easy to understand: **Core EPC + add-on** and references to other sources of information for interested users (costs rise with a more comprehensive EPC!)
- **Splitting the EPC into 2 versions**: 1 for end users (with very visual and simple presentations) and 1 for authorities (more technical version) due to different levels of understanding.
- Making the energy assessment and certification **more dynamic**: using database with current information about energy costs, conversion factors etc.). → digital or web-based EPC.
- More **communication** about the EPC and energy efficiency is desired between end users and EPC issuers/intermediaries such as city councils and building managers and end users.



Research on energy behavior in buildings

Integration of actual information regarding the user in EPCs

- Occupant behaviour (presence and actions by occupants) influences energy consumption in buildings
- Currently overly simplified assumptions for building energy simulation (BES) but there is large diversity in household characteristics, preferences and lifestyles
 - One of the sources of the energy performance gap

ePANACEA approach

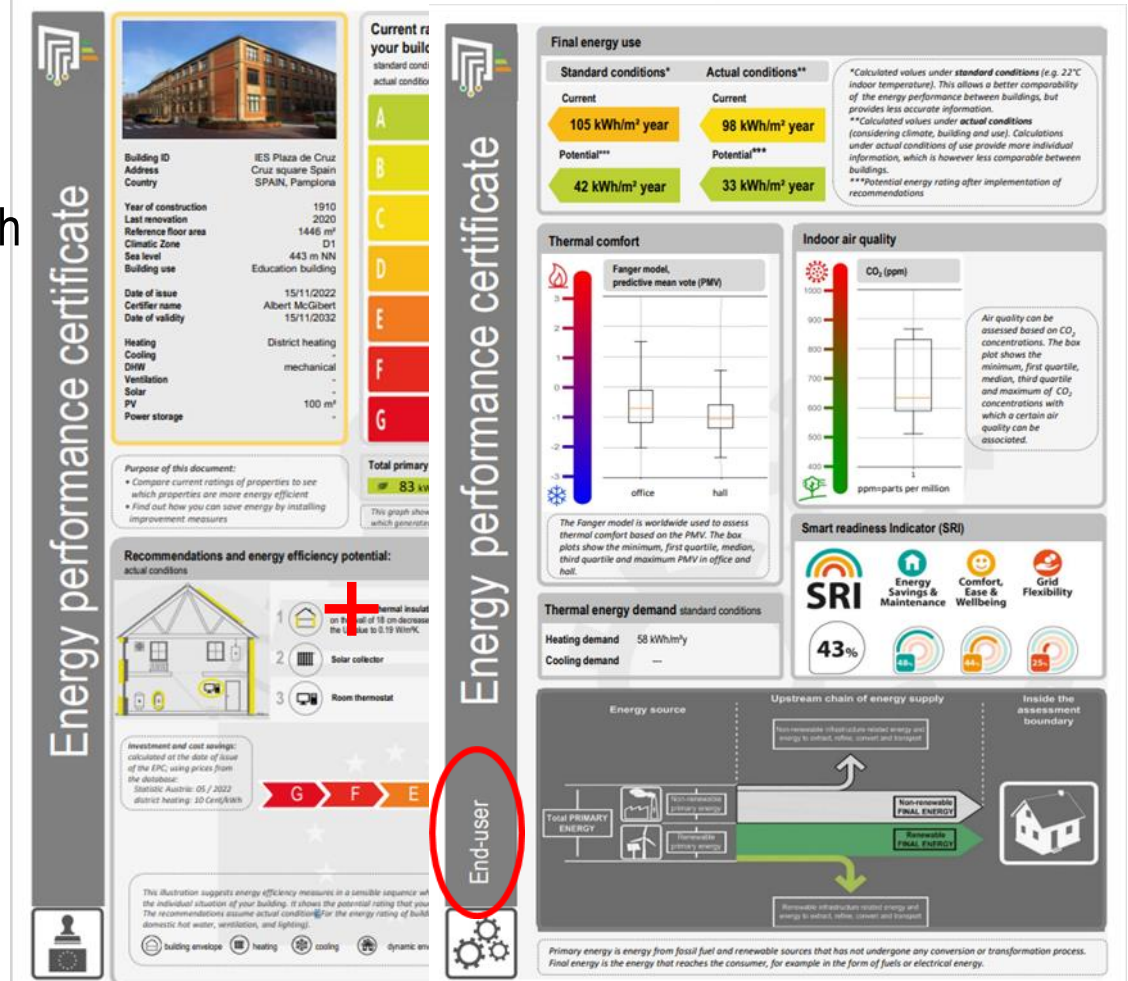
- Integration of actual conditions of use in ePANACEA through the use of a calibrated model
- Presentation of information based on a standard and actual conditions in the EPC (purpose and meaning needs to be well explained to end-users)
 - meets end-users' demand on more individual and tailored information through the reduction of the energy gap
 - visualizes the effect of energy behavior on energy efficiency in buildings



New EPC summary pages

Development process and main features

- Developed based on input from workshops, REB meetings, feedback from project partners and aligned with the ePANACEA methodology
- 4 summary pages, 2 oriented towards all and 2 oriented towards end-users
- Includes information based on standard and actual conditions of use
- **Outcomes of final acceptance test:**
 - Perceived as useful by the majority but must be even easier to understand for end-users
 - Distinction between a core and additional information needed → could be realized through a digital (and interactive) EPC e.g. in a follow-up project



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