SUSTAINABLE PLACES 2024

23-25 September 2024

Luxembourg

www.sustainableplaces.eu

LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY LIST

R2M RESEARCH TO MARKET SOLUTION

Facilitating the energy transition: policy, finance, training

WORKSHOP

EPBD Implementation: Smartness for Energy Efficiency

24 September, 09h00 - 12h30 CEST

easy SRI

Smarter EPC

SRI2MARKET

unES

Masterpiece

SMART2 ENHANCING THE INTELLIGENCE OF BUILDINGS IN EUROPE

SRI-ENACT Co-creating Tools and Services for Smart Readiness Indicator Uptake

iEPB

These projects have received funding from the European Union's Horizon 2020, Horizon Europe and LIFE programmes. The European Union is not liable for any use that may be made of the information contained in the documents prepared by the projects' consortia, which are merely representing the authors' view.

Life

Masterpiece

Multidisciplinary Approaches and Software Technologies for Engagement, Recruitment and Participation in Innovative Energy Communities in Europe

Joining and participation AI-powered tool (ECOOP)

Dr.Habib NASSER, RDIUP

SP2024
24 September 2024
Luxembourg

SUSTAINABLE PLACES 2024

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101096836

Joining and participation tool (ECOOP)

ECOOP (RDIUP)

Description of the tool: ECOOP is an open ecosystem that offers novel AI services to bring together managers, producers, and consumers, to build and scale energy communities through various digital tools.
ECOOP delivers high, secure, trustful, and GDPR compliant solutions. This web platform serves as a foundation for establishing energy cooperatives and developing shared assets, fostering collaborative efforts in building a unique energy community.

Actual Status: Working and online version, to be improved (copyright RDIUP)

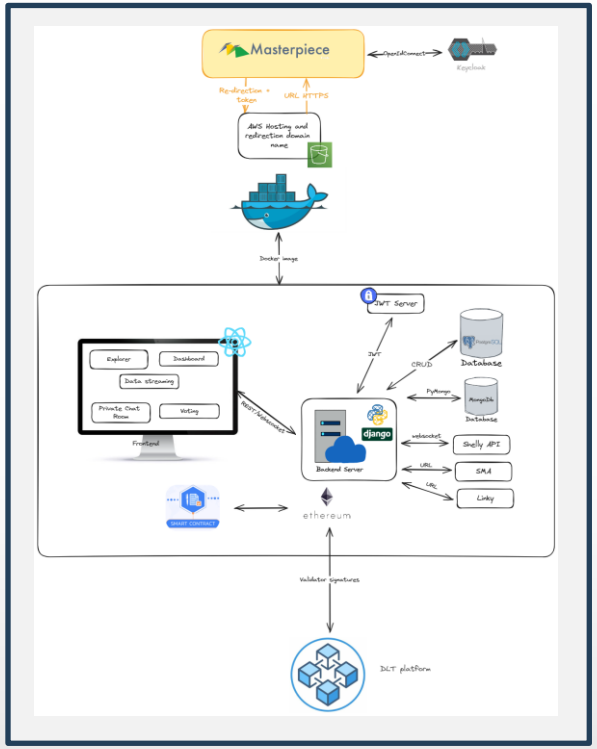
Main functionalities:

EC members and managers

- ECOOP enables participants (portfolios) to verify their eligibility to join ECs and send invitations.
- ECOOP provides a private chat interface to facilitate communication among members of different ECs, along with a voting system (Blockchain) to enhance governance.
- It also allows for the creation of meetings and events, as well as receiving notifications.
- ECOOP offers essential information, charts, and Key Performance Indicators (KPIs) about ECs,.
- ECOOP features a map-based exploration space to visualize ECs and portfolios, facilitating proximity eligibility studies through simple visual aspects.
- ECOOP provides an interface for configuring and unifying APIs (such as Shelly, Linky, and SMA).

EC managers

- ECOOP empowers EC managers to identify potential participants within eligible areas/conditions and send them invitations to join the EC.
- ECOOP offers a user interface space to configure benefits sharing and a section for monthly reporting by EC managers.
- ECOOP will introduce a new feature for signing and sharing official or private documents among EC members



Technologies

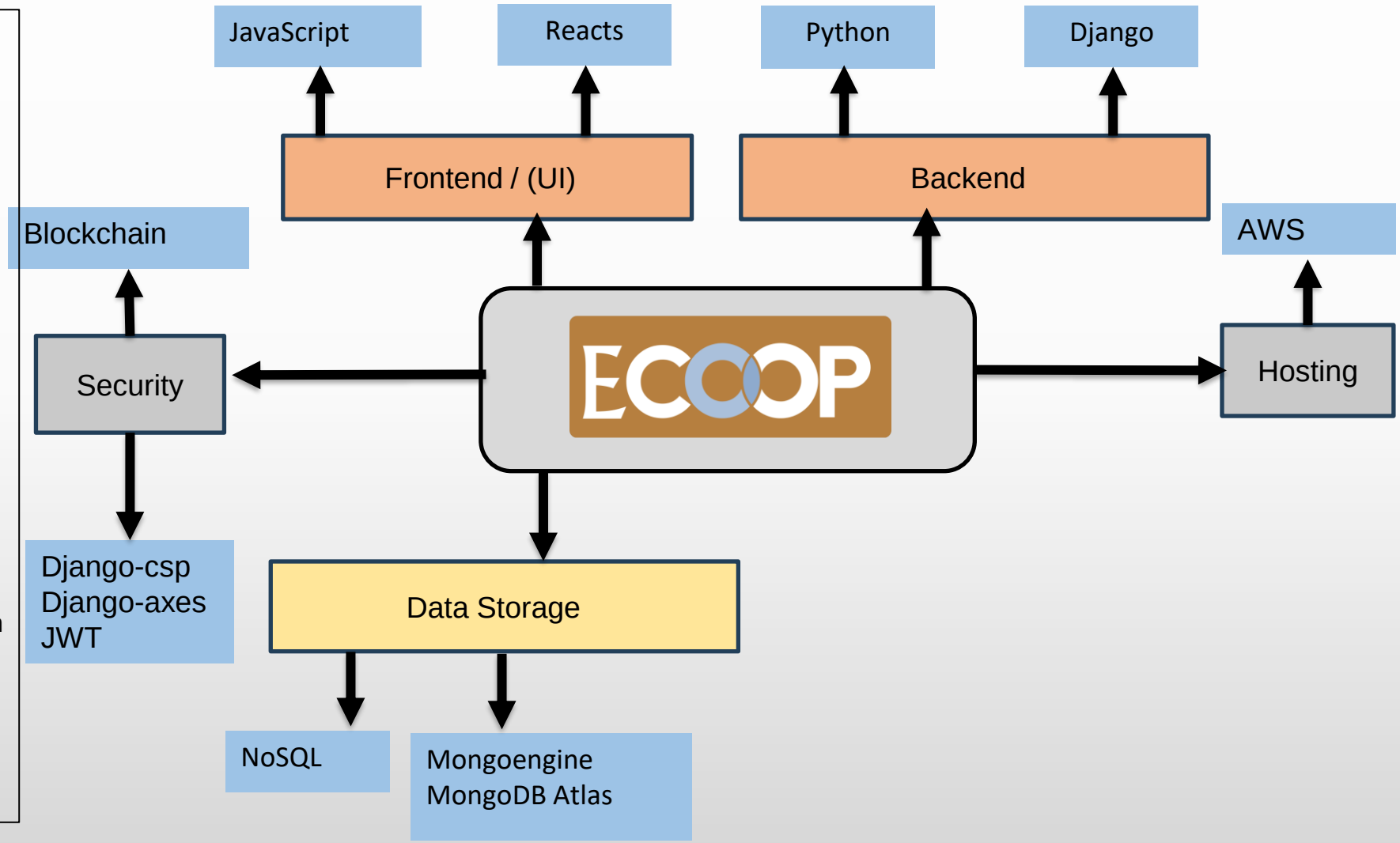
Description of the main technical developments :

Backend

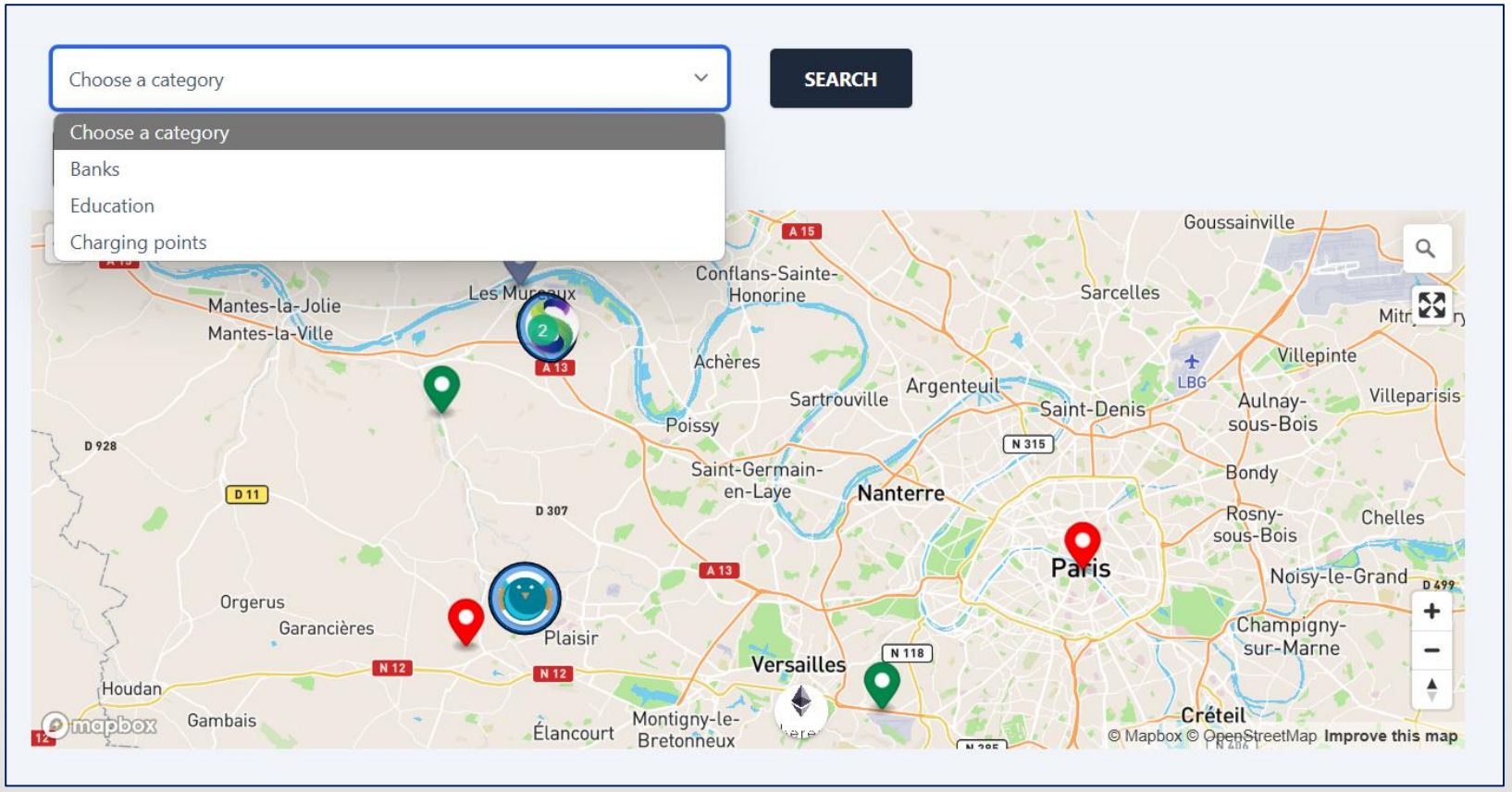
- Develop algorithms for sharging benefits
- Unify the API for data monitoring
- Implement the joing and invitation mechanims
- Include the local regulation linked to ECs

Frontend

- Implement multi-language feature
- Add the notification for messages, events, votes and joining
- Enahnce the Cards for the private chatRoom and event interfaces
- Develop UIs for map-based exploration of ECs and portfolios
- Implement SignDoc UIs



Eligibility process

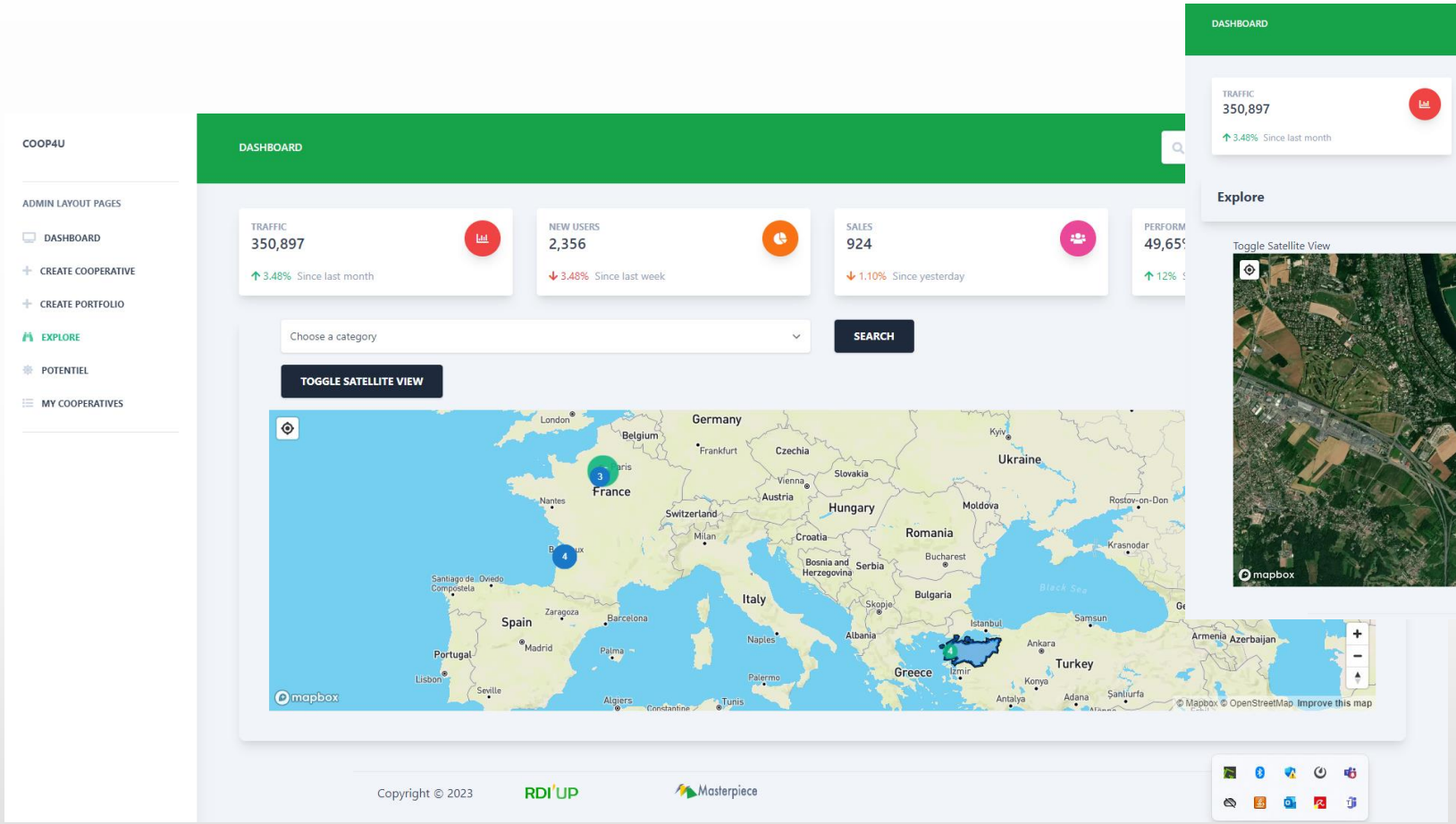


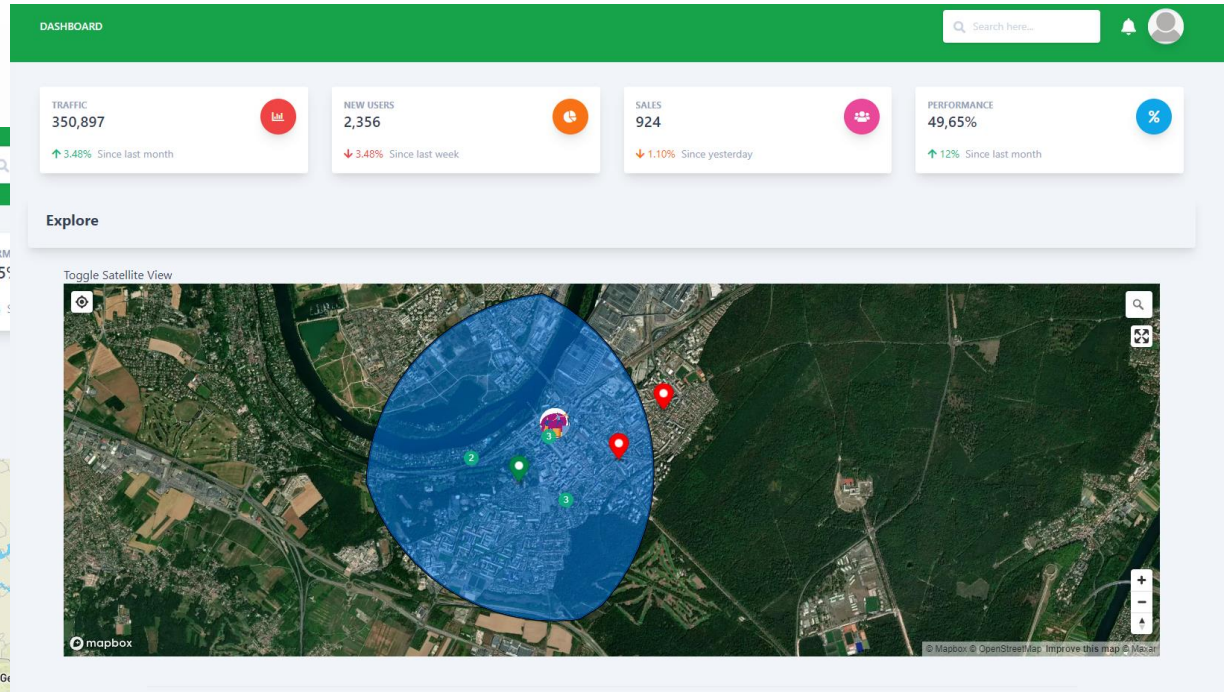
Map-based algorithm for eligibility analysis

- Markers
- Colors
- Participation
- Eligible or not

Masterpiece

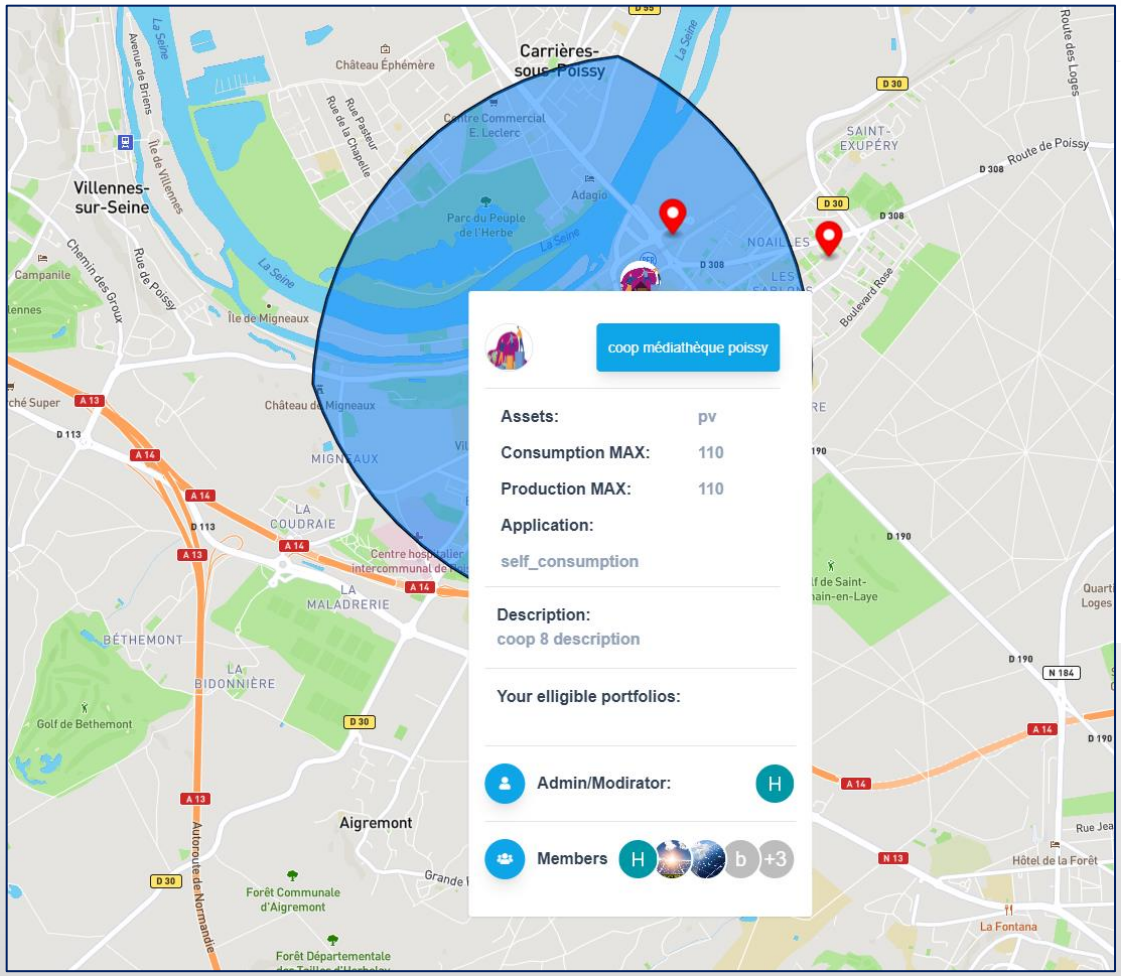
Mapping and proximity

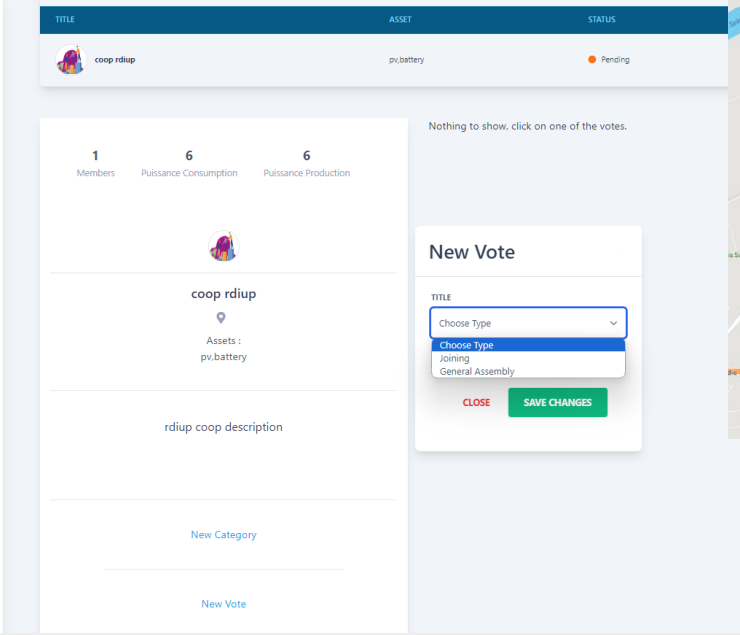




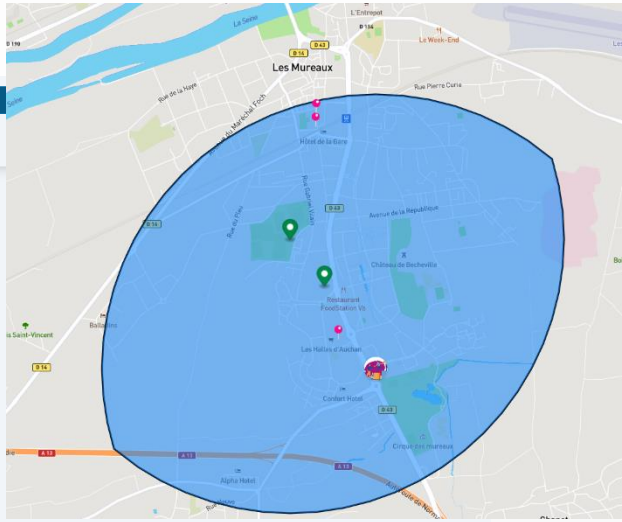
Masterpiece

Functionalities



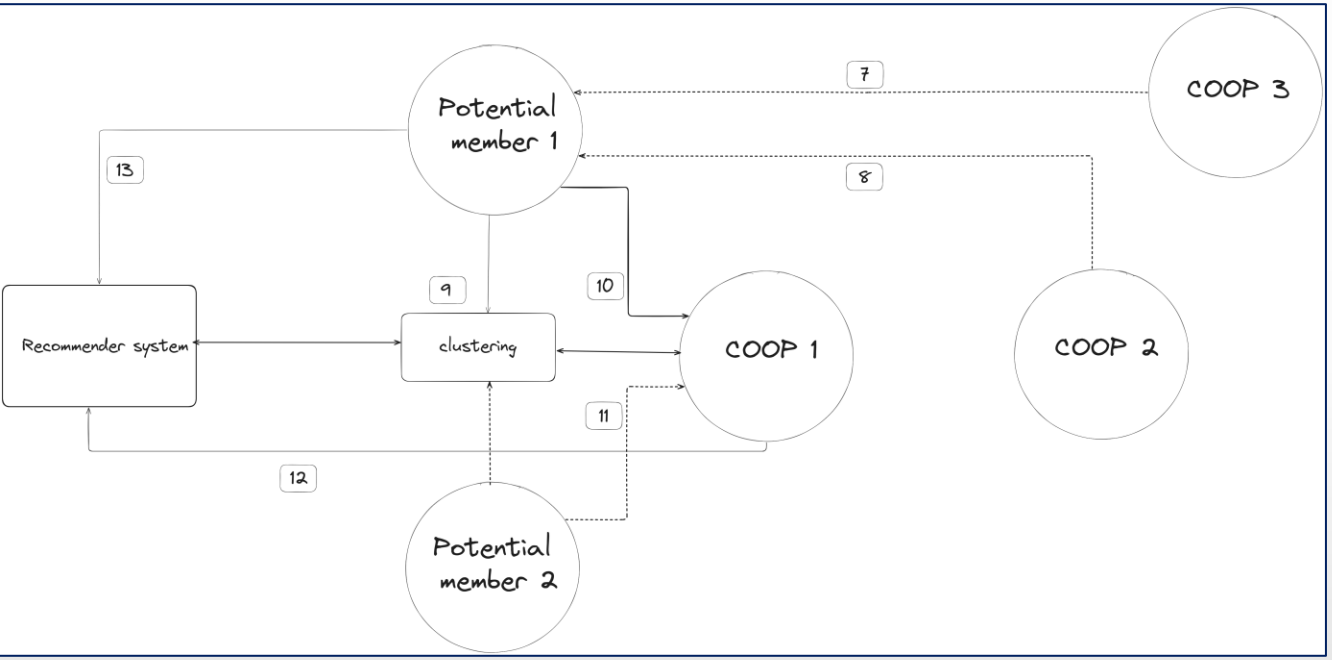


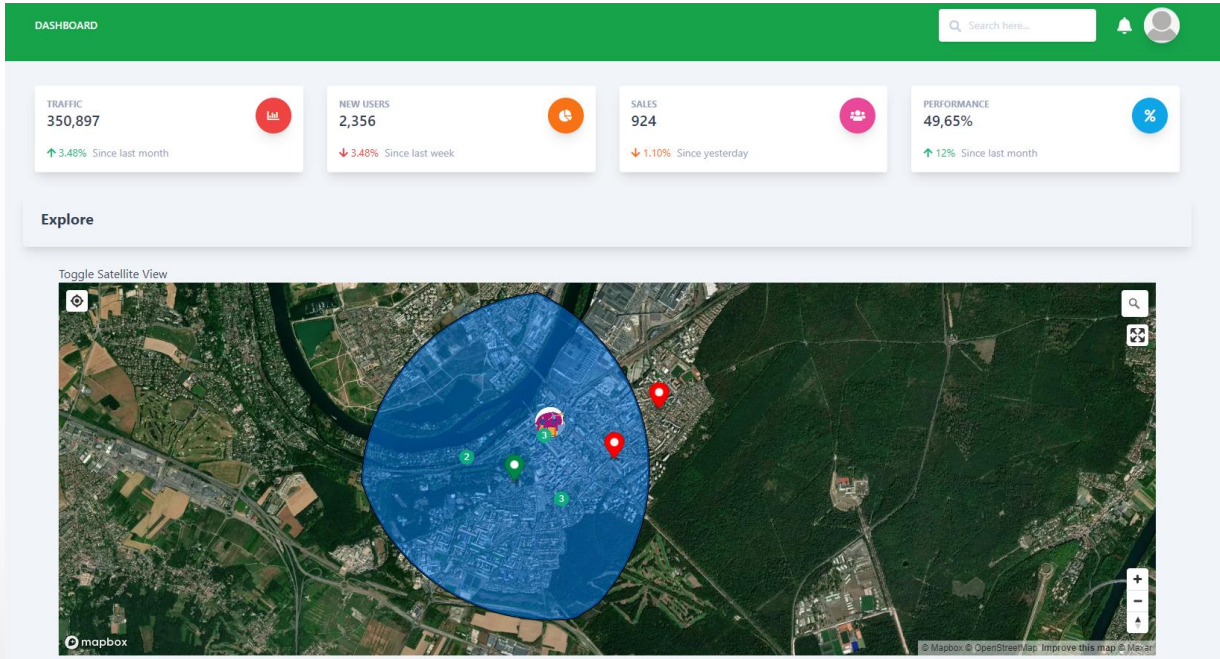
Vote for the internal participation policy



Possible participants (open data)

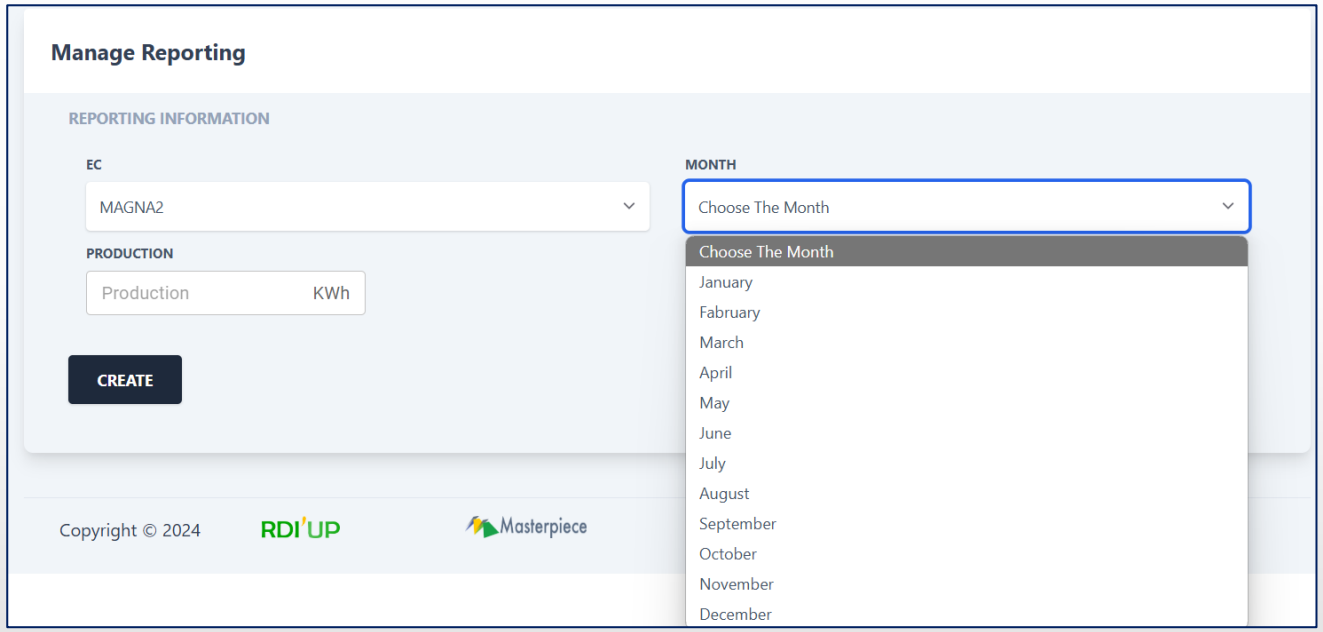
- Joining recommendation

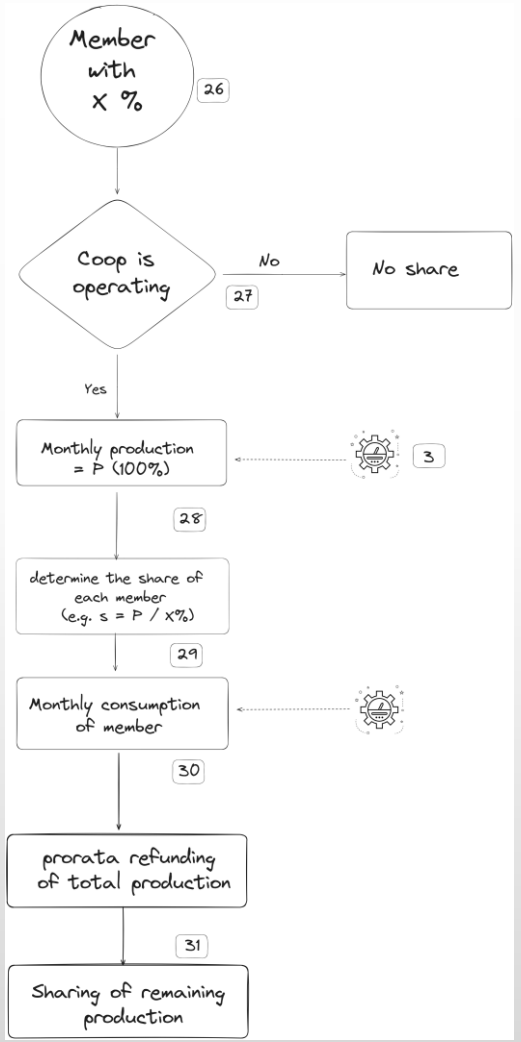




Automated Sharing process

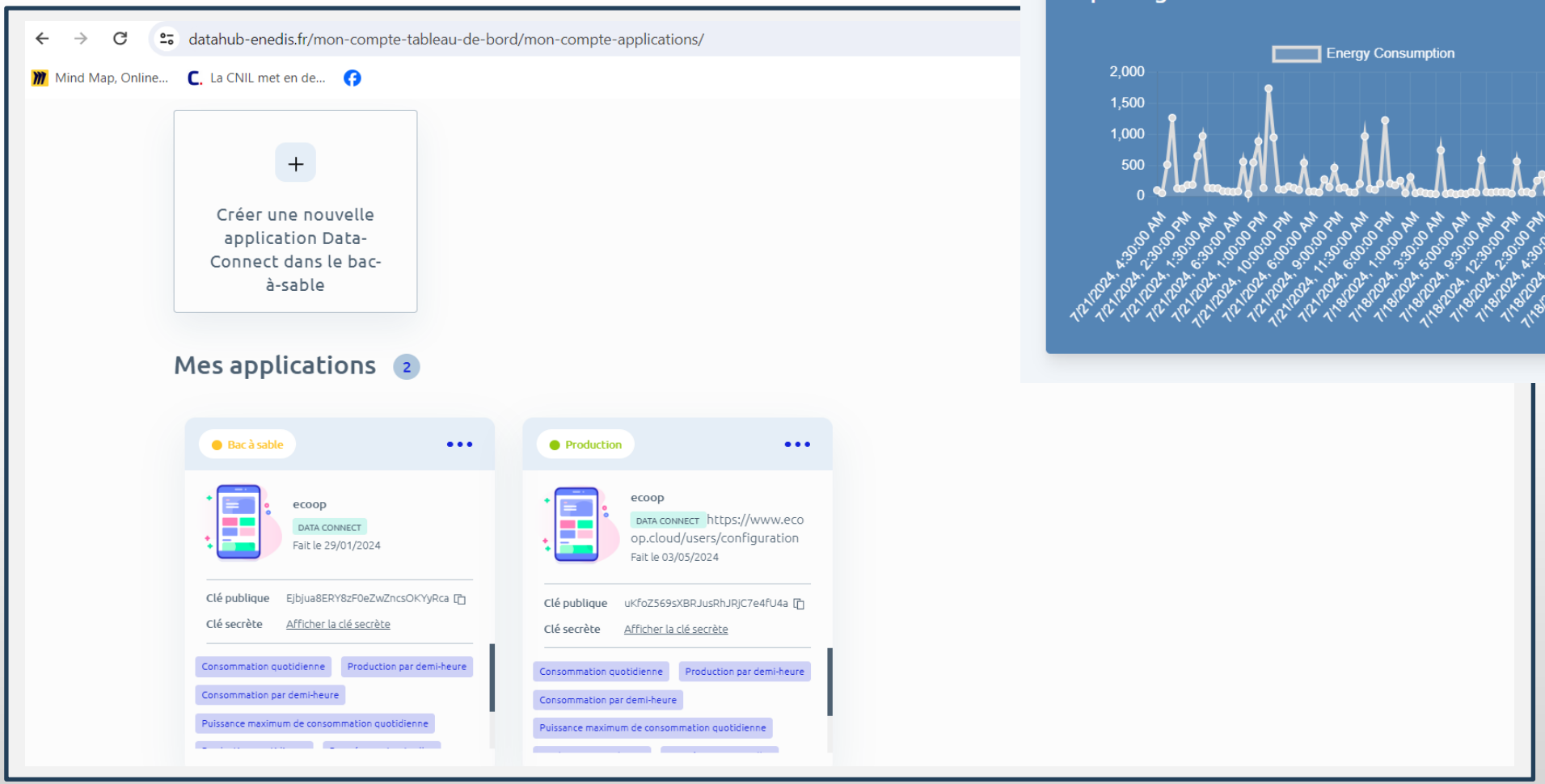
- Monthly reporting of self-consumption





Automated sharing process

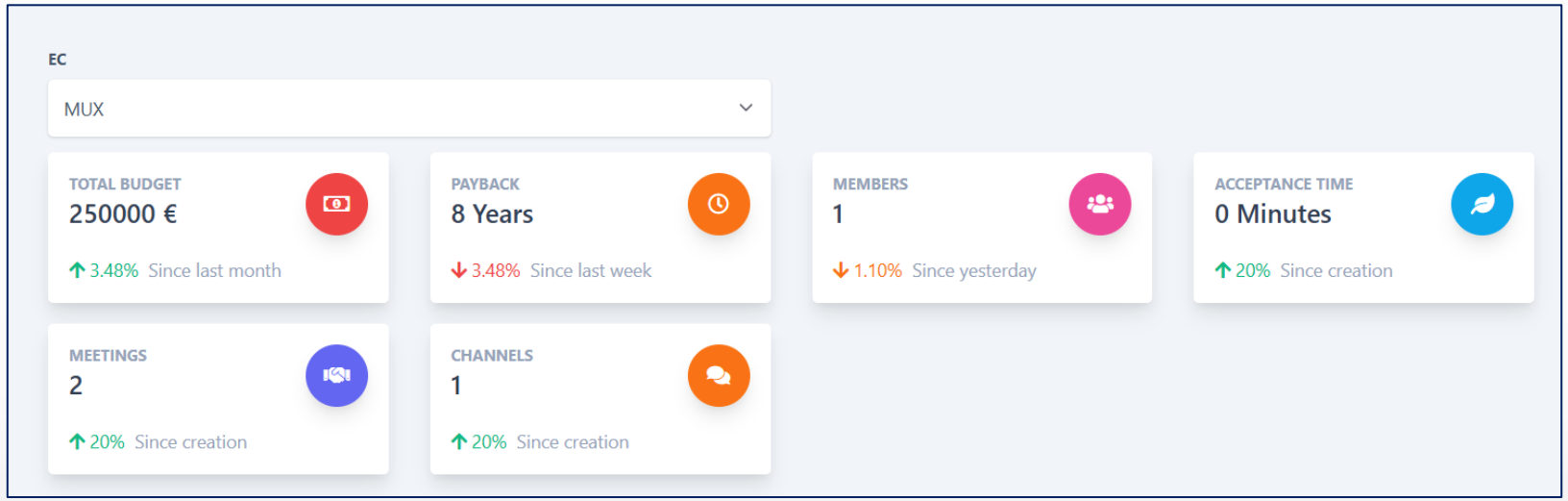
ECOOP (RDIUP)



Joining and participation tool (ECOOP)

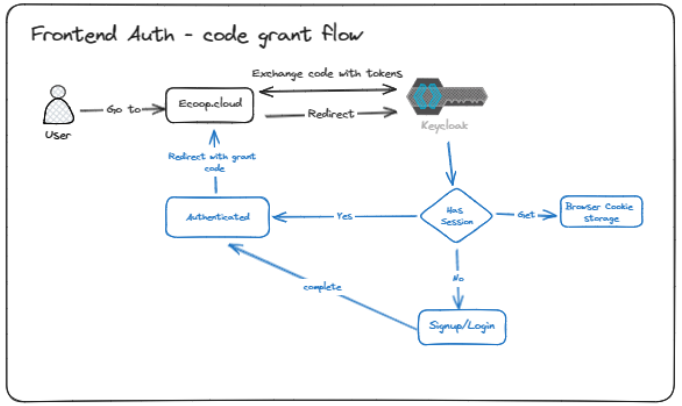
KPIs:

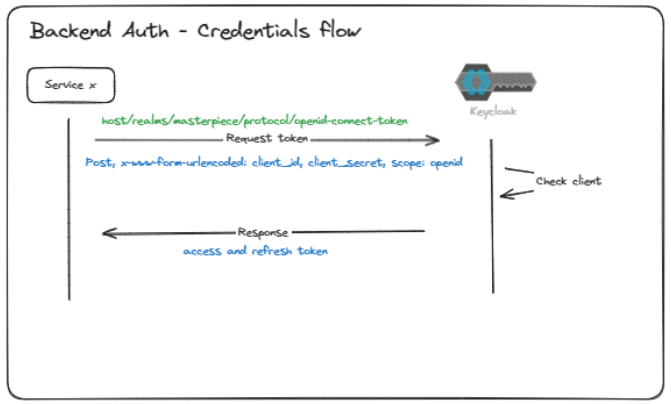
- Number of accounts and logins
- Time from invitation to acceptance
- Participation frequency in private chat rooms and discussions
- Time spent on ECOOP (Utilization time)
- Volume and frequency of data exchange within EC
- Rating and feedback
- Dashboard to display key reporting data
- Periodic custom reports
- Number of meetings organized within EC
- Adoption of new measures recommended by other tools
- Level progress (badges, colors, benefits...)
- Contribution to investment and generation



ECOOP (RDIUP)

The Landing is a central Gateway platform where all Masterpiece tools will be available for the user access.

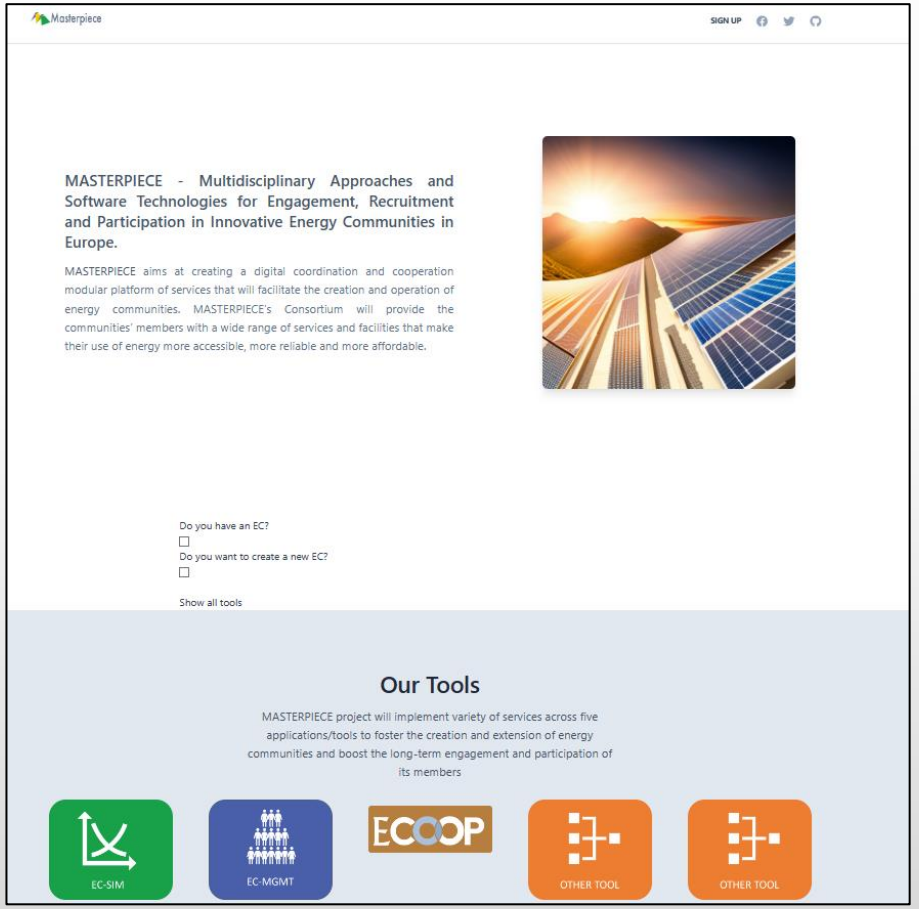




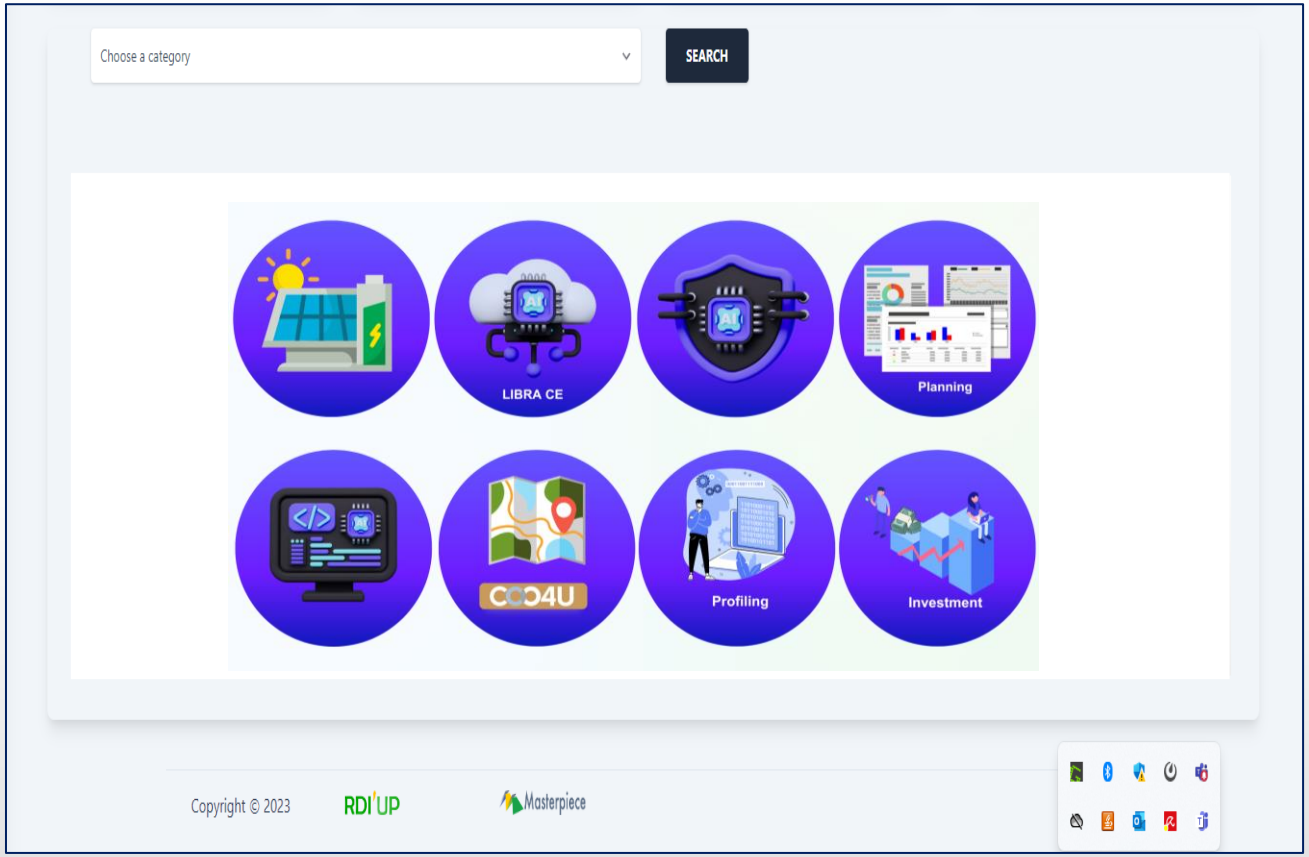
The UI shows an overview of the Masterpiece tools and Project and Dropsonw for Signup / Login via keycloak

It allows to unify the user management of tools and provides a central Access to all Masterpiece actors.

It will offer a quiz-based support to recommend tools based on the pilot maturity



KEYCLOAK


Choose a category
SEARCH
LIBRA CE
Planning
Profiling
Investment
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RDI UP
Masterpiece

Perspectives and further R&D actions

ECOOP (RDIUP)

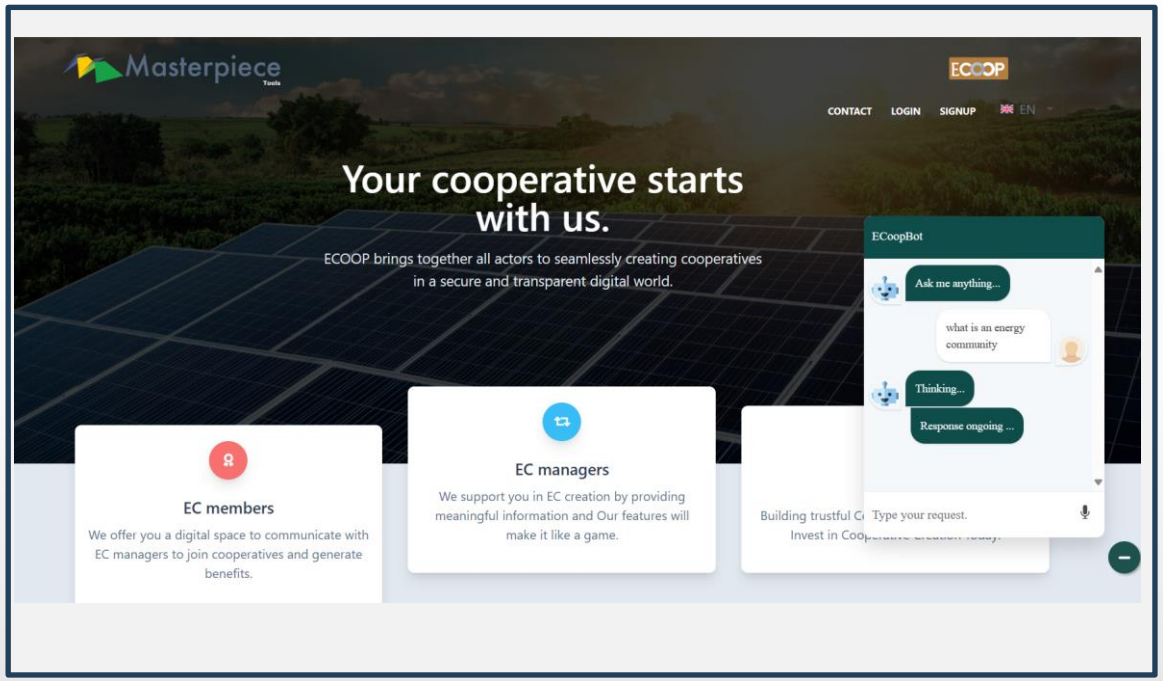
Roadmap:

Add a quiz to support users identifying the needed tolos based on maturity level of the EC

Unify the user management via keycloak

Add privacy policy and term of conditions

Add the tools one by one in the Landing page



Next steps:

- Finish the integration of CO2 footprint algorithm
- Connect ECOOP to other Masterpiece tools
- Improve UX
- Finalize the integration of keycloak
- Finish the Mobile versión of the ECOOP
- Integrate the leveing and rewarding system

Masterpiece

Multidisciplinary Approaches and Software Technologies for Engagement, Recruitment and Participation in Innovative Energy Communities in Europe

Any Questions ? Collaborations ?

Contact details: CEO RDIUP
habib.nasser@rdiup.com
+33.6.49.25.60.16

This project has received funding from the European Union's Horizon Framework Programme for Research and Innovation under grant agreement no 101096836.

Smart Tools for Smart Buildings: Enhancing the intelligence of buildings in Europe – Smart²

Sustainable Places 2024

Project Overview

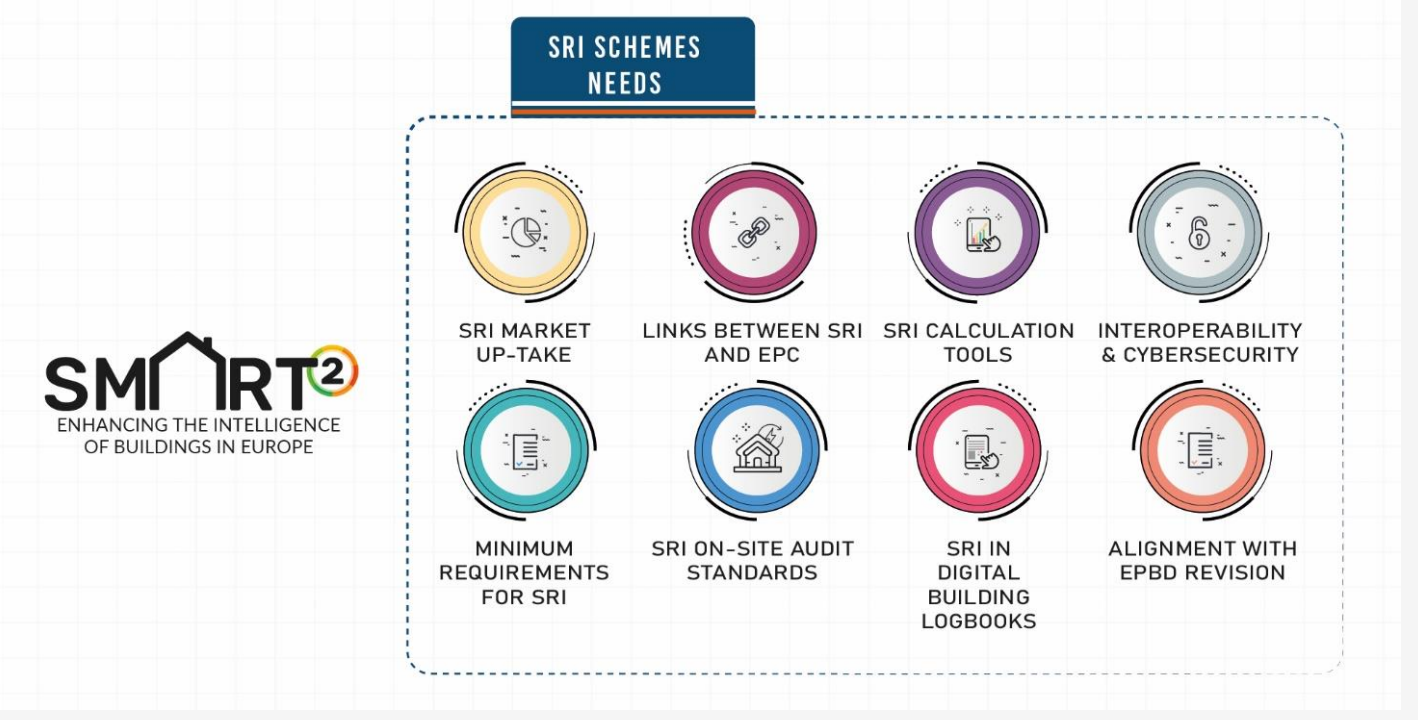
Dr.-Ing- Paris A Fokaides
Euphyia Tech
Technical and Scientific Manager

ADMINISTRATIVE DATA

- Reference: LIFE21-CET-SMARTREADY-SMART-SQUARE/101077241
- Acronym: LIFE21-CET-SMARTREADY-SMART SQUARE
- Start Date: 01/10/2022
- End Date: 30/09/2025
- € Total Eligible Budget: 2,047,124 €
- EU Contribution: 1,944,768 €

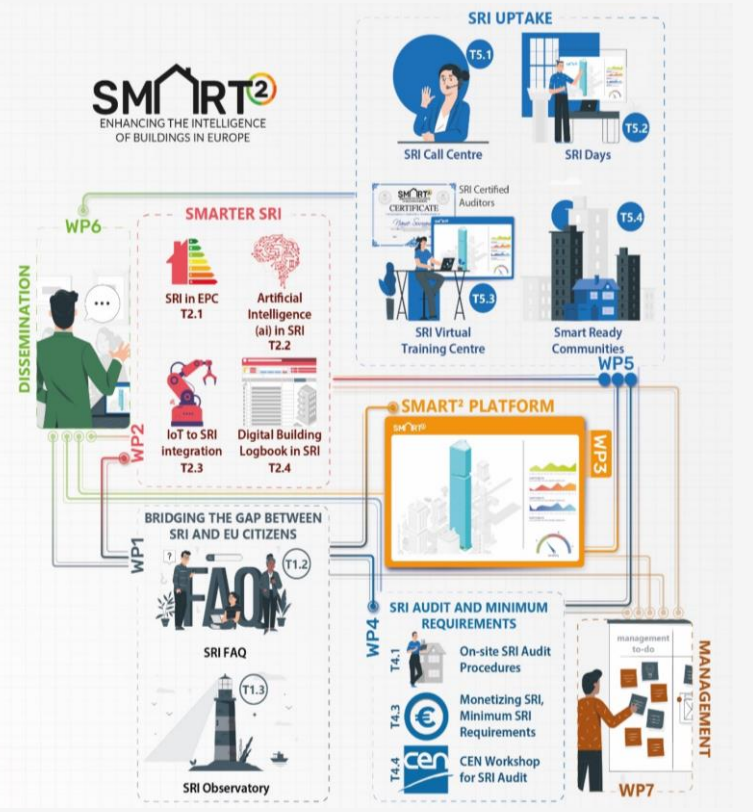
1. Introduction – The Smart Square Partners

1. Introduction – Needs and Challenges of the Field

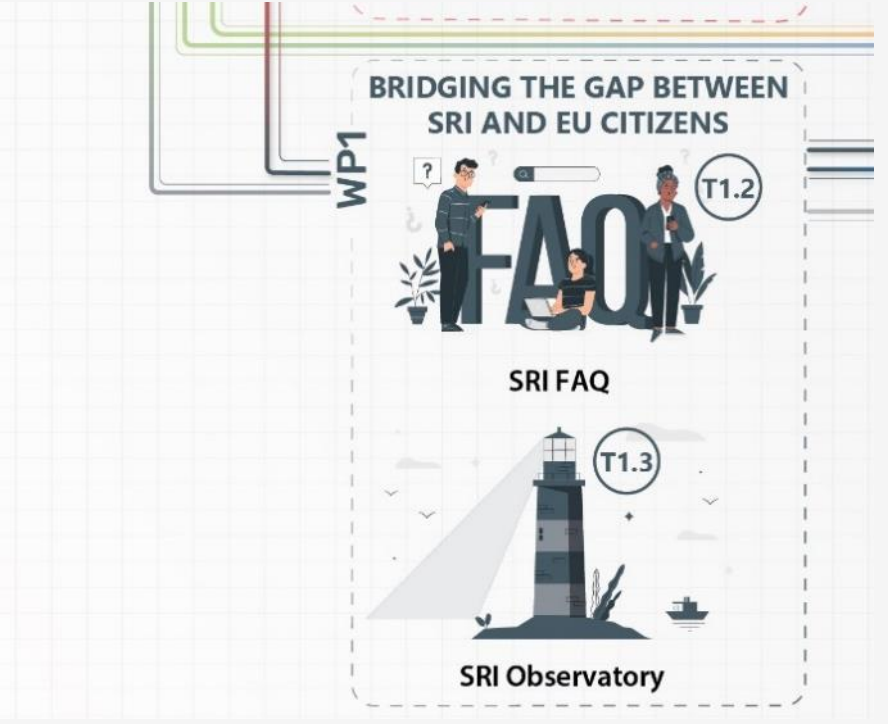


1. Smart² Proposition – How are the challenges addressed

1. Bridging the Gap between the SRI and the Society
2. Development of Tools and Solutions
3. SRI On Site Audits – Minimum Requirements
4. Demonstration Activities – Scheme Uptake



Smart² - Bridging the gap between SRI and EU citizens



- Development of the SRI for Dummies initiative
- Establishment of the SRI Observatory – Annual SRI Outlook for 2023, 2024 and 2025

Smart² - Bridging the gap between SRI and EU citizens

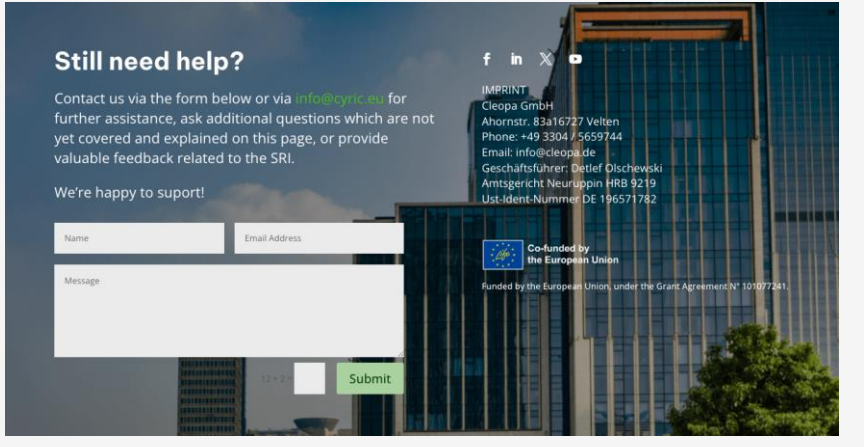
SRI FAQ Guide

Find here the answer to common questions about SRI.

This FAQ site is part of the Smart Square project, which aims to develop and deliver the appropriate tools and applications to enable the promotion and establishment of intelligegence assessment of buildings in Europe, through the SRI scheme.

Find Categories from here...

- Definition
- Complexity
- Assessment
- Users
- Building performance & energy efficiency
- Programs & Incentives
- Energy companies / other companies
- Benefits
- Mandatory
- Assessor
- Certification
- Climate zones
- Availability & implementation in Member States
- Devices
- Obstacles & challenges
- Calculation
- Methodology
- Building types
- Domains
- Documentation & tools
- Regulation



www.cleopa.de

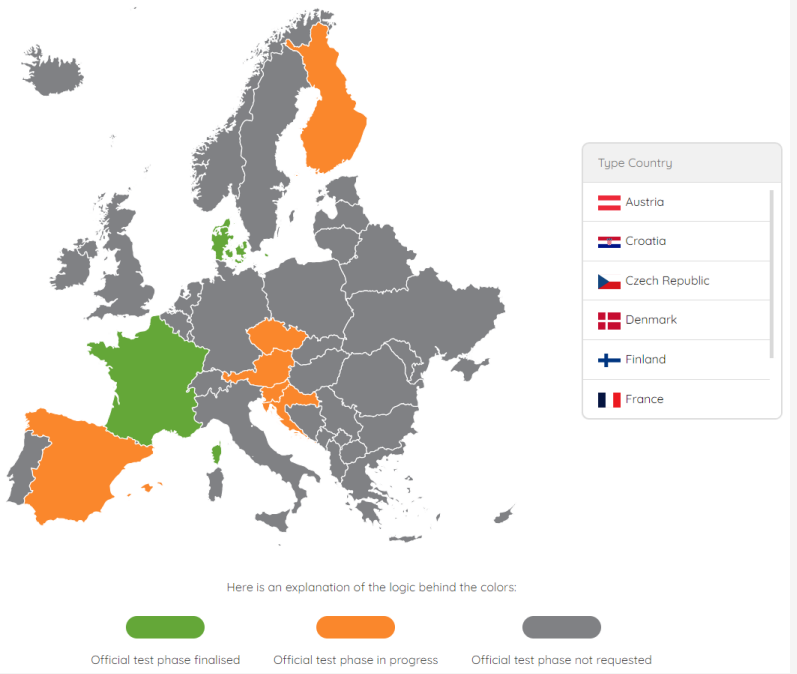
https://sri-faq.eu/

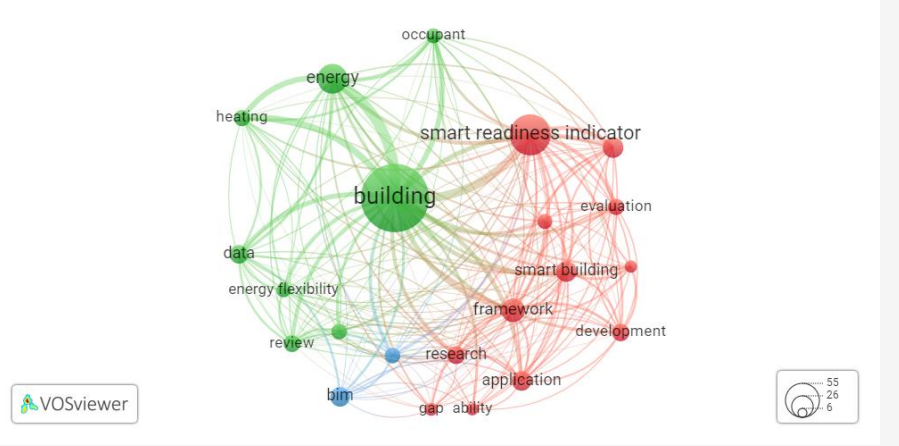
Smart² - Bridging the gap between SRI and EU citizens

REHVA
Federation of European Heating, Ventilation and Air-conditioning Associations

https://sriobservatory.eu/

Smart² - Bridging the gap between SRI and EU citizens





- Transposition and Research Trackers

REHVA
Federation of European Heating, Ventilation and Air-conditioning Associations

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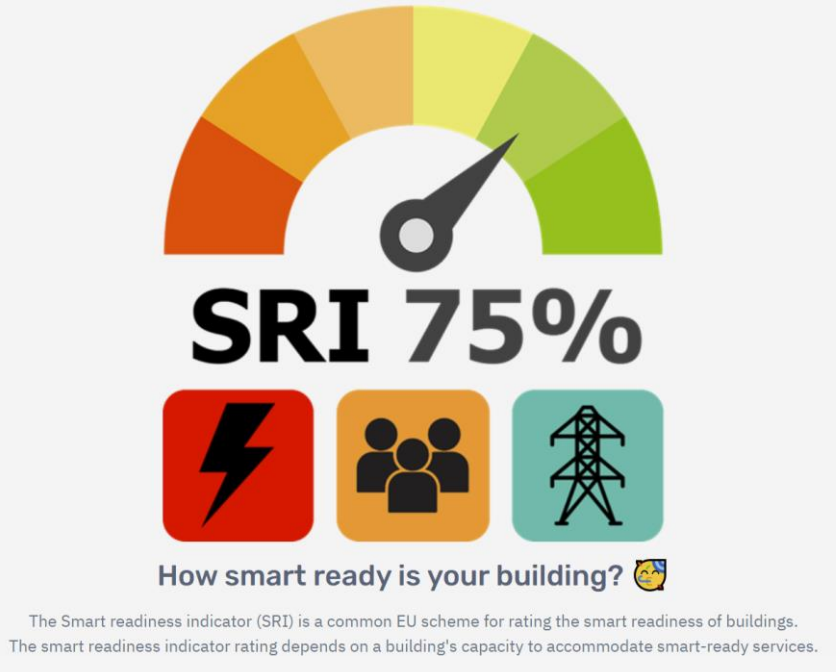
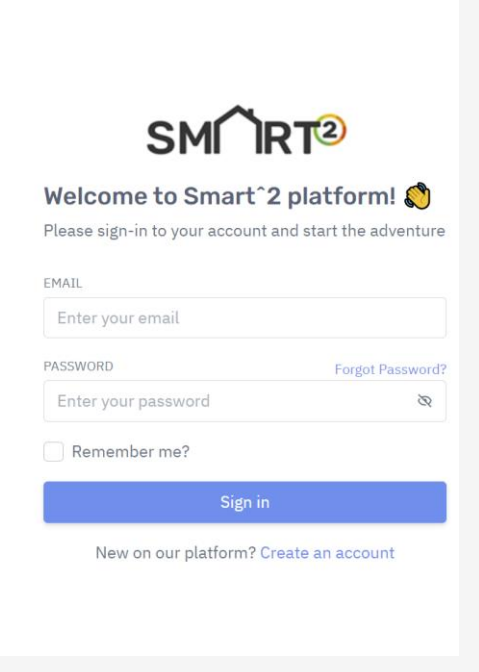
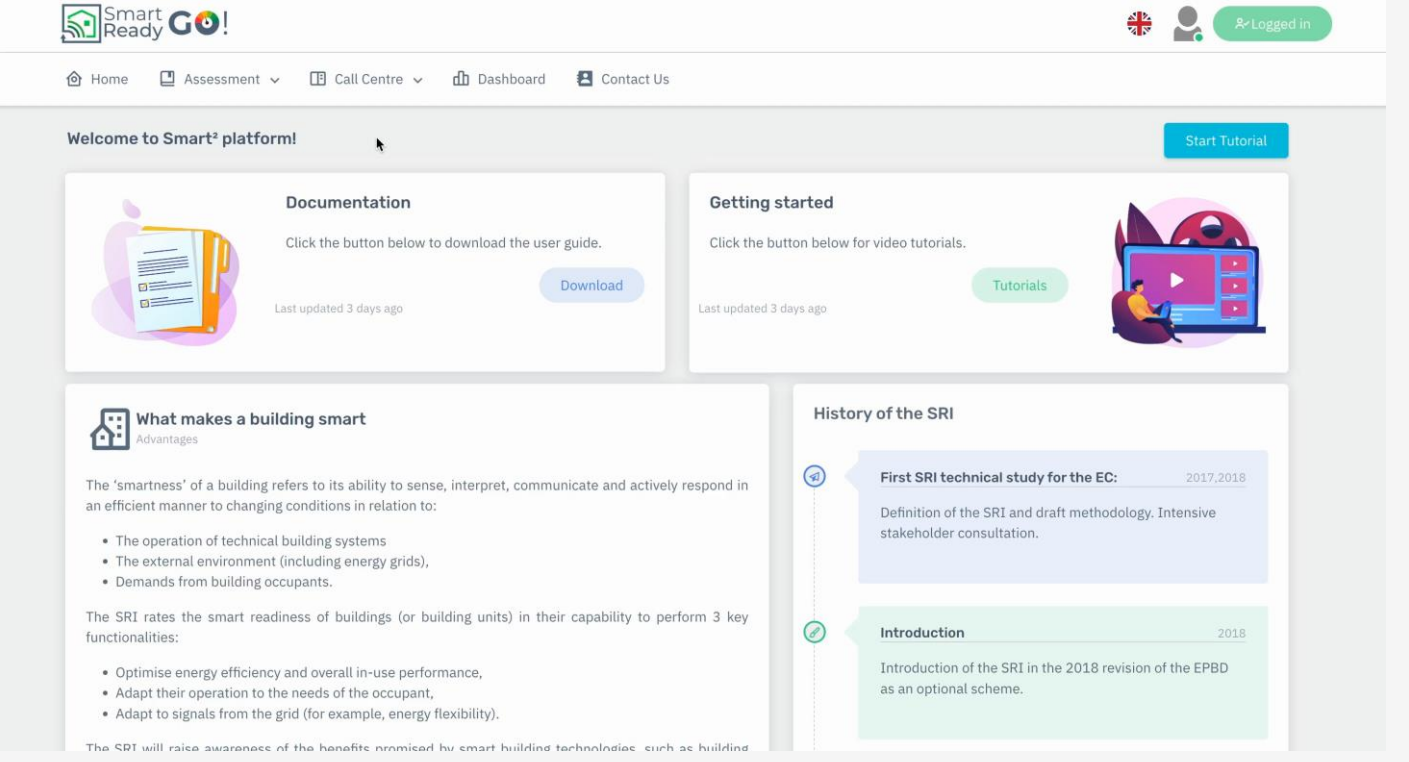
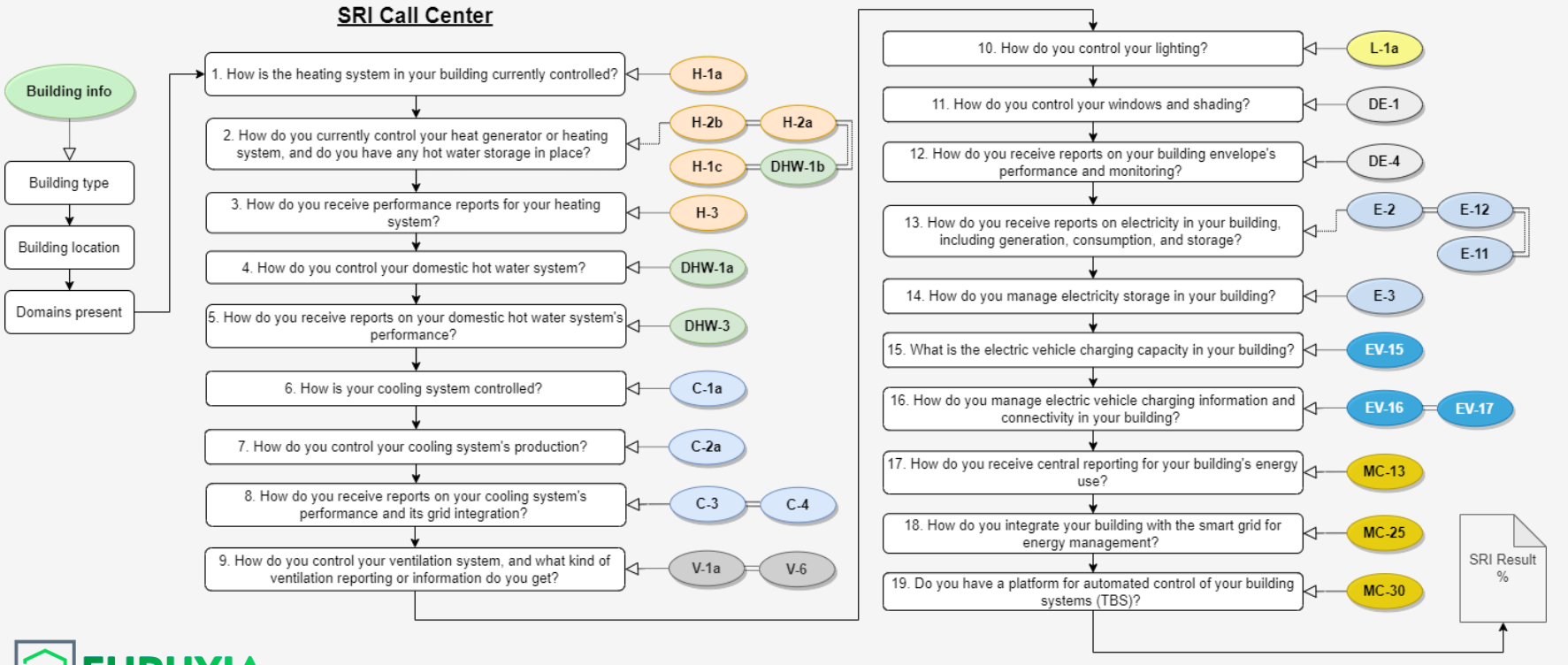
Smart² - Development of Tools and Solutions



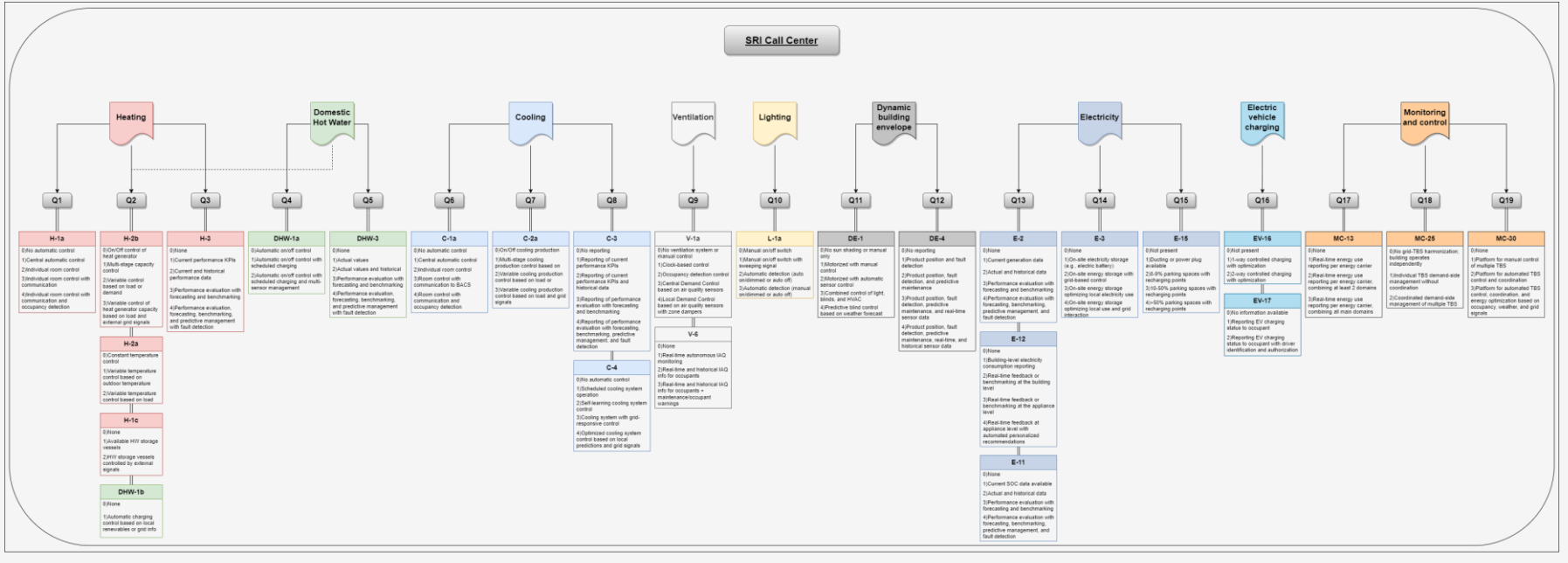


Smart² - Development of Tools and Solutions

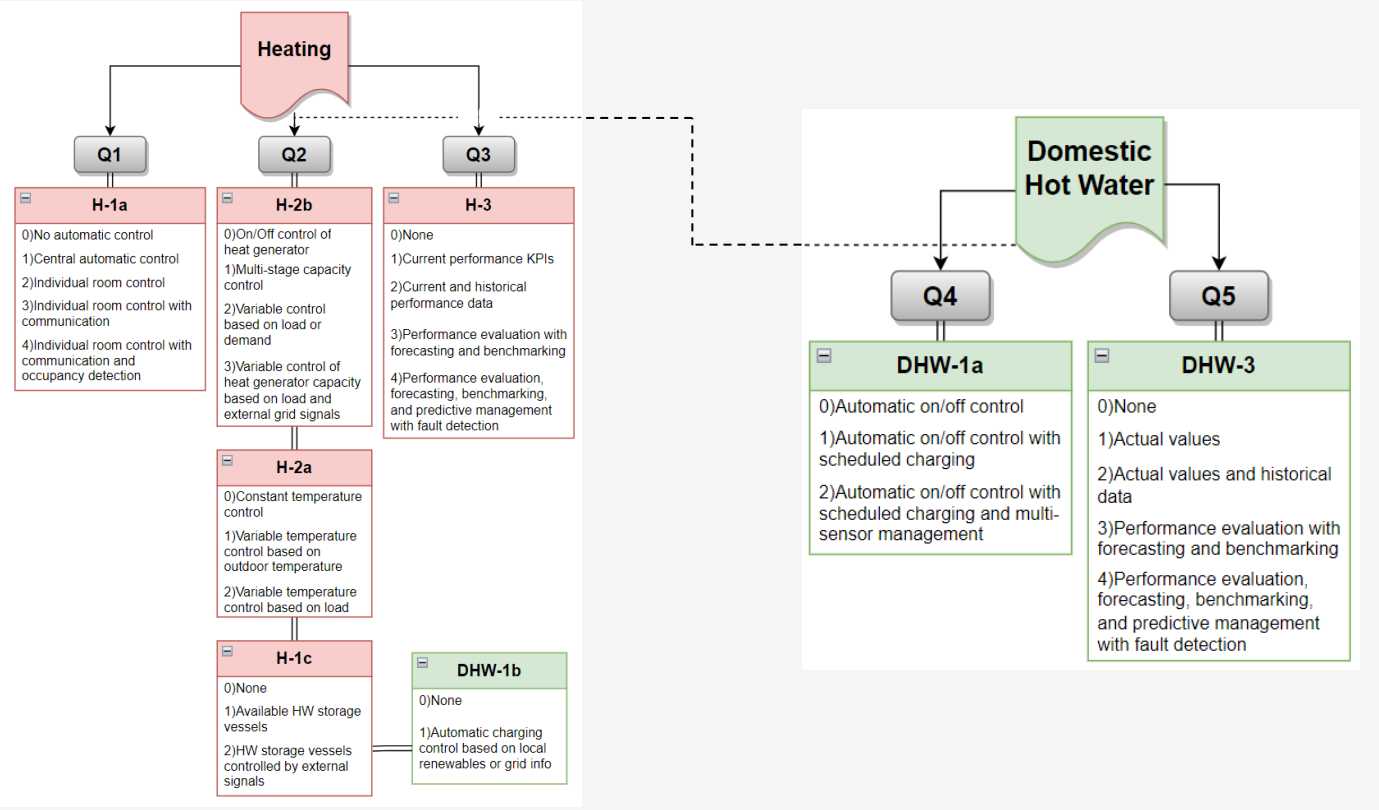


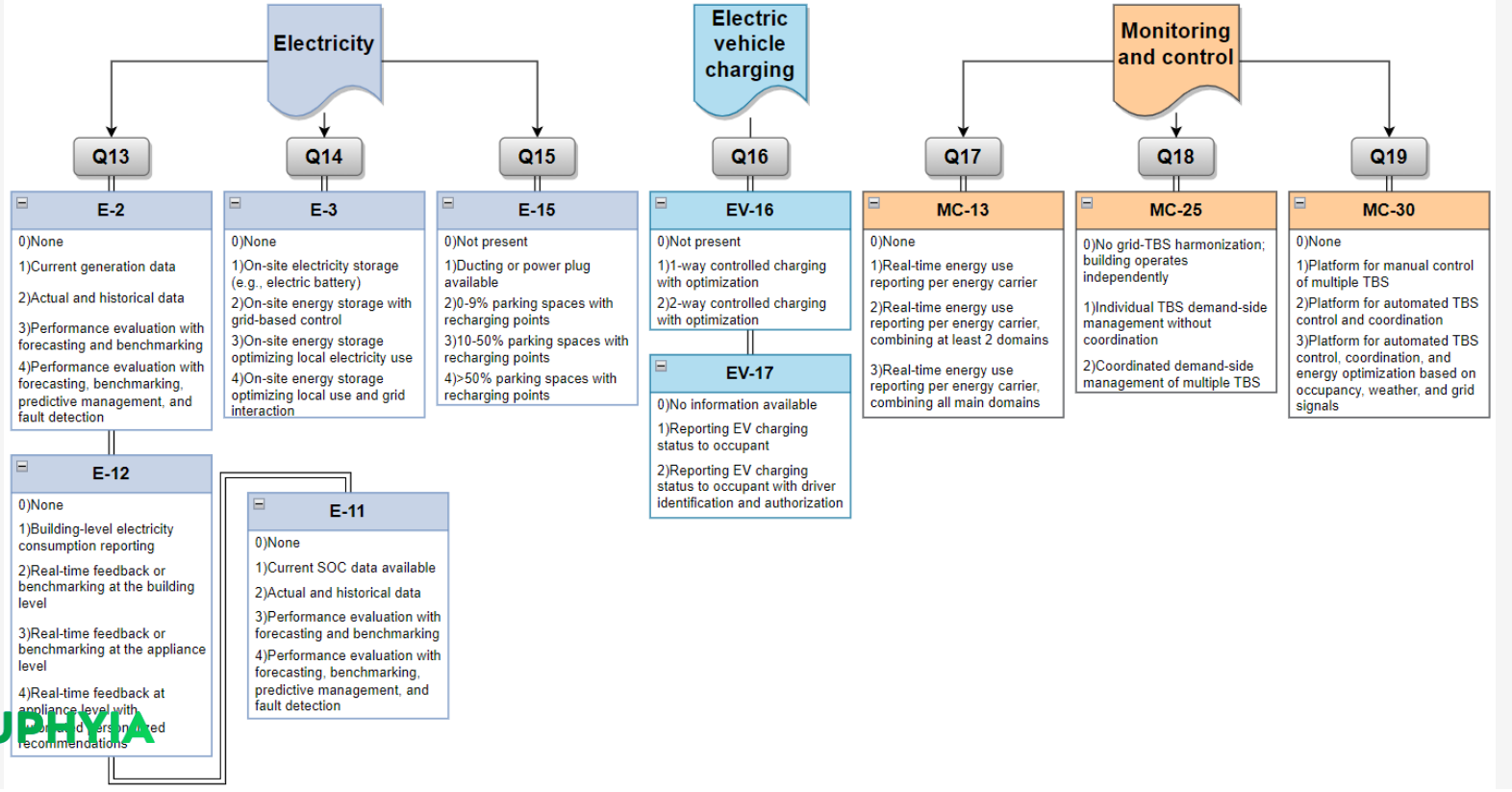

SRI Call Center
Building info
Building type
Building location
Domains present
1. How is the heating system in your building currently controlled?
H-1a
2. How do you currently control your heat generator or heating system, and do you have any hot water storage in place?
H-2b
H-2a
H-1c
DHW-1b
3. How do you receive performance reports for your heating system?
H-3
4. How do you control your domestic hot water system?
DHW-1a
5. How do you receive reports on your domestic hot water system's performance?
DHW-3
6. How is your cooling system controlled?
C-1a
7. How do you control your cooling system's production?
C-2a
8. How do you receive reports on your cooling system's performance and its grid integration?
C-3
C-4
9. How do you control your ventilation system, and what kind of ventilation reporting or information do you get?
V-1a
V-6
10. How do you control your lighting?
L-1a
11. How do you control your windows and shading?
DE-1
12. How do you receive reports on your building envelope's performance and monitoring?
DE-4
13. How do you receive reports on electricity in your building, including generation, consumption, and storage?
E-2
E-12
E-11
14. How do you manage electricity storage in your building?
E-3
15. What is the electric vehicle charging capacity in your building?
EV-15
16. How do you manage electric vehicle charging information and connectivity in your building?
EV-16
EV-17
17. How do you receive central reporting for your building's energy use?
MC-13
18. How do you integrate your building with the smart grid for energy management?
MC-25
19. Do you have a platform for automated control of your building systems (TBS)?
MC-30
SRI Result %

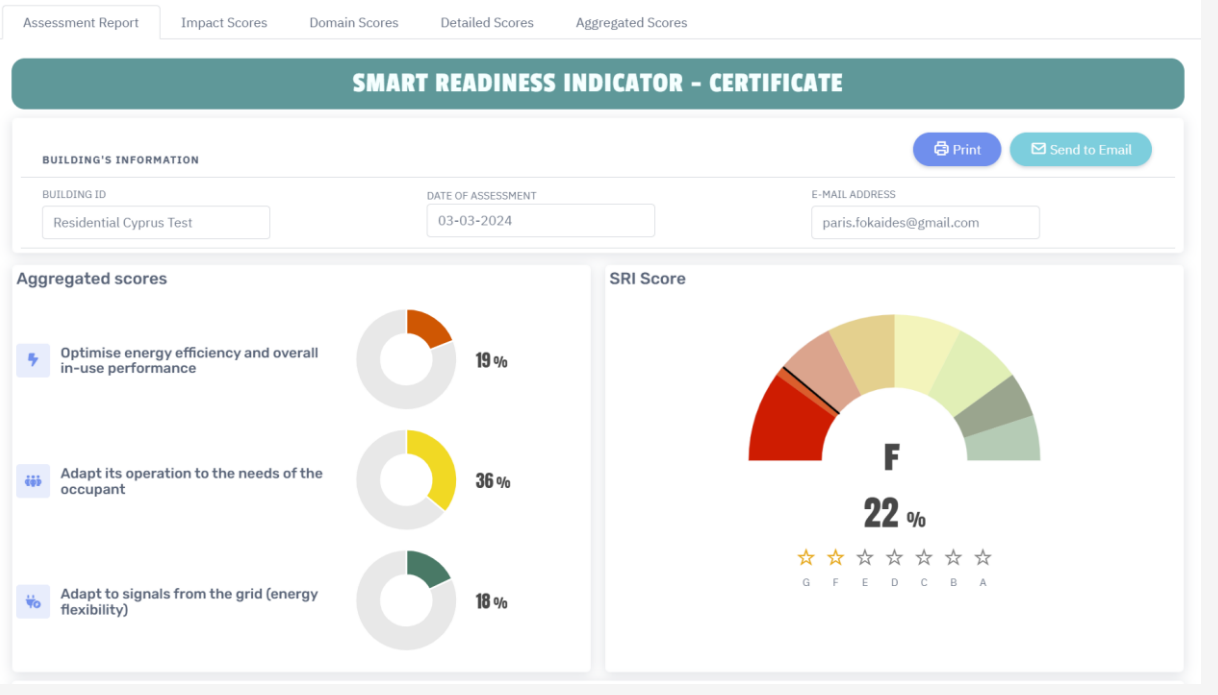
Smart² - Development of Tools and Solutions



EUPHYIA


Heating
Q1
Q2
Q3
H-1a
0)No automatic control
1)Central automatic control
2)Individual room control
3)Individual room control with communication
4)Individual room control with communication and occupancy detection
H-2b
0)On/Off control of heat generator
1)Multi-stage capacity control
2)Variable control based on load or demand
3)Variable control of heat generator capacity based on load and external grid signals
H-3
0)None
1)Current performance KPIs
2)Current and historical performance data
3)Performance evaluation with forecasting and benchmarking
4)Performance evaluation, forecasting, benchmarking, and predictive management with fault detection
H-2a
0)Constant temperature control
1)Variable temperature control based on outdoor temperature
2)Variable temperature control based on load
H-1c
0)None
1)Available HW storage vessels
2)HW storage vessels controlled by external signals
DHW-1b
0)None
1)Automatic charging control based on local renewables or grid info
Domestic Hot Water
Q4
Q5
DHW-1a
0)Automatic on/off control
1)Automatic on/off control with scheduled charging
2)Automatic on/off control with scheduled charging and multi-sensor management
DHW-3
0)None
1)Actual values
2)Actual values and historical data
3)Performance evaluation with forecasting and benchmarking
4)Performance evaluation, forecasting, benchmarking, and predictive management with fault detection


Electricity
Electric vehicle charging
Monitoring and control
Q13
Q14
Q15
Q16
Q17
Q18
Q19
E-2
0)None
1)Current generation data
2)Actual and historical data
3)Performance evaluation with forecasting and benchmarking
4)Performance evaluation with forecasting, benchmarking, predictive management, and fault detection
E-3
0)None
1)On-site electricity storage (e.g., electric battery)
2)On-site energy storage with grid-based control
3)On-site energy storage optimizing local electricity use
4)On-site energy storage optimizing local use and grid interaction
E-15
0)Not present
1)Ducting or power plug available
2)0-9% parking spaces with recharging points
3)10-50% parking spaces with recharging points
4)>50% parking spaces with recharging points
EV-16
0)Not present
1)1-way controlled charging with optimization
2)2-way controlled charging with optimization
EV-17
0)No information available
1)Reporting EV charging status to occupant
2)Reporting EV charging status to occupant with driver identification and authorization
MC-13
0)None
1)Real-time energy use reporting per energy carrier
2)Real-time energy use reporting per energy carrier, combining at least 2 domains
3)Real-time energy use reporting per energy carrier, combining all main domains
MC-25
0)No grid-TBS harmonization; building operates independently
1)Individual TBS demand-side management without coordination
2)Coordinated demand-side management of multiple TBS
MC-30
0)None
1)Platform for manual control of multiple TBS
2)Platform for automated TBS control and coordination
3)Platform for automated TBS control, coordination, and energy optimization based on occupancy, weather, and grid signals
E-12
0)None
1)Building-level electricity consumption reporting
2)Real-time feedback or benchmarking at the building level
3)Real-time feedback or benchmarking at the appliance level
4)Real-time feedback at appliance level with
recommendations
E-11
0)None
1)Current SOC data available
2)Actual and historical data
3)Performance evaluation with forecasting and benchmarking
4)Performance evaluation with forecasting, benchmarking, predictive management, and fault detection

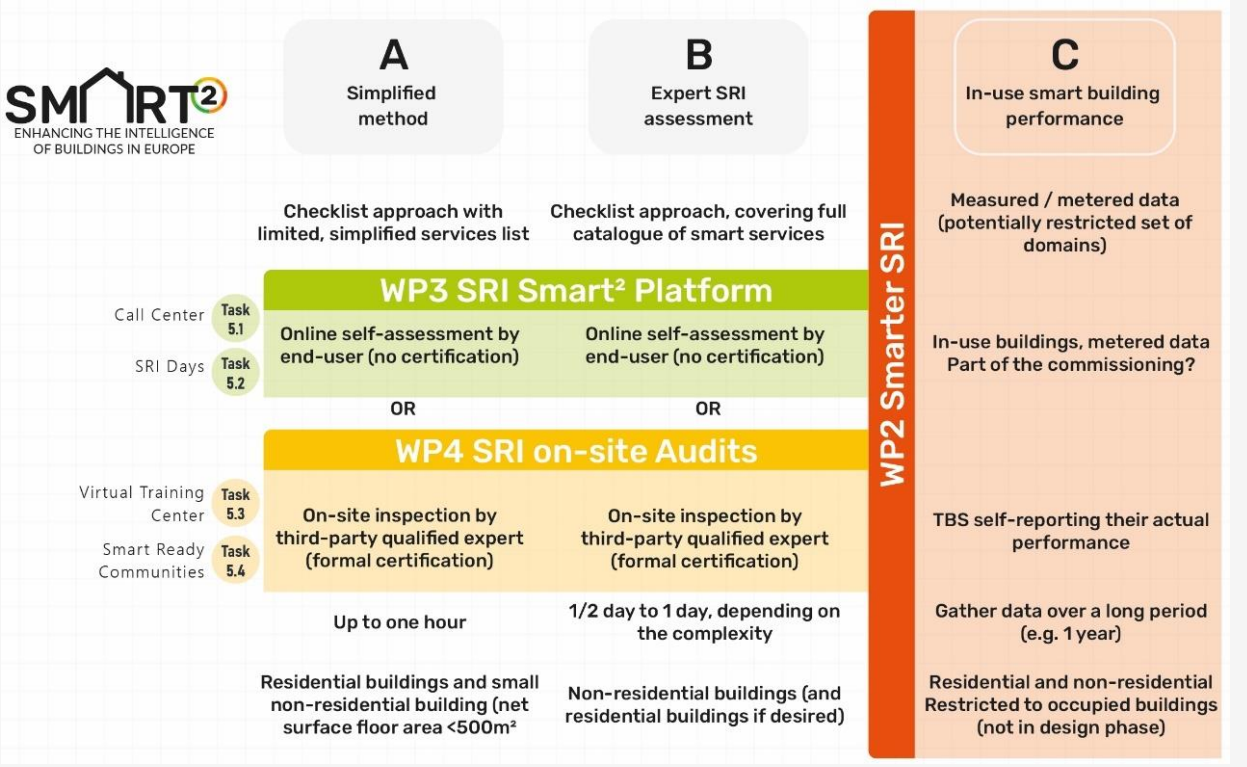

Assessment Report
Impact Scores
Domain Scores
Detailed Scores
Aggregated Scores
SMART READINESS INDICATOR - CERTIFICATE
BUILDING'S INFORMATION
Print
Send to Email
BUILDING ID
Residential Cyprus Test
DATE OF ASSESSMENT
03-03-2024
E-MAIL ADDRESS
paris.fokaides@gmail.com
Aggregated scores
Optimise energy efficiency and overall in-use performance
19 %
Adapt its operation to the needs of the occupant
36 %
Adapt to signals from the grid (energy flexibility)
18 %
SRI Score
F
22 %
G F E D C B A

Smart² - Development of Tools and Solutions

	Energy efficiency	Maintenance & fault prediction	Comfort	Convenience	Health & well-being	Information to occupants	Energy flexibility & storage	SRI
Total	**28 %**	**10 %**	**44 %**	**18 %**	**60 %**	**20 %**	**18 %**	**22 %**
Heating	30 %	33 %	43 %	20 %	50 %	0 %	0 %	
DHW	20 %	25 %	0 %	20 %	0 %	0 %	0 %	
Cooling	38 %	17 %	43 %	29 %	67 %	0 %	0 %	
Ventilation	0 %	0 %	0 %	0 %	0 %	0 %	0 %	
Lighting	33 %	0 %	50 %	50 %	0 %	0 %	0 %	
DE	0 %	0 %	0 %	0 %	0 %	0 %	0 %	
Electricity	20 %	0 %	0 %	0 %	0 %	17 %	33 %	
EV	0 %	0 %	0 %	0 %	0 %	0 %	0 %	
M&C	25 %	0 %	0 %	14 %	0 %	25 %	33 %	

Funded by the ©European Union, under the Grant Agreement N° 101077241. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them.

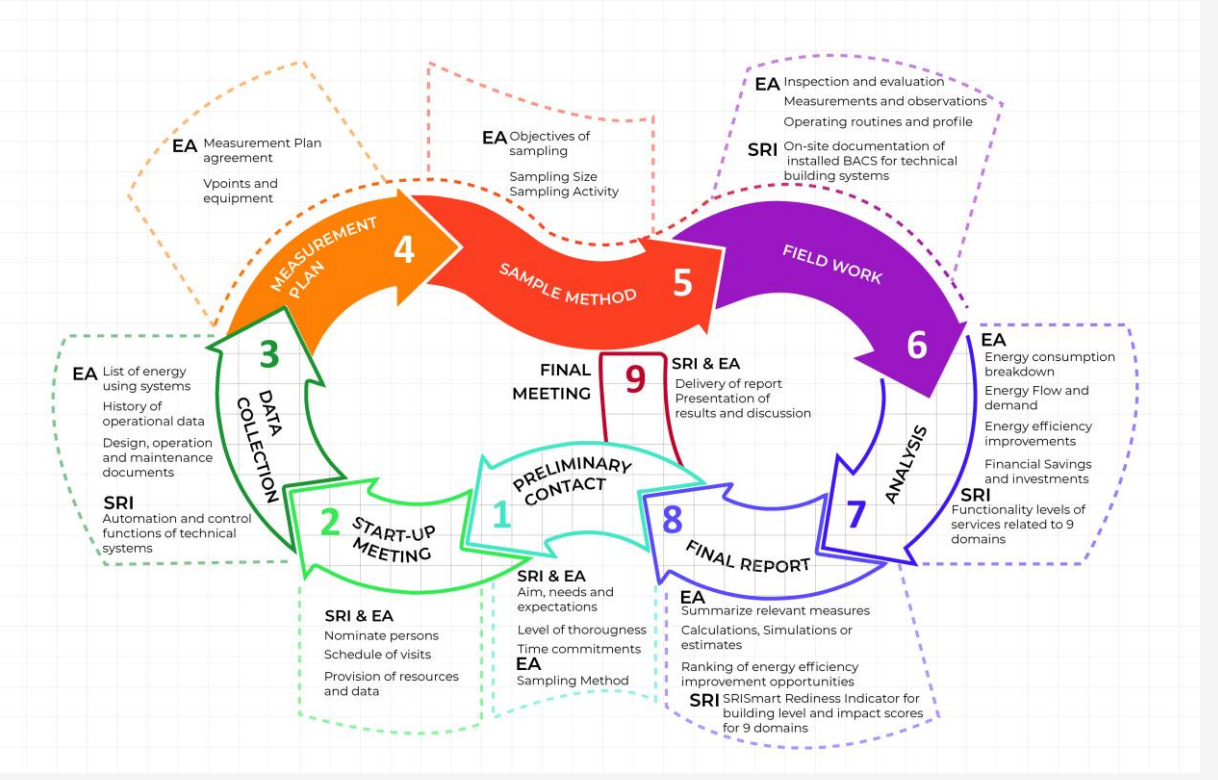
Smart² - Development of Tools and Solutions



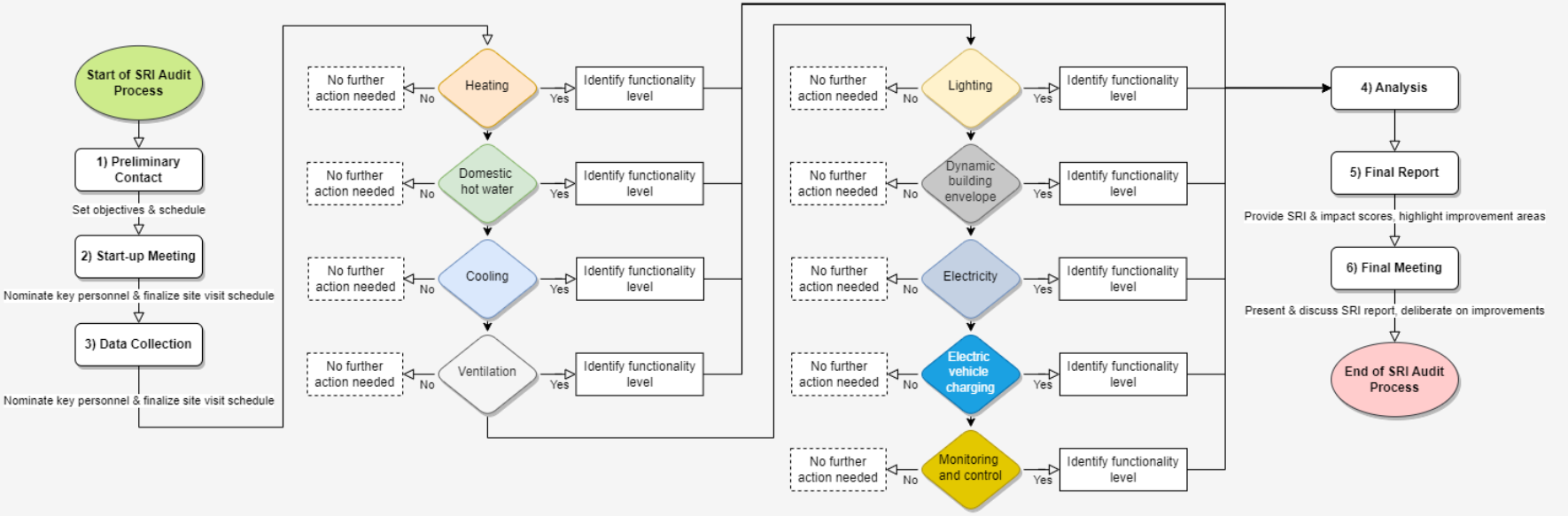
EUPHYIA

Smart² - SRI on-site audits and minimum requirements

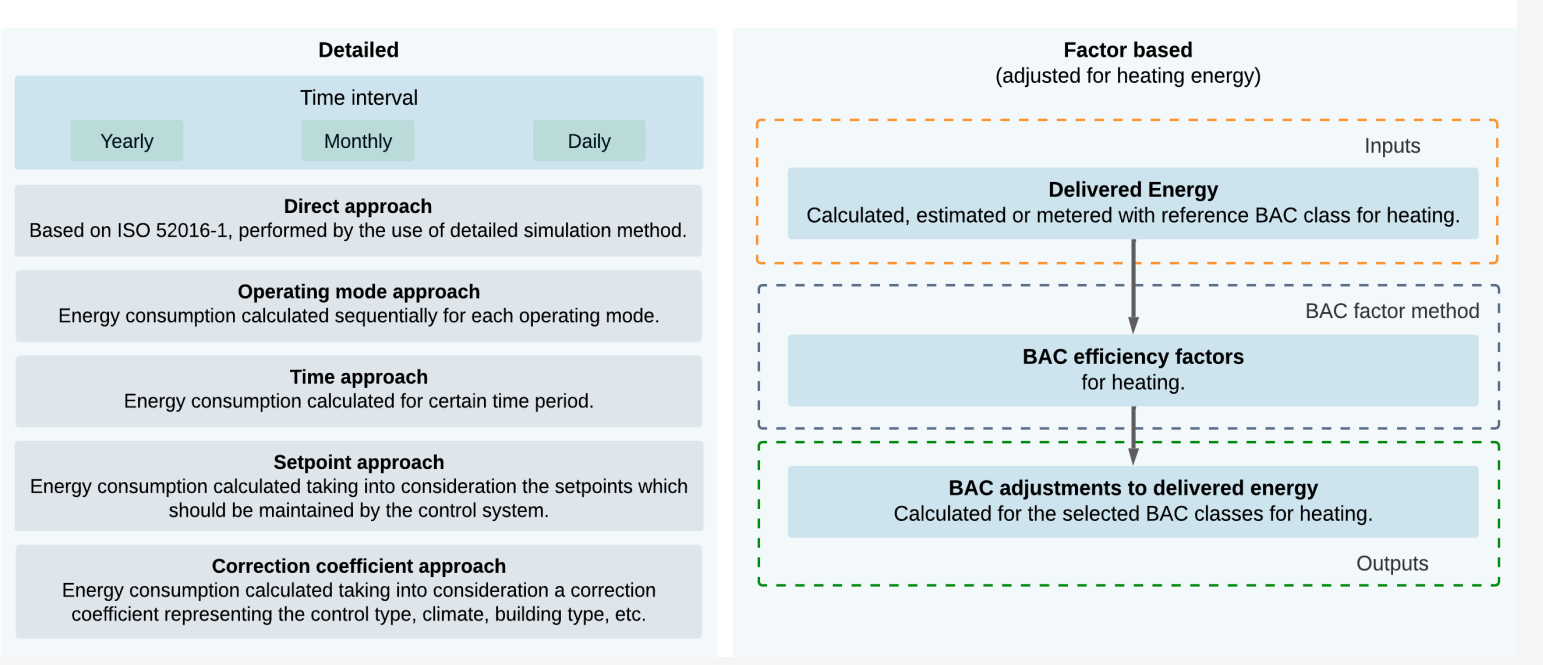
Smart² - SRI on-site audits and minimum requirements



Smart² - SRI on-site audits and minimum requirements



Smart² - SRI on-site audits and minimum requirements

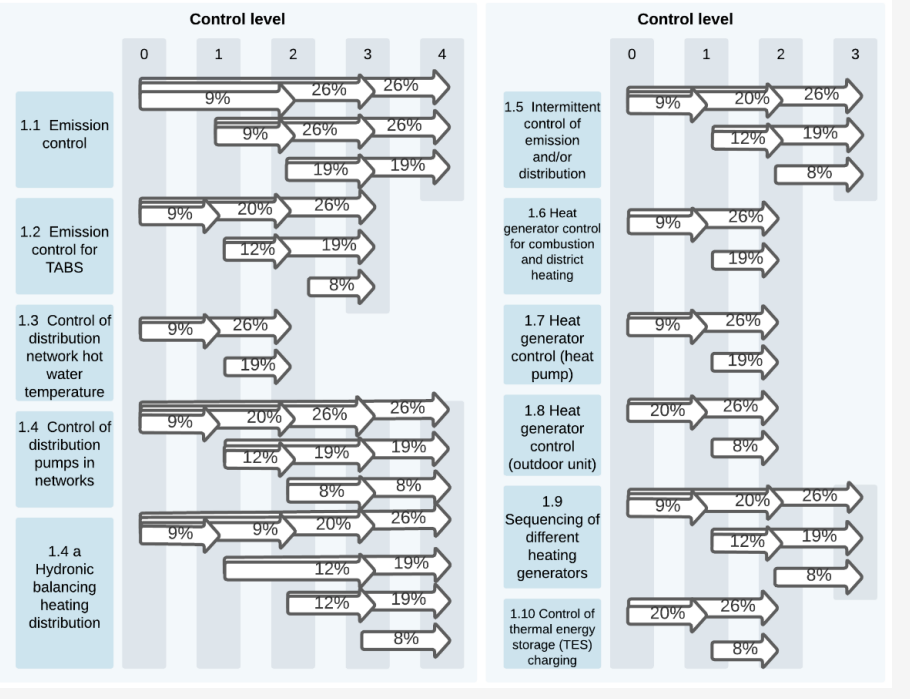


Smart² - SRI on-site audits and minimum requirements

	0	1	2	3	4
1.1 Emission control	D	D	C	B	A
1.2 Emission control for TABS	D	C	B	A	
1.3 Control of distribution network hot water temperature	D	C	A		
1.4 Control of distribution pumps in networks	D	C	B	A	A
1.4 a Hydronic balancing heating distribution	D	C	B	A	A
1.5 Intermittent control of emission and/or distribution	D	C	B	A	

	0	1	2	3
1.6 Heat generator control for combustion and district heating	D	C	A	
1.7 Heat generator control (heat pump)	D	C	A	
1.8 Heat generator control (outdoor unit)	D	B	A	
1.9 Sequencing of different heating generators	D	C	B	A
1.10 Control of thermal energy storage (TES) charging	D	B	A	

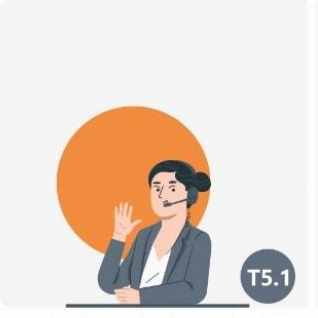
Legend: Level of Control / BAC class



Smart² Demonstration activities – Scheme Uptake

SMART2
ENHANCING THE INTELLIGENCE OF BUILDINGS IN EUROPE

IMPACT AMBITION



3600

CALL CENTER

20x18x10 = 3600 SRI Certificates by the Call Center

4800

SRI DAYS

48x100 = 4800 SRI Certificates by the SRI Days

5000

VIRTUAL TRAINING CENTER SRI AUDITORS

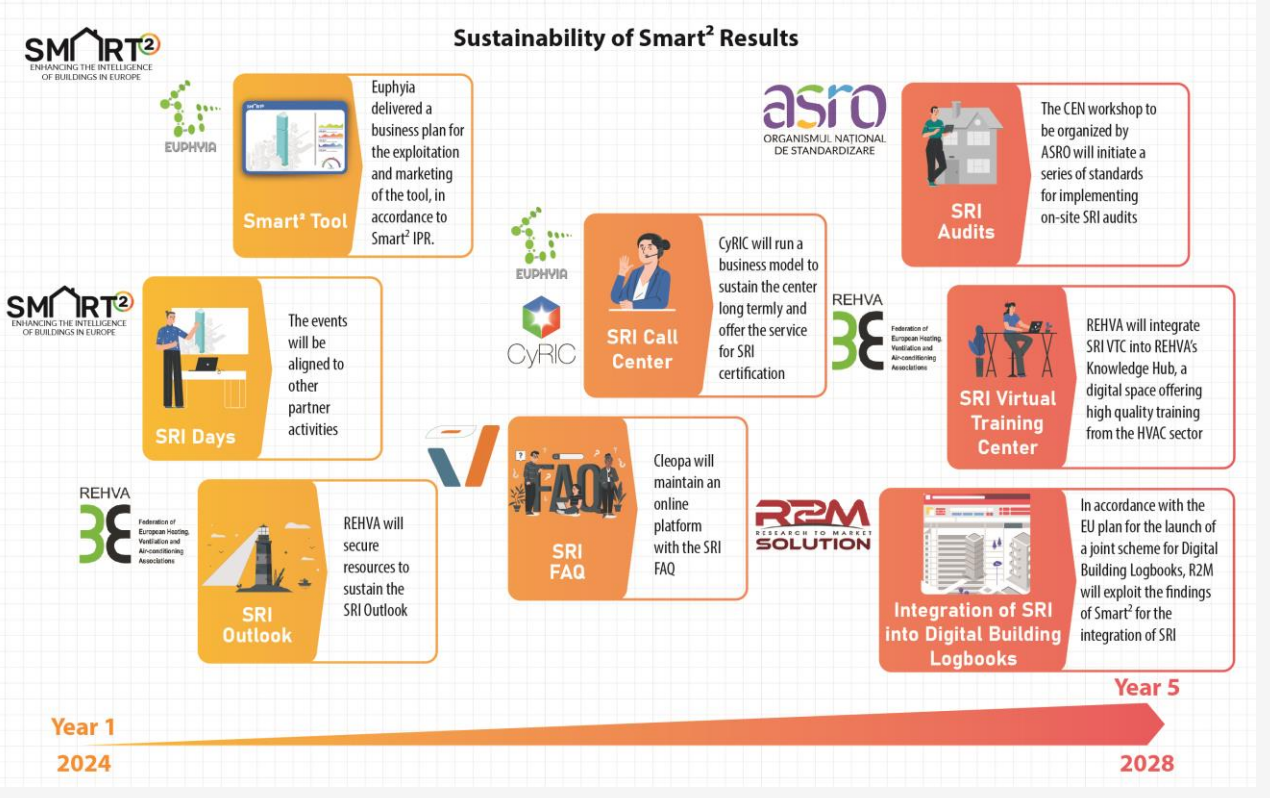
1000x5 = 5000 SRI Certificates by the VTC SRI Auditors

20

SMART READY COMMUNITIES

20 Smart Ready Communities

Smart² Sustainability of Project Results



Q+A Session

Dr.-Ing- Paris A Fokaides
Euphyia Tech
Technical and Scientific Manager
paris@euphyia-tech.com

SRI-ENACT

Co-creating Tools and Services
for Smart Readiness Indicator Uptake

SRI-ENACT Toolkit

SRI Assessment Tool & Decision Support Tool

24/09/2024

Apostolos Arsenopoulos (NTUA)

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI-ENACT Toolkit – Overview

- SRI-ENACT toolkit is accessible under the url: https://www.srienact-tool.eu/

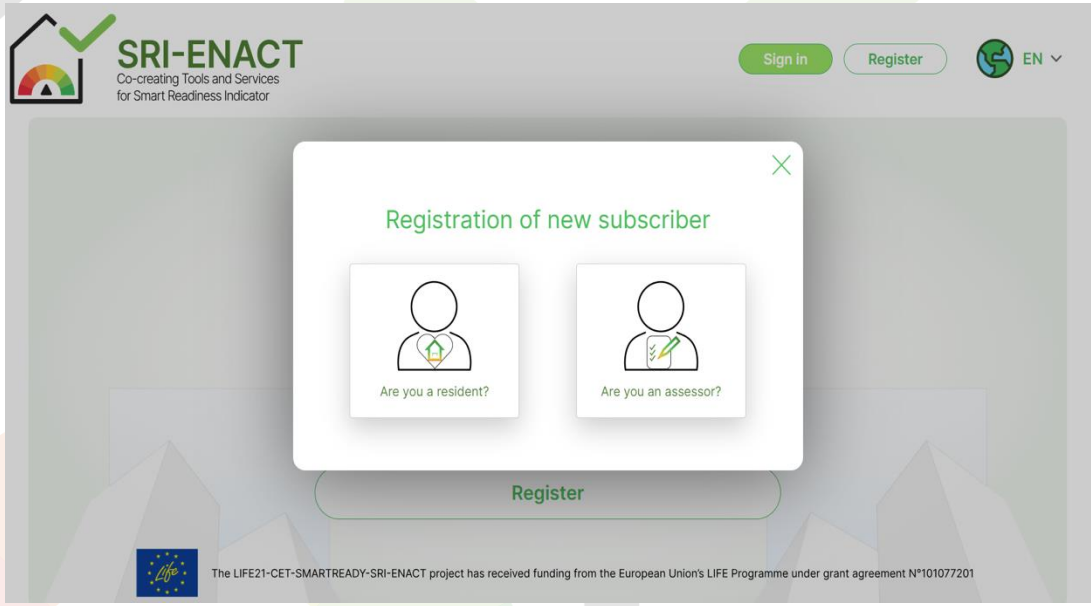
- SRI-ENACT toolkit includes:
  - ✓ Assessment tool that implements the SRI methodology
  - ✓ Decision support tool for supporting decisions regarding the smart-ready upgrades

- SRI-ENACT toolkit offers different user roles:
  - ✓ Resident, assessor, supervisor/administrator providing different access policies and views of the SRI assessment at national or EU level

SUSTAINABLE PLACES 2024
The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI-ENACT Toolkit – Registration Process

- Two options for registration:
  - ✓ Register as **resident**: Registration is open for the general public
  - ✓ Register as an **assessor**: Registration is controlled by the SRI-ENACT administrator. It requires first that the assessor is added by the administrator in assessor's registry.
- In both options, email verification is required to activate your account



As a resident, the user will also be able to conduct assessments

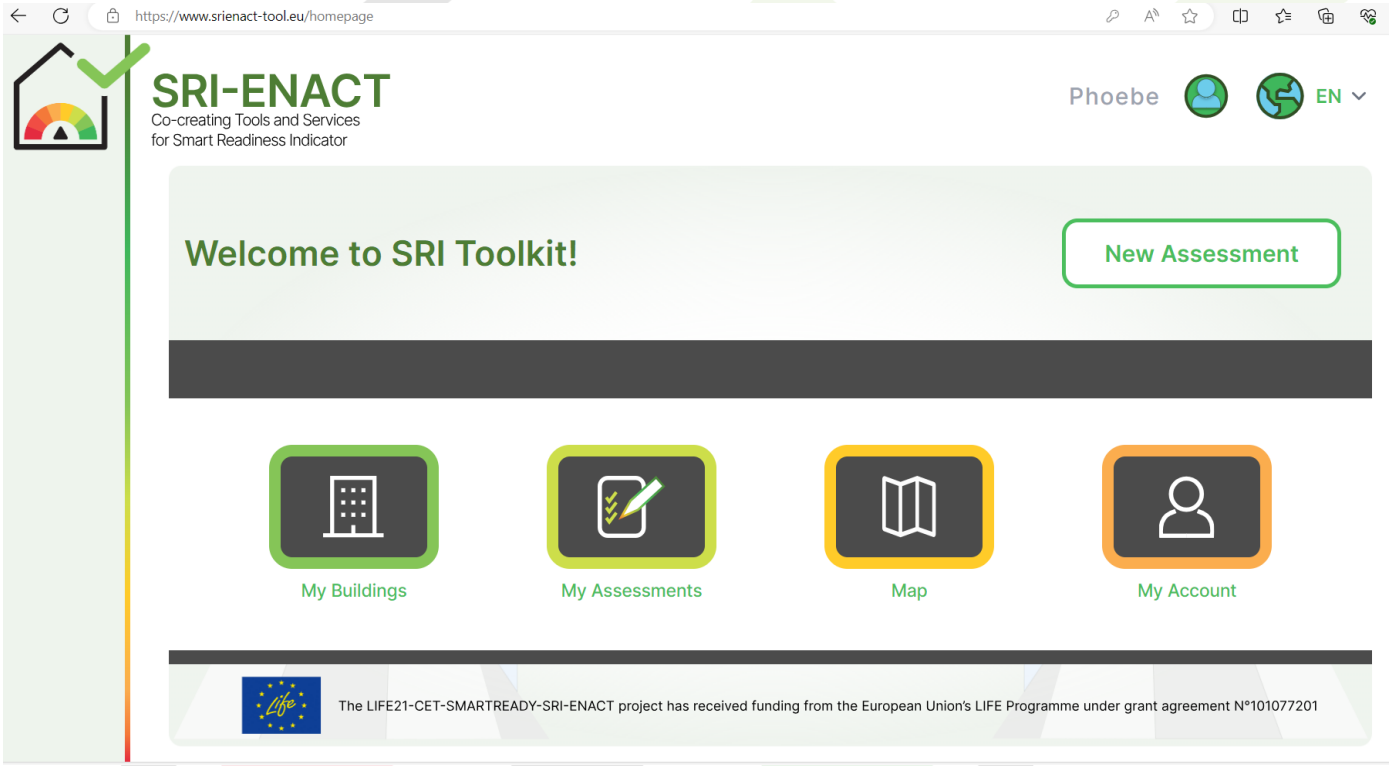
Only certified SRI-ENACT "assessors", who will participate in the pilot activities will be granted access to the tool as assessors in the system

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI-ENACT Toolkit – Menu

- **My Buildings:** Create new buildings and store them for later use
- **My Assessments:** View, access all your assessments
- **Map:** View your building assessments in Google maps
- **My Account:** Manage your account

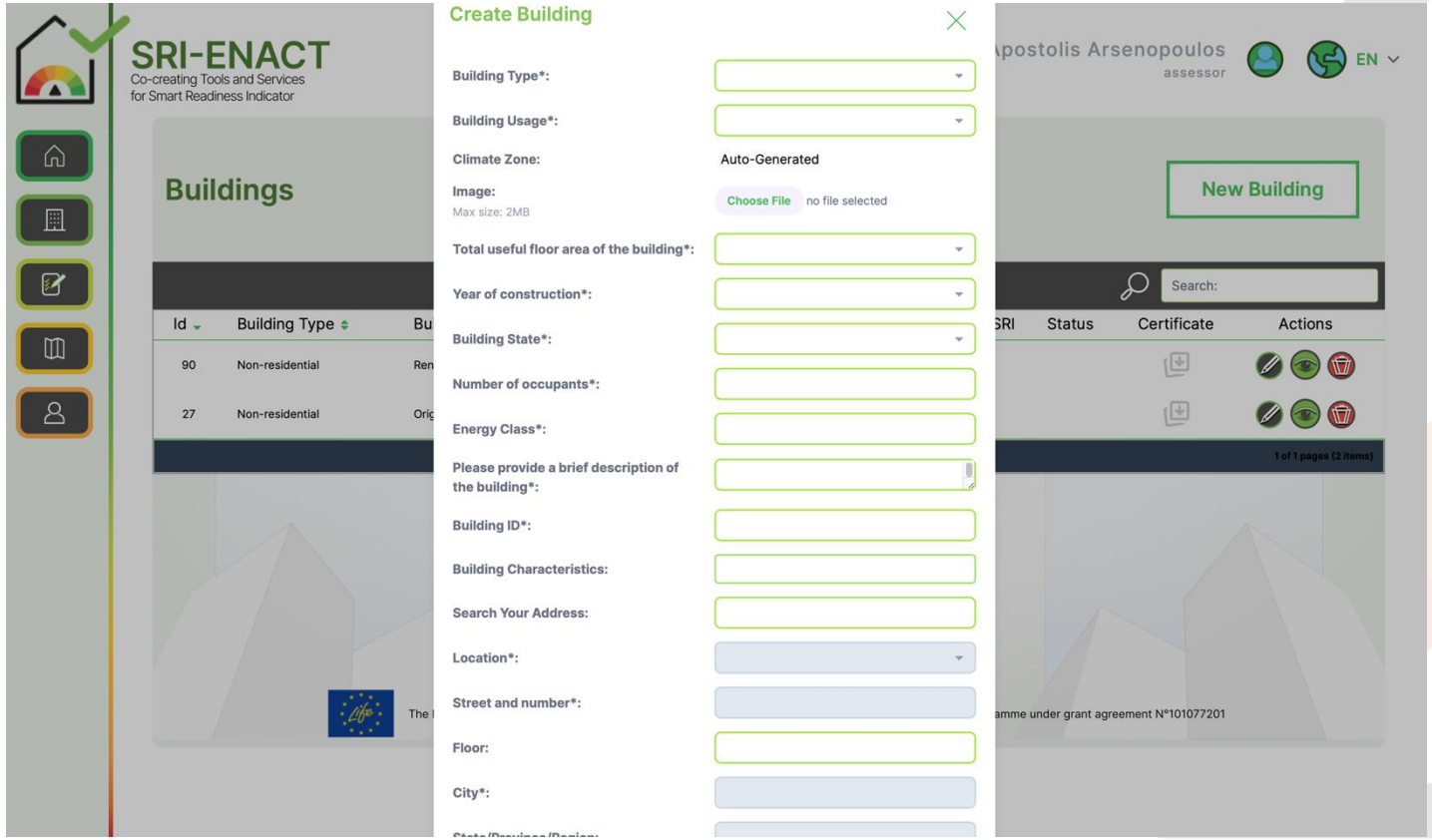


SRI-ENACT DST is not directly accessible from the menu; It is only accessible after the completion of an SRI assessment

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI-ENACT Assessment Tool – Assessment Workflow (1/5)

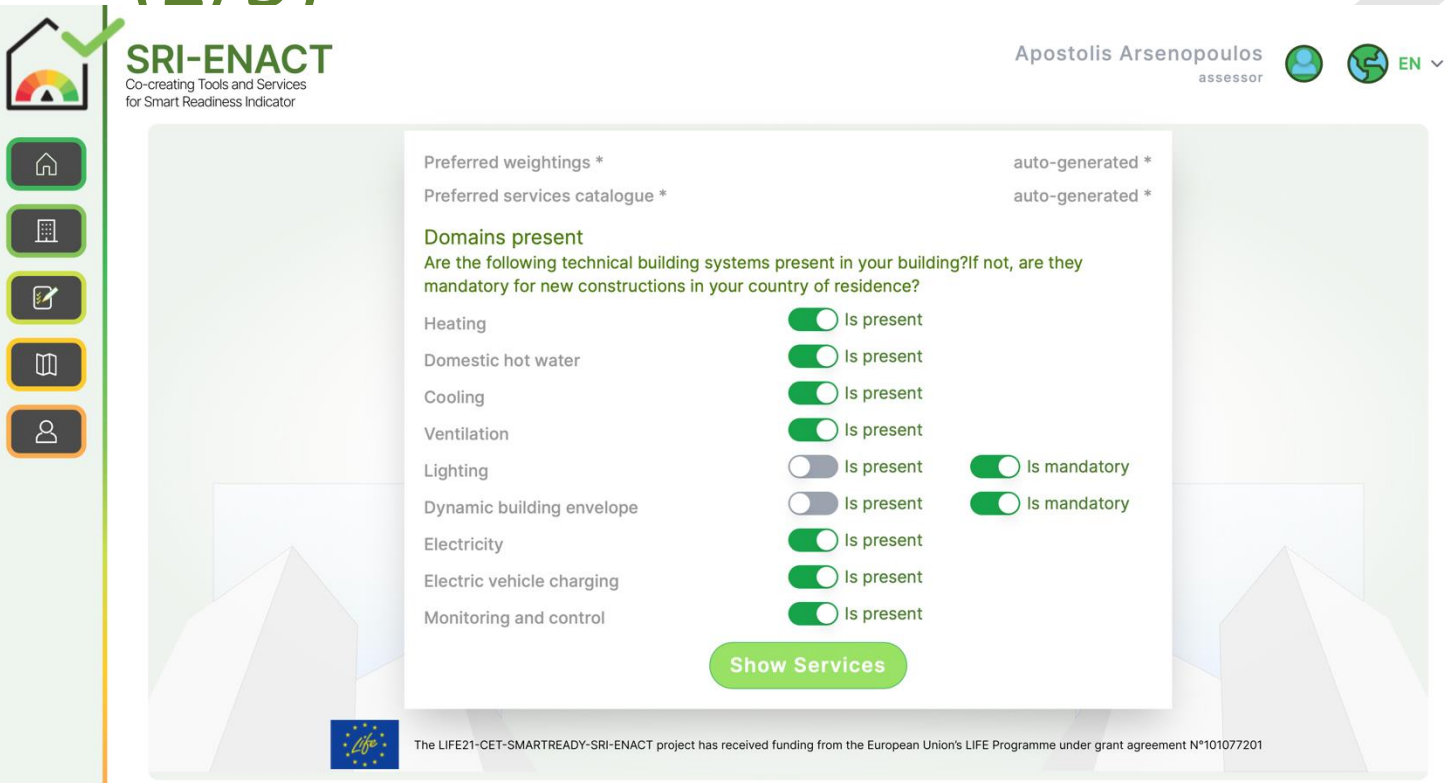


After clicking on “New Assessment”, you will be asked to select a building from “My buildings” or add a new Building (Google maps integrated to facilitate Building addition)

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI-ENACT Assessment Tool – Assessment Workflow (2/5)

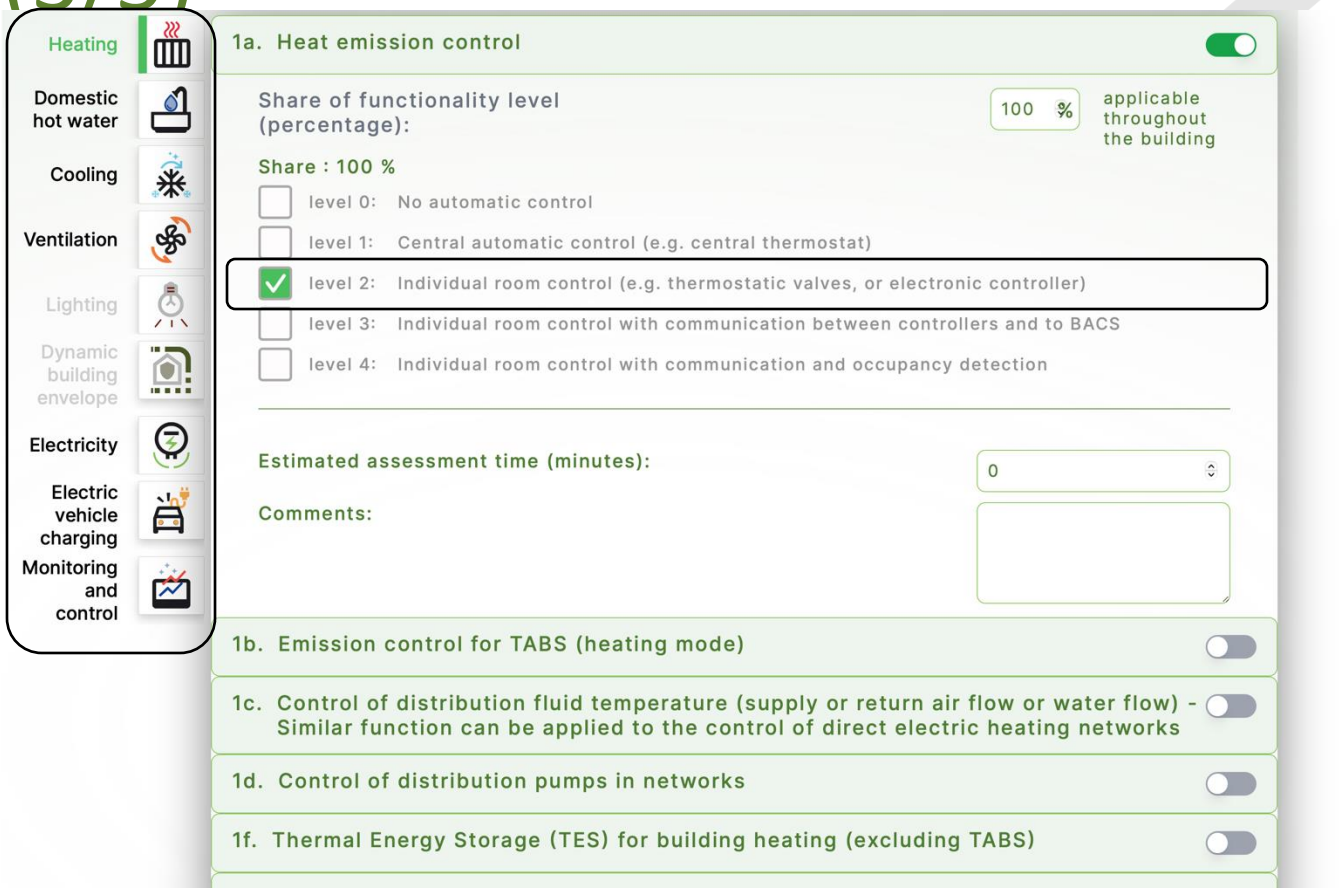


Select present domains and Mandatory/Non mandatory in case of non-presence. Note that the Assessment method is pre-defined to Method B and cannot be modified by the assessor.

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI-ENACT Assessment Tool – Assessment Workflow (3/5)

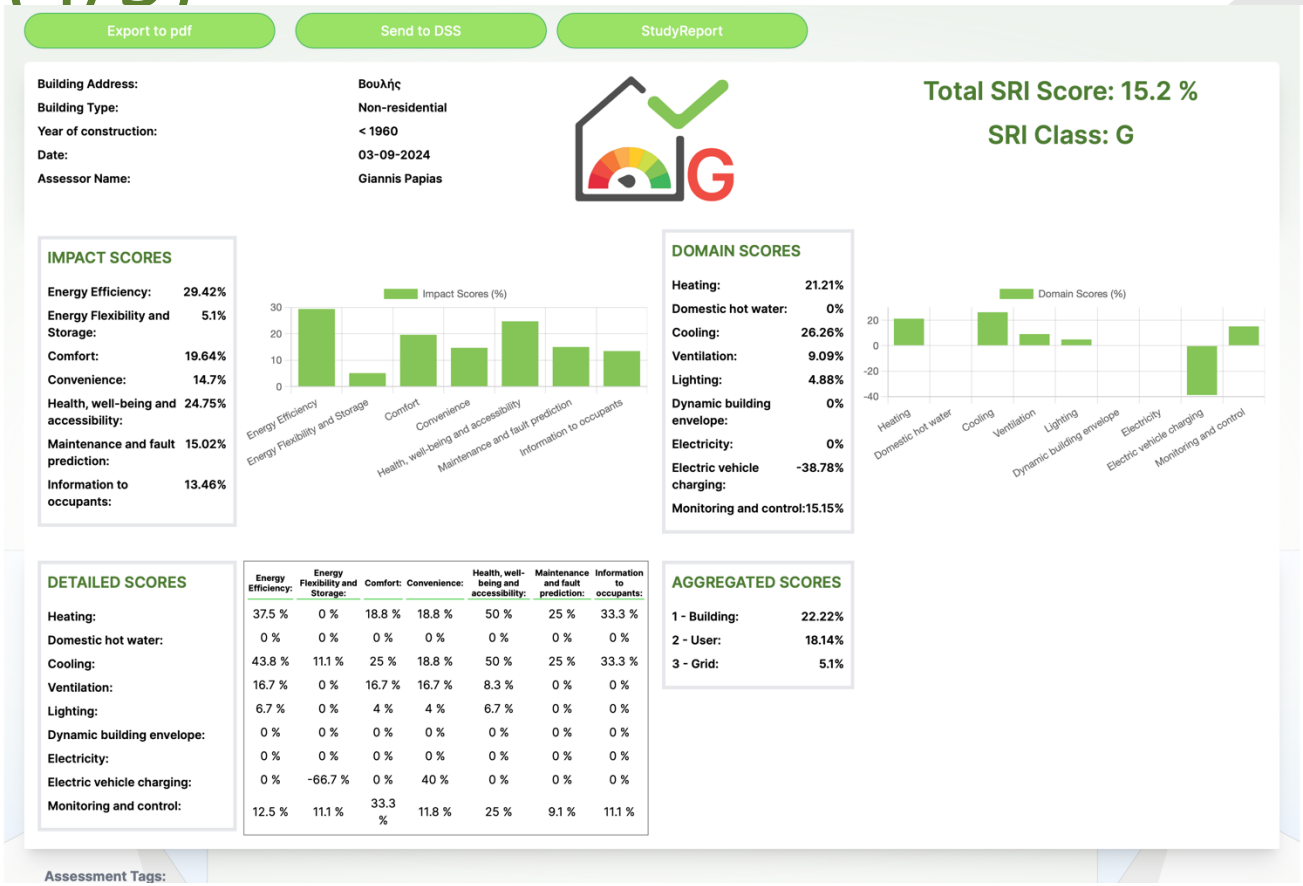


Select the domain from the menu on the left, and unfold the services. For each service, define the functionality level. Press “Confirm” to save your data and “clear” to restart. Once completed, press “Calculate SRI”

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI-ENACT Assessment Tool – Assessment Workflow (4/5)

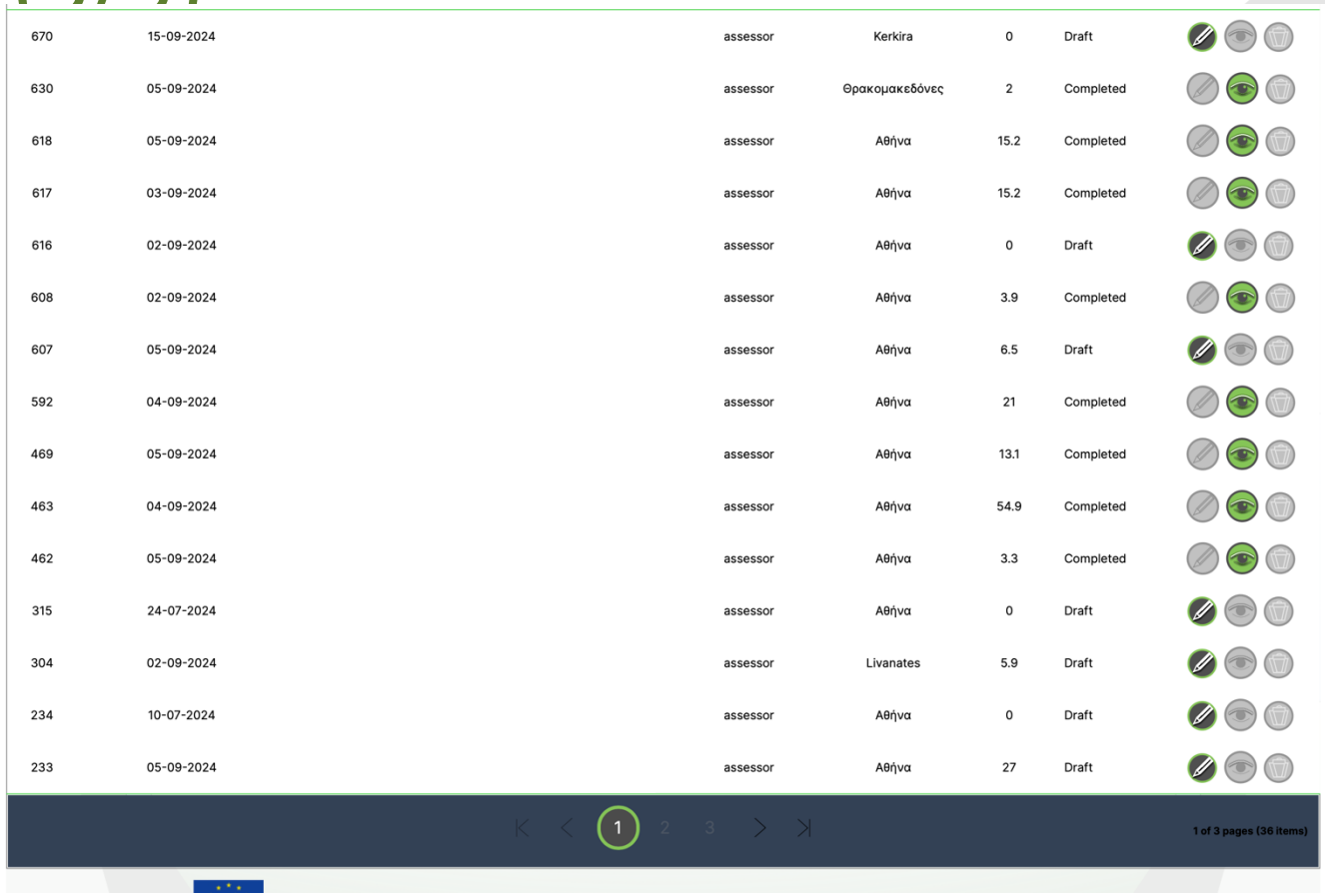


View the output of your evaluation. At this stage, you can return back to refine/correct your assessment. Once, the evaluation is complete, press “Complete Assessment”. Press “Send to DSS” to access the SRI-ENACT DST.

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI-ENACT Assessment Tool – Assessment Workflow (5/5)



670	15-09-2024	assessor	Kerkira	0	Draft	
630	05-09-2024	assessor	Θρακομακεδόνες	2	Completed	
618	05-09-2024	assessor	Αθήνα	15.2	Completed	
617	03-09-2024	assessor	Αθήνα	15.2	Completed	
616	02-09-2024	assessor	Αθήνα	0	Draft	
608	02-09-2024	assessor	Αθήνα	3.9	Completed	
607	05-09-2024	assessor	Αθήνα	6.5	Draft	
592	04-09-2024	assessor	Αθήνα	21	Completed	
469	05-09-2024	assessor	Αθήνα	13.1	Completed	
463	04-09-2024	assessor	Αθήνα	54.9	Completed	
462	05-09-2024	assessor	Αθήνα	3.3	Completed	
315	24-07-2024	assessor	Αθήνα	0	Draft	
304	02-09-2024	assessor	Livanates	5.9	Draft	
234	10-07-2024	assessor	Αθήνα	0	Draft	
233	05-09-2024	assessor	Αθήνα	27	Draft	

1 2 3

1 of 3 pages (36 items)

Access your assessment in draft mode or after completion. Draft assessments can be deleted. Completed assessments cannot be modified and cannot be deleted.

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

Case study report

CASE STUDY

SMART READINESS INDICATOR (SRI)

The building:

Building information

EPC (Energy Performance Certificate)
-

Building type
Non-residential

Location
Βουλής

Surface area
10000-25000 m²

Construction year
< 1960

Specificities
The Hellenic Parliament building, completed in 1843 has housed the Hellenic Parliament since 1934. It is situated at the heart of Athens, facing onto Syntagma Square.

Building image

Main technical characteristics:

- Office Spaces
- Public Spaces
- Variable Refrigerant Volume (VRV)
- Three-Way Valve Control
- BMS Integrated
- Cooling Tower Integration
- Fan Coil Units
- Water Chillers

OUTCOMES OF THE SRI ASSESSMENT:

OVERALL SCORE
15.2%

SCORES PER IMPACT CRITERIA:

Domain	Score
Energy Efficiency	29.42%
Energy Flexibility and Storage	5.1%
Comfort	19.64%
Convenience	14.7%
Health, well-being and accessibility	24.75%
Maintenance and fault prediction	15.02%
Information to occupants	13.46%

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI-ENACT Toolkit – Other User Roles

- **Country/EU supervisors**
  - ✓ Read-only access to aggregated statistics
- **Country/EU Administrators**
  - ✓ Read-only access to actual SRI assessments
  - ✓ Able to add new users (assessors)
  - ✓ Check the default weightings

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI-ENACT Tool – Tips & Takeaways

- Please **cross-check your assessment**, before you press “Complete Assessment”. After this step, the evaluation is no longer editable.
- The application allows **one assessment for each building**. The latest one overwrites the previous assessment.
- After the completion of the assessment, you will have **access to the input data and the results** (also downloadable as a pdf)
- Please report any issue/bug/potential new feature in **sri-toolkit_support@singularlogic.eu**

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI Greek Test Phase

METHOD B

120 non-residential building assessments supported by the project **SRI-ENACT**

METHOD A & B

600 residential building assessments (Method A) and

2 non-residential assessments to predefined pilot sites (Method B) supported by the project **SmartSquare**

METHOD A OR B OR C

100 residential and non-residential building assessments supported by the project **easySRI**

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI DST – Overview

- Scenario-driven framework building on the results of the involved buildings' SRI evaluations drawn from the SRI Assessment Tool.

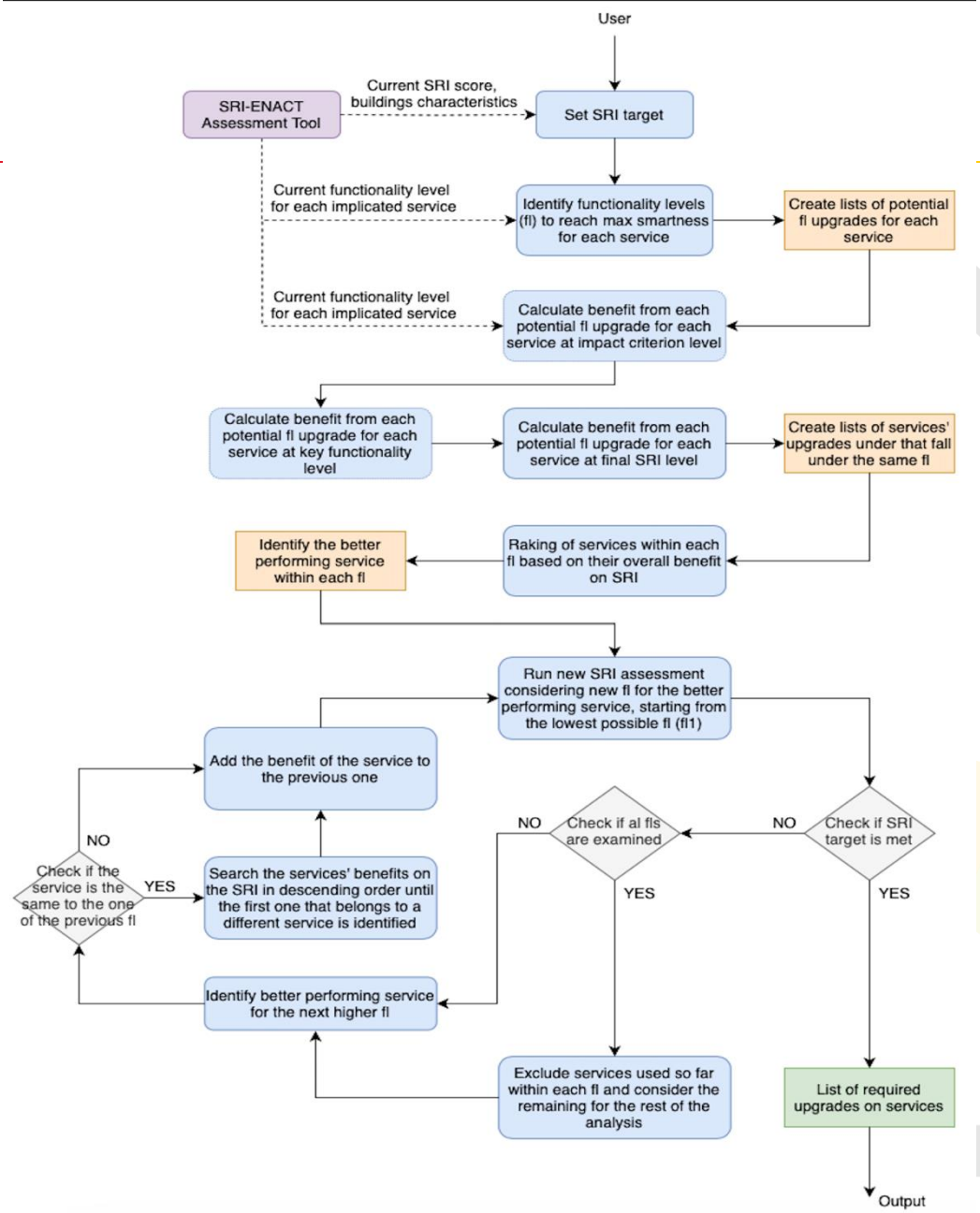
- Key insights and targeted solutions to the users regarding the smart-ready upgrades (or combinations of smart-ready upgrades presented as scenarios) that should be implemented.

- User-defined SRI target should be met for a building under evaluation, keeping the number of interventions to be materialised and their respective cost at their minimum levels.

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

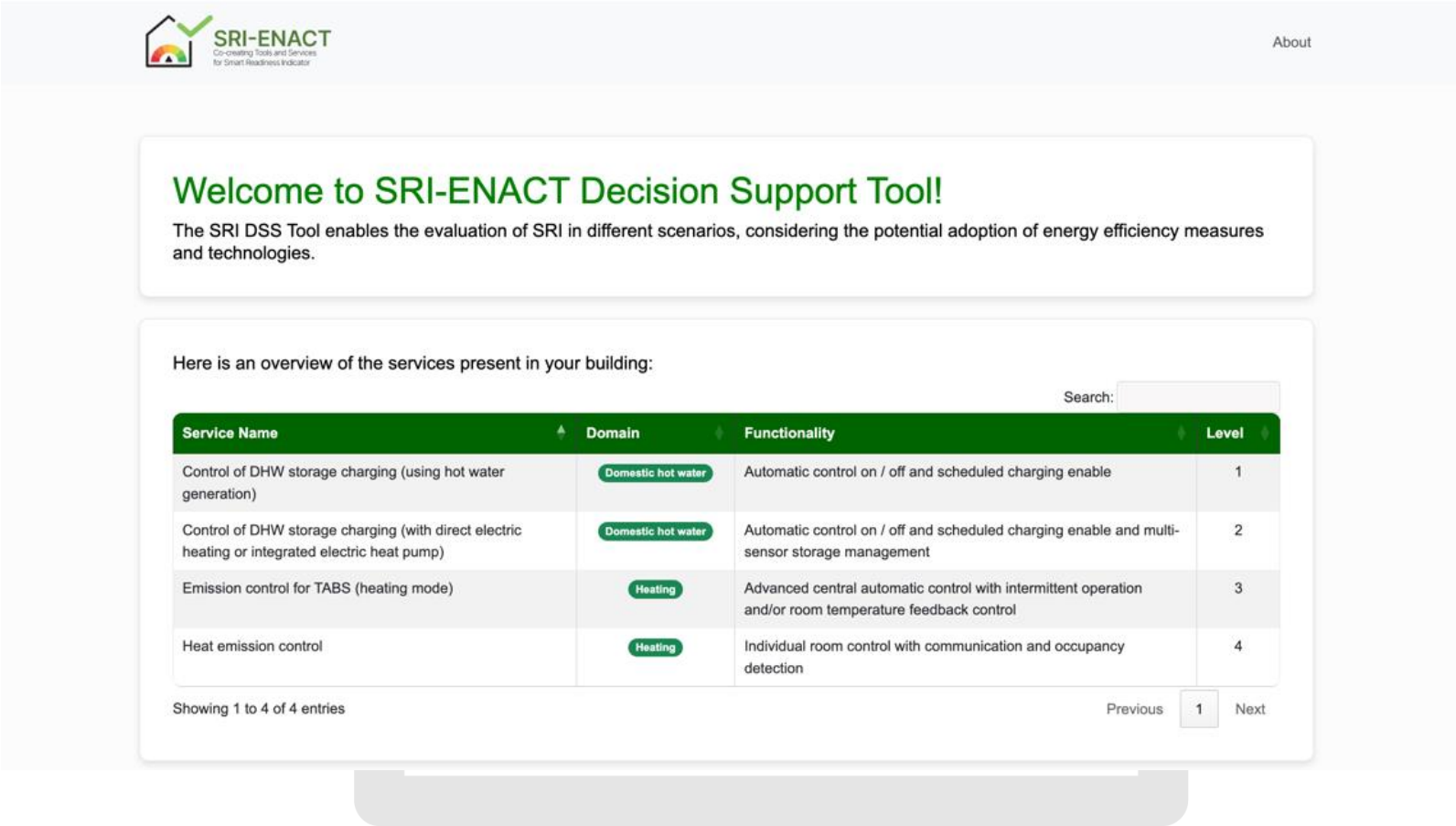
SRI DST – Flowchart



SUSTAINABLE PLACES 2024
The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI DST – Set your SRI Goal page (1/3)

- Overview of the present smart-ready services in the building under examination – interconnection point to the SRI Assessment Tool.

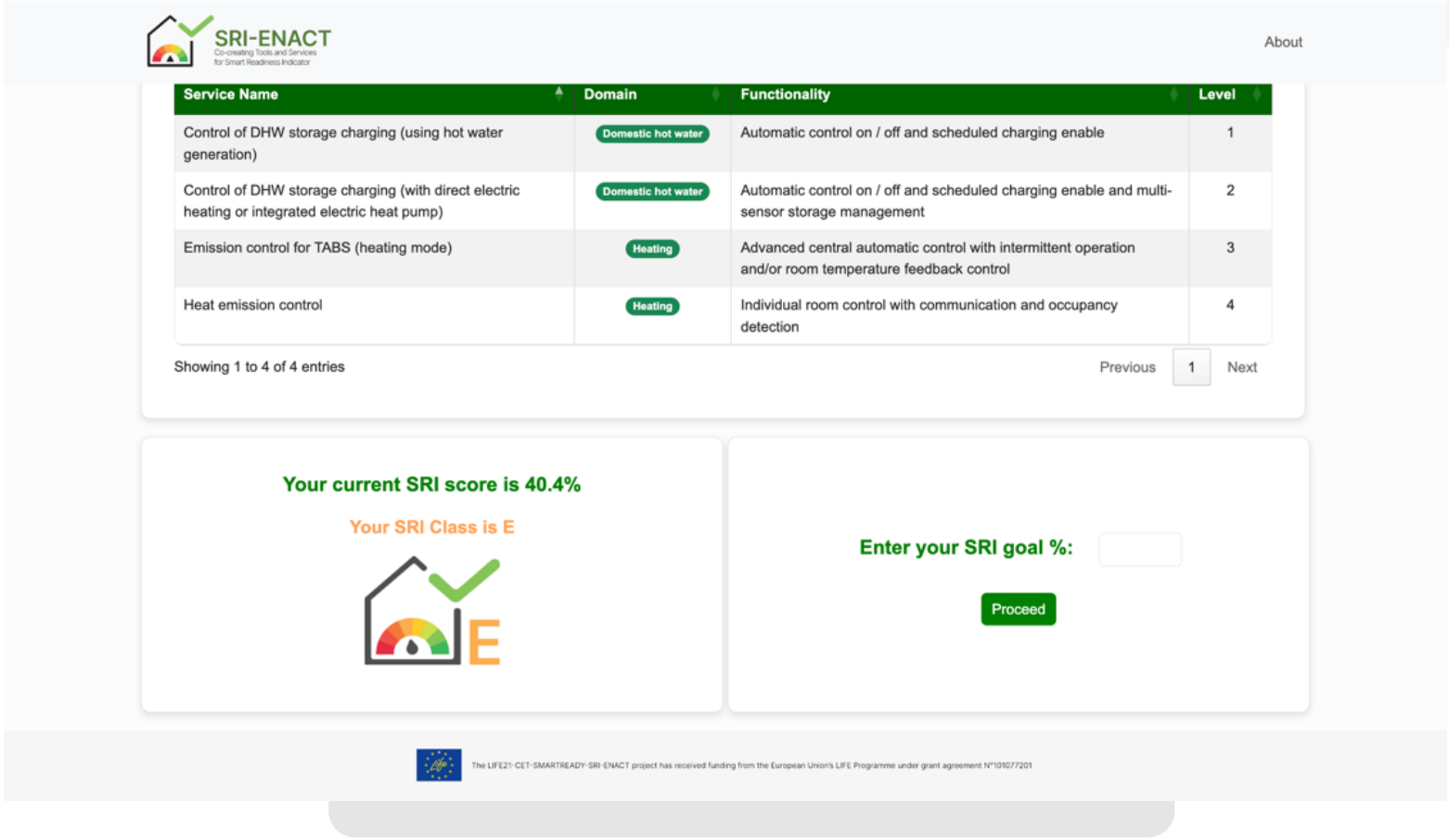


SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI DST – Set your SRI Goal page (2/3)

- Overview of the current SRI score and the SRI class for the building under evaluation
- Interaction with the user through the requested SRI goal.

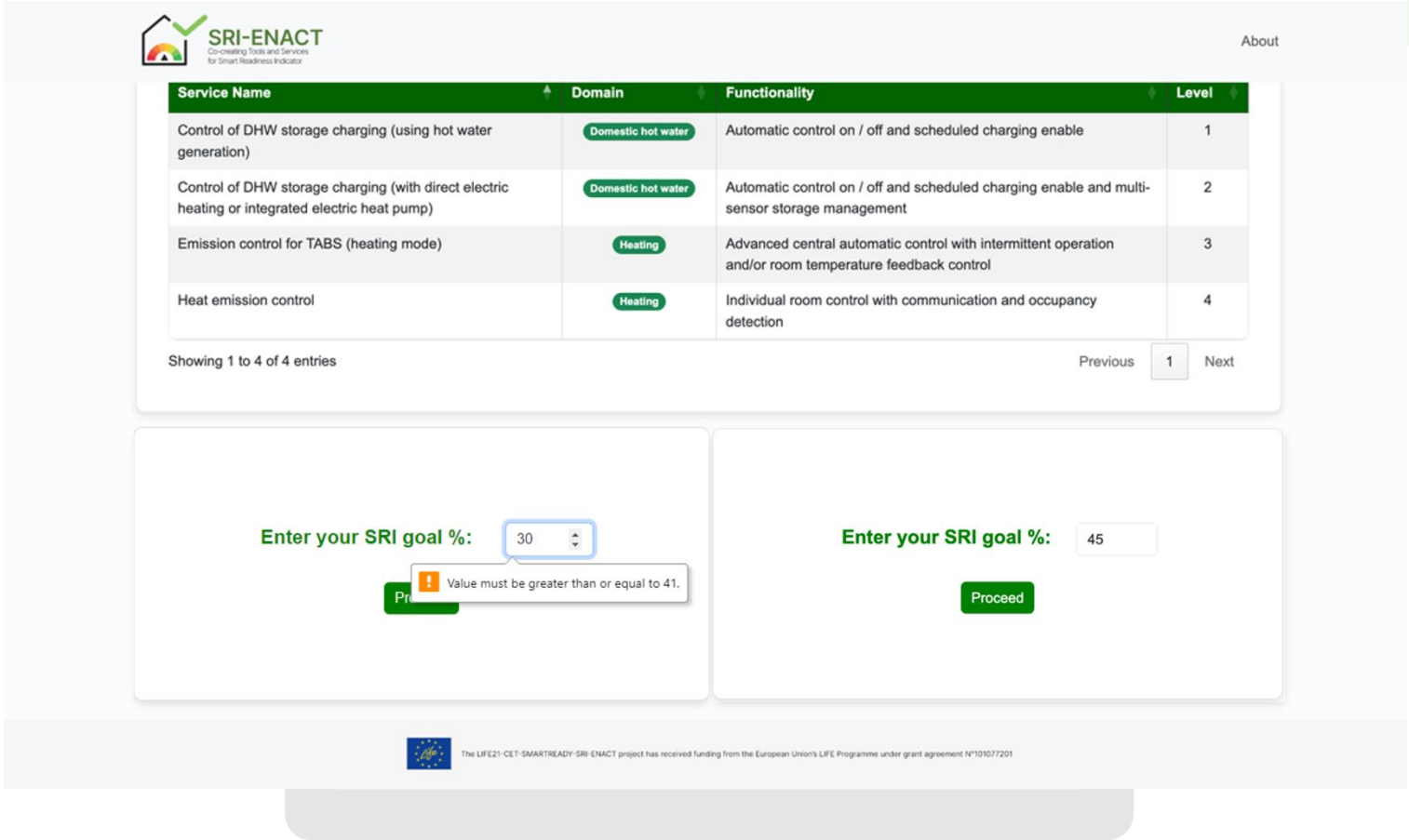


SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI DST – Set your SRI Goal page (3/3)

- Operational check of the set SRI goal.
- Valid SRI and proceed to the “Upgrade Scenarios” analysis.

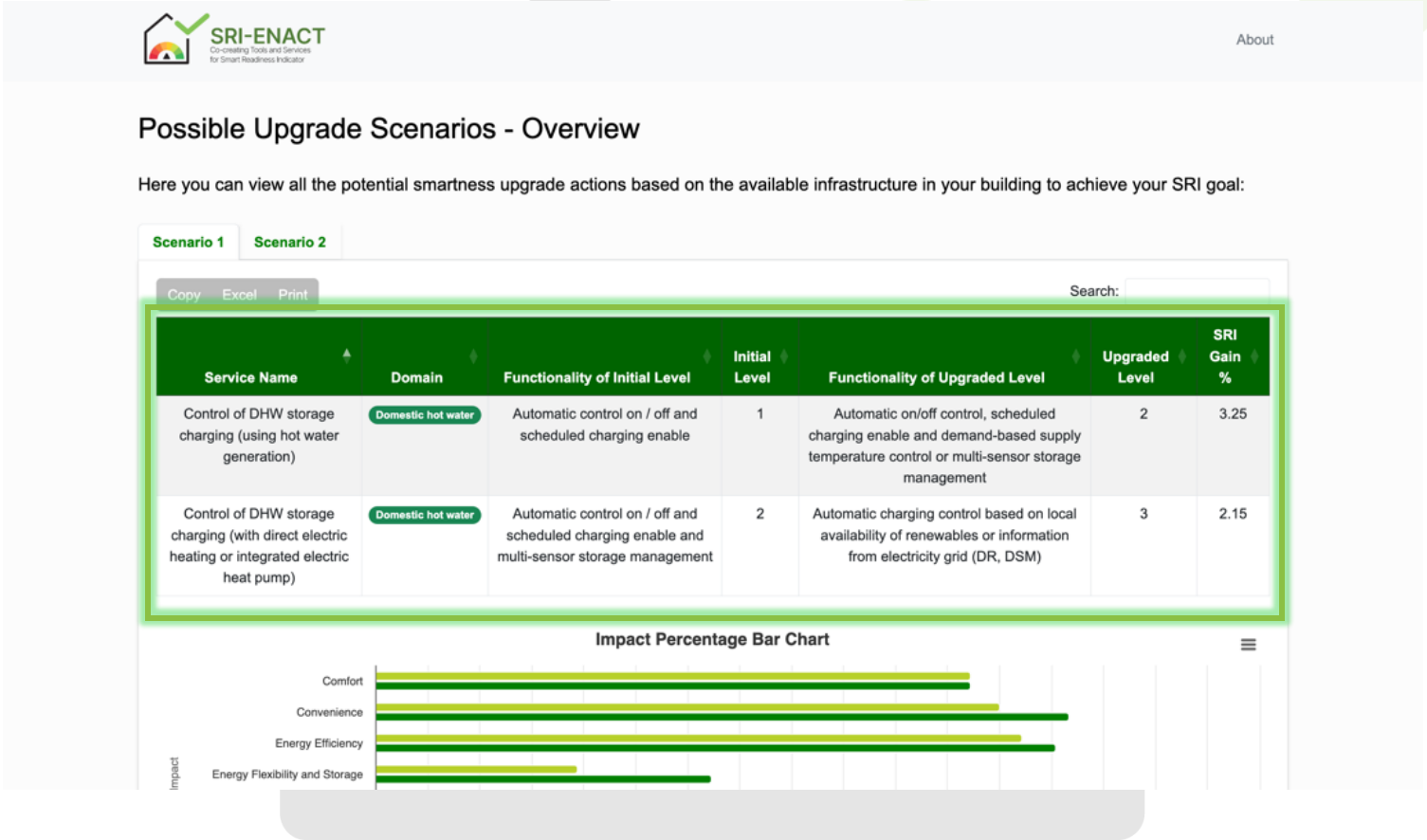


SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI DST – Scenarios page (1/4)

- Overview of the potential smartness upgrade scenarios that meet the SRI goal, and effect on the impact criteria.
- Detailed information on the potential smartness upgrade scenarios



SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI DST – Scenarios page (2/4)

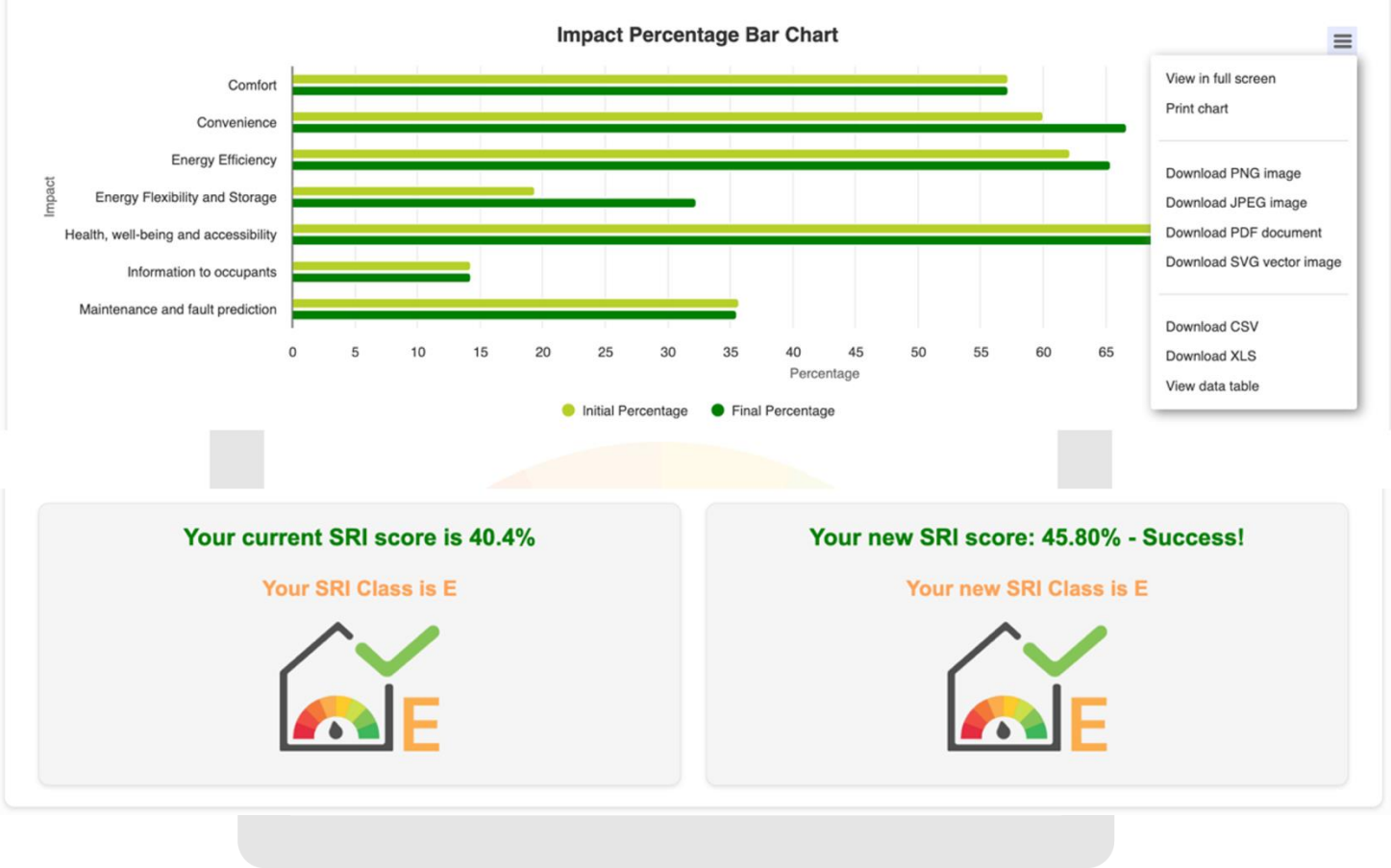
- ‘Upgrade scenarios’ effect on the impact criteria and calculation of the new SRI score and class for each scenario that meet the defined SRI goal.
- The upgrade scenario’s effect on the impact criteria is compared to the current situation captured by the SRI Assessment Tool.

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union’s LIFE Programme under grant agreement N°101077201

SRI DST – Scenarios page (3/4)

- A smart functions' suite is linked to the graph of the effect of each scenario upgrade on the impact criteria.
- Comparative presentation of the current and new SRI score and class for each upgrade scenario.

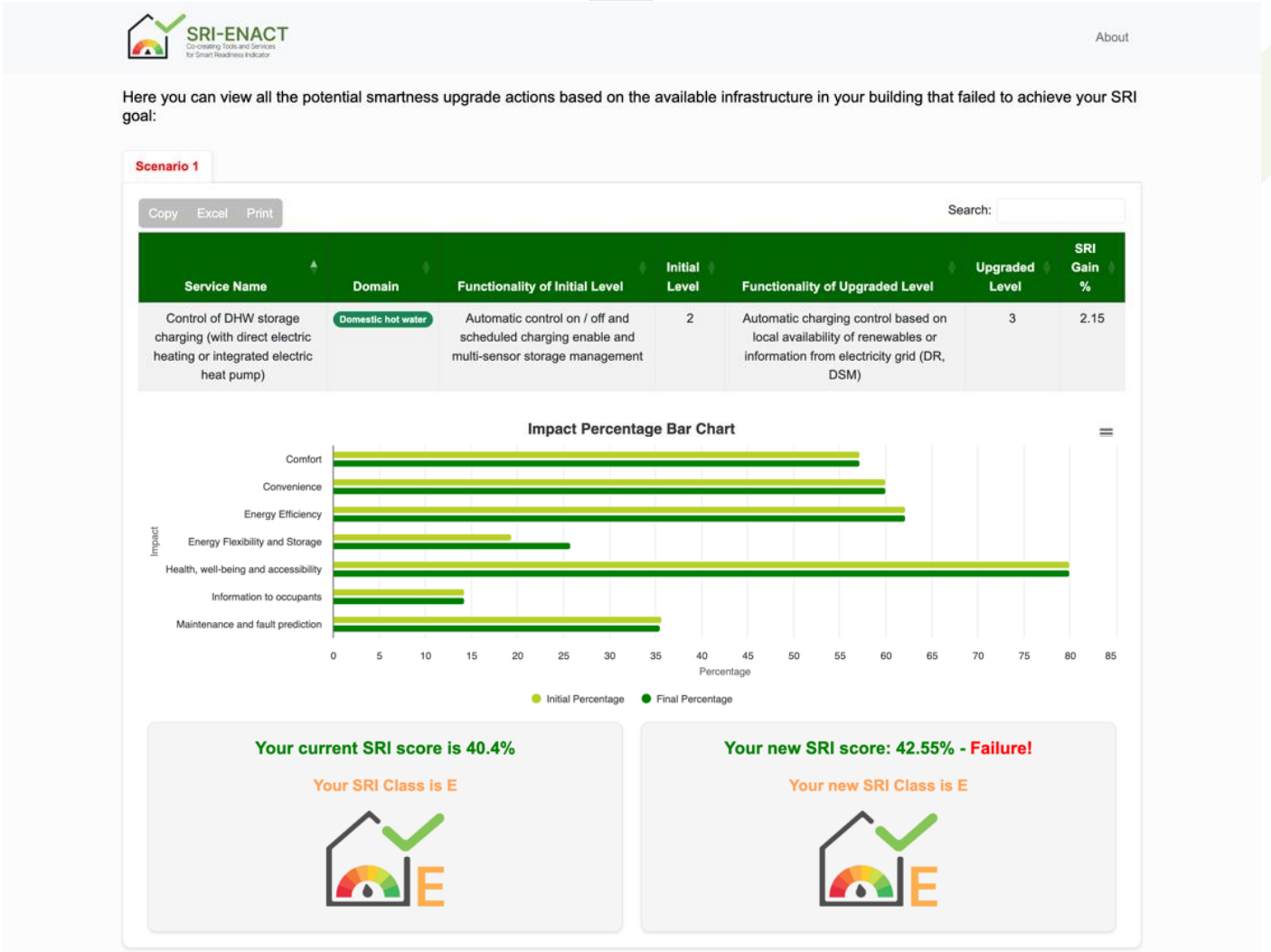


SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI DST – Scenarios page (4/4)

- Overview of the potential smartness upgrade scenarios that fail to meet the SRI goal.
- Presentation of the upgrade scenarios' effect that fail to meet the defined SRI goal on the impact criteria.
- Calculation of the new SRI score and class.



SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SRI-ENACT

Co-creating Tools and Services for Smart Readiness Indicator Uptake

Thank you!

24/09/2024

Apostolos Arsenopoulos (NTUA)

SUSTAINABLE PLACES 2024

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

SUSTAINABLE PLACES 2024

Better Regulation Toolbox

EPBD Implementation: Smartness for Energy Efficiency – tools for buildings and their users

24.09.2024, Sustainable Places 2024, Luxembourg

Supported by (Technical Support Team - TST):

Partners:

Co-funded by the European Union

This project has received funding from the European Union's funding instrument for the environment and climate action (LIFE programme) under grant agreement No 101120926.

tunES Overview

tunES supports seven Energy Agencies to prepare the next policy transposition of EPBD

TUNES: TUNING EPC AND SRI INSTRUMENTS TO DELIVER FULL POTENTIAL

- Time frame: 24 Months, between September ´23 – August ´25
- Funding: LIFE Programme
- Coverage: 9 EU countries represented.

CONSORTIUM

Partners (agencies or representatives)

ENEA, KAPE CRES, EIHP, EMI, AUSTRIAN ENERGY AGENCY, KAPE, Jožef Stefan Institute

Supported by (Technical Support Team - TST):

empirica
Coordinator
BRG experts

DTU

Università degli Studi di Cassino e del Lazio Meridionale – 1979 – Sol per Noctem

POLITECHNIKA LUBELSKA

Better Regulation Guideline & Tools

The BRG is a very advanced approach to policy making

BRG OVERVIEW

69 tools, >600 pages

Evidence-based

Transparent — **Policy-making** — Inclusive

HOW DOES BRG GET INTO A LIFE PROJECT?

EC has gathered a lot of experience in using BRG

We believe national policy would also benefit …

… and seven energy agencies are working on it

BRG - A EUROPEAN FRAMEWORK TO POLICY MAKING

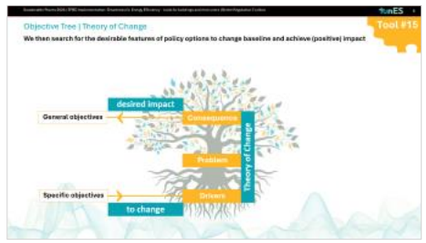
Source: empirica

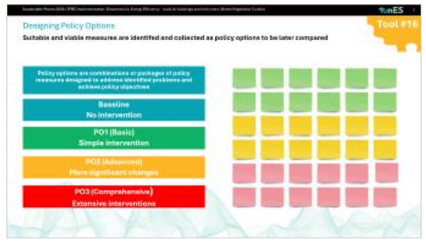
Overview of policy work using BRG

The policy design process in tunES applies the BRG Toolbox on national level

Overview of policy effort conducted by seven energy agencies

Analysis of national problems	Identifying national objectives	Policy options	Impact assessment	National papers
Sep'23 – May'24	Mar'23 – Aug'24	Aug'24 – Oct'24	Nov'24 – May'25	June'25 – Aug'25





To come

To come

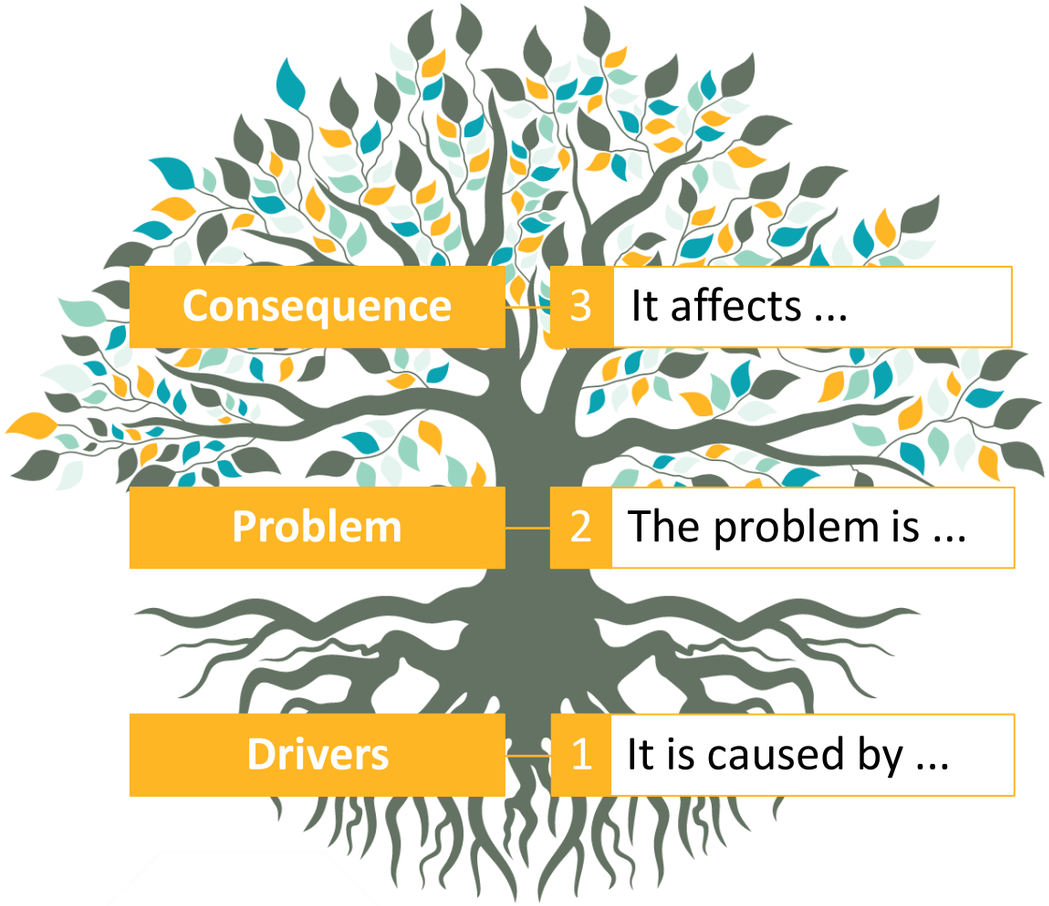
Stakeholder consultation throughout

Tool #13

Problem Tree

A Problem Tree helps to understand the underlying causality of the most important issues

PROBLEM TREE LOGIC



PROBLEM TREE PURPOSE

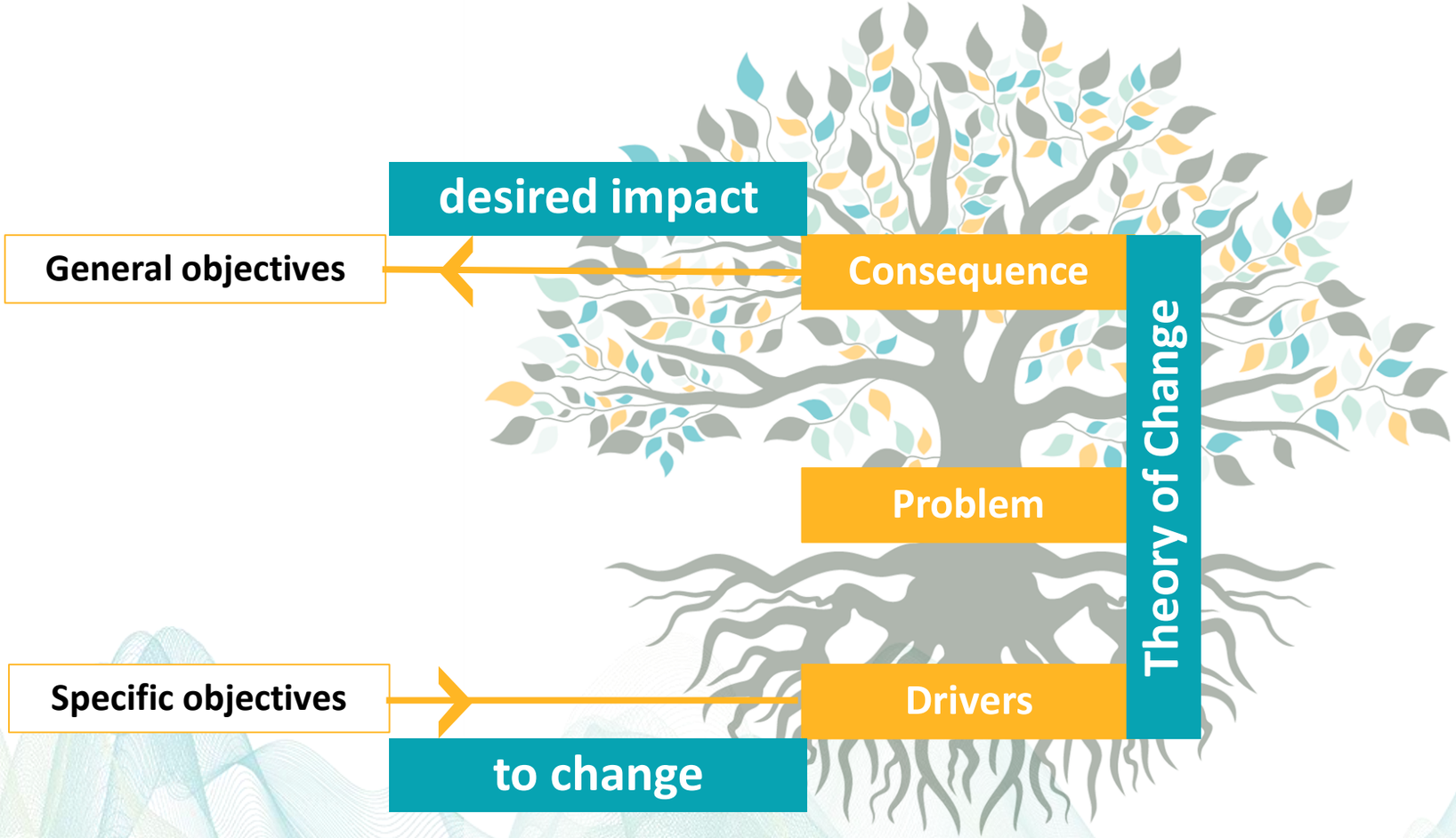
To solve a problem, drivers must be tackled – otherwise, problem "grows" again and consequences reappear

Source: empirica

Tool #15

Objective Tree | Theory of Change

We then search for the desirable features of policy options to change baseline and achieve (positive) impact



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Simple intervention

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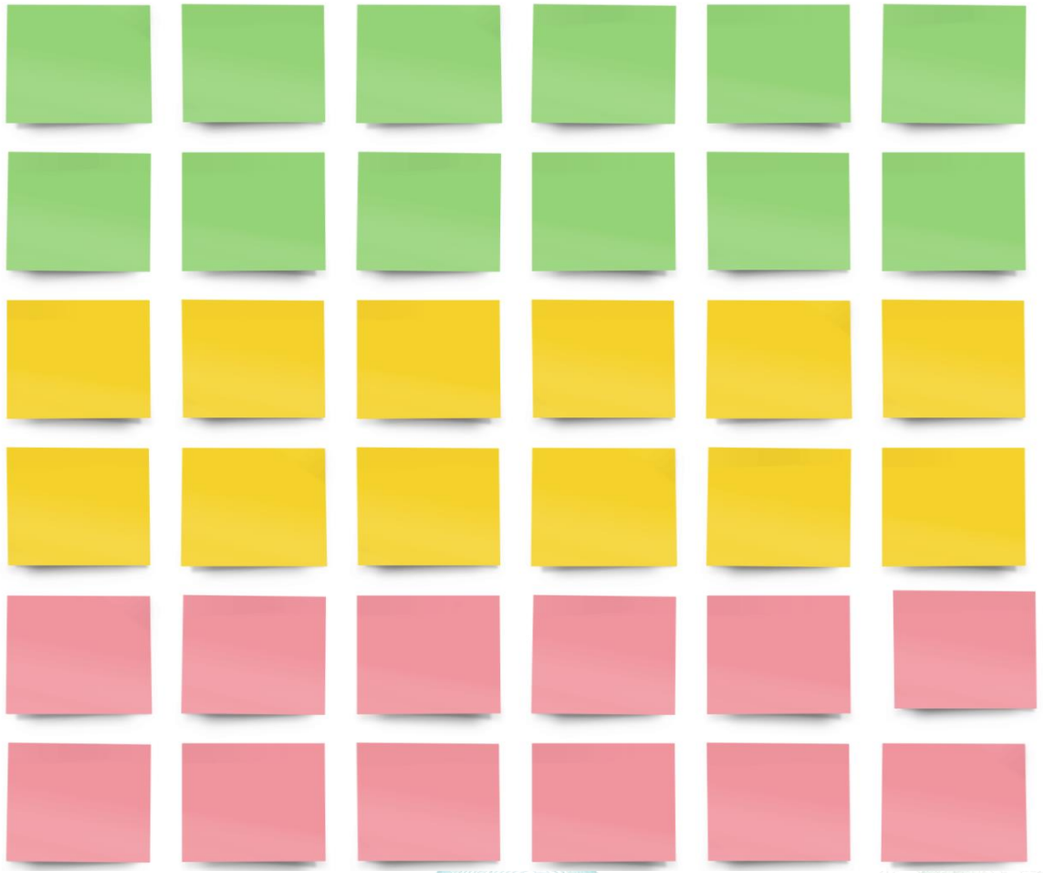
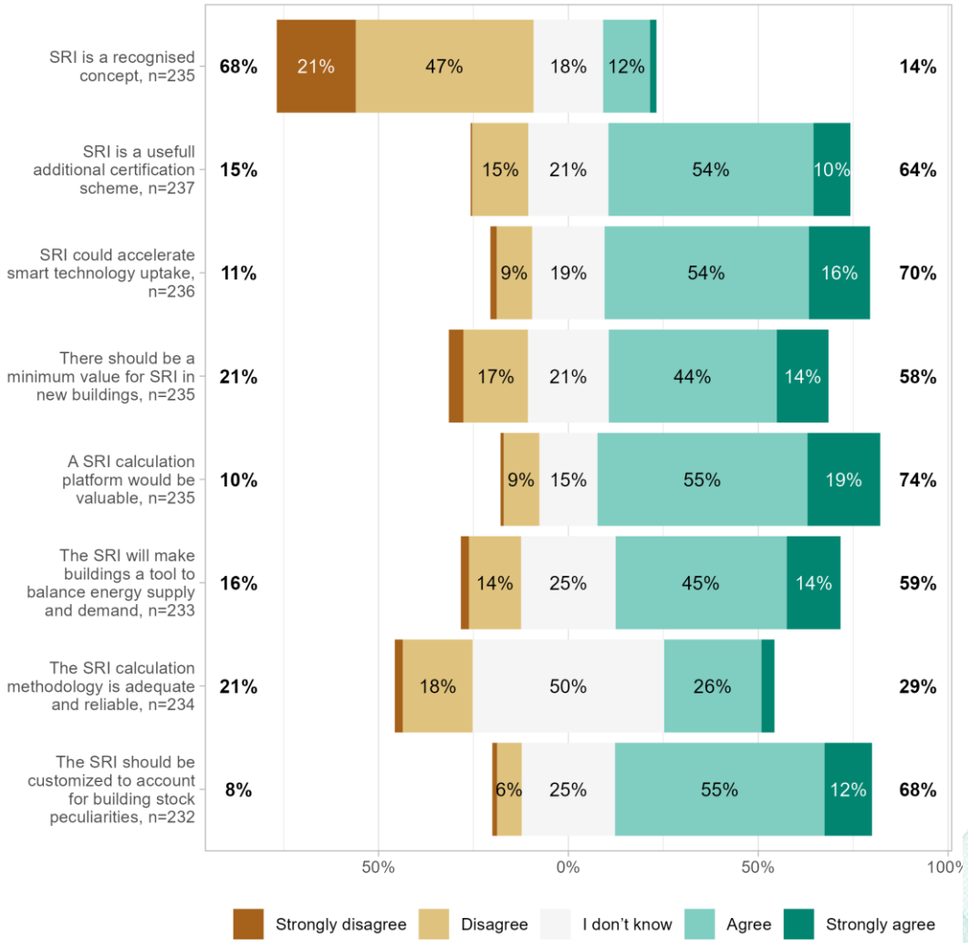


Stakeholder Engagement Process

Tool #52

A lot of data is needed, including from affected stakeholders – survey/interview results are available

SRI EXAMPLE



D2.1 - (mostly) in 7 MS

Survey: 242

Interviews: 49

emp.onl/tunes-d21

tunES Outlook

Overview of the next steps and final outcomes

FURTHER STEPS TO BE TAKEN

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- Access to all tools and templates
- Scientific team ready to support
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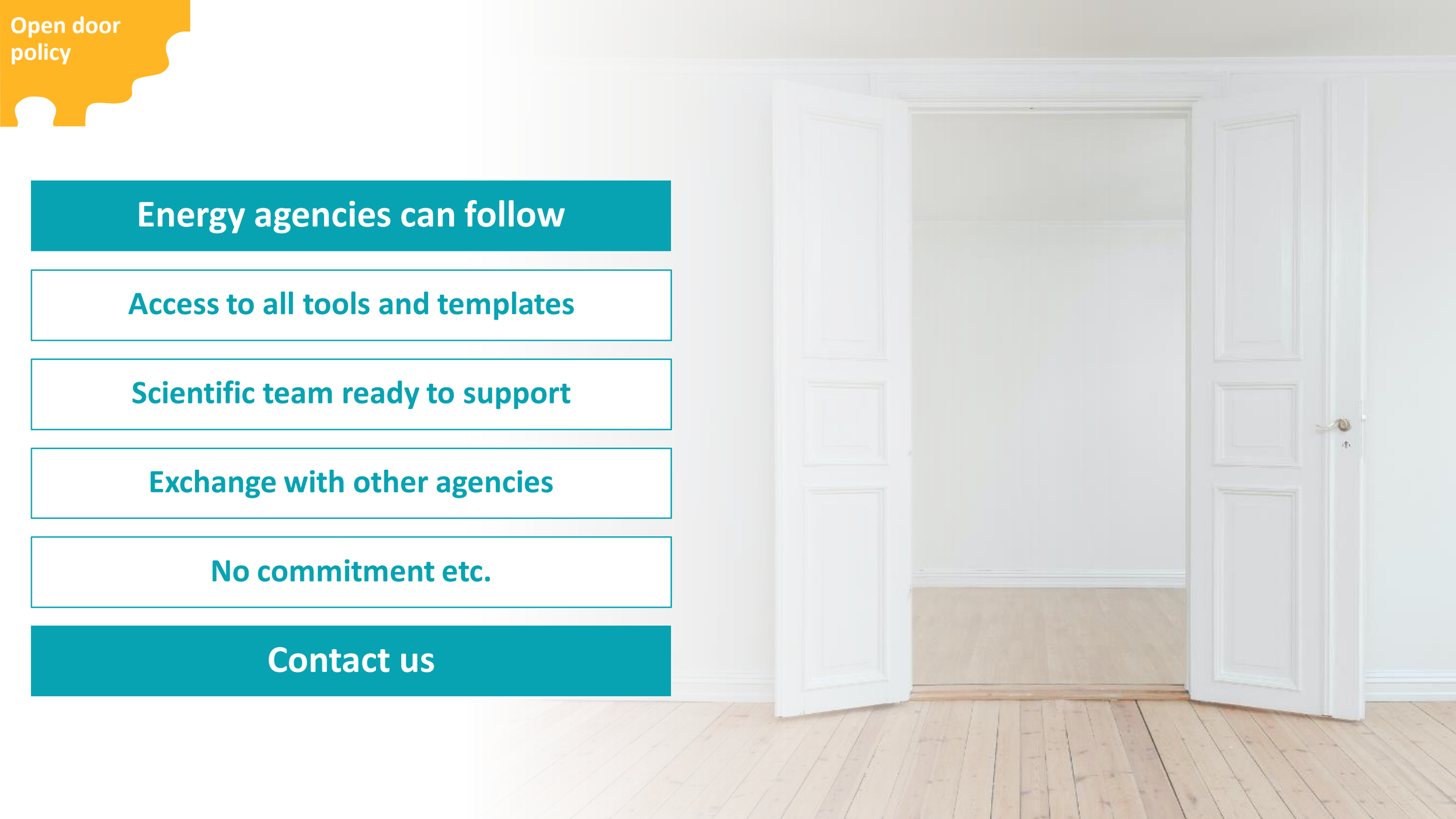
Contact us



Practice Collection

D2.1 Survey

tunES-project.eu + Newsletter

tunES-project

@tunES

tunES@empirica.com

tunes-project.eu

empirica

linkedin.com/in/georg-vogt-energy

Co-funded by the European Union

This project has received funding from the European Union's funding instrument for the environment and climate action (LIFE programme) under grant agreement No 101120926.

SUSTAINABLE PLACES 2024

Better Regulation Toolbox

EPBD Implementation: Smartness for Energy Efficiency – tools for buildings and their users

24.09.2024, Sustainable Places 2024, Luxembourg

Supported by (Technical Support Team - TST):

Partners:

Co-funded by the European Union

This project has received funding from the European Union's funding instrument for the environment and climate action (LIFE programme) under grant agreement No 101120926.

tunES Overview

tunES supports seven Energy Agencies to prepare the next policy transposition of EPBD

TUNES: TUNING EPC AND SRI INSTRUMENTS TO DELIVER FULL POTENTIAL

- Time frame: 24 Months, between September ´23 – August ´25
- Funding: LIFE Programme
- Coverage: 9 EU countries represented.

CONSORTIUM

Partners (agencies or representatives)

ENEA, KAPE CRES, EIHP, EMI, AUSTRIAN ENERGY AGENCY, KAPE, Jožef Stefan Institute

Supported by (Technical Support Team - TST):

empirica
Coordinator
BRG experts

DTU

Università degli Studi di Cassino e del Lazio Meridionale – 1979 – Sol per Noctem

POLITECHNIKA LUBELSKA

Better Regulation Guideline & Tools

The BRG is a very advanced approach to policy making

BRG OVERVIEW

69 tools, >600 pages

Evidence-based

Transparent — **Policy-making** — Inclusive

HOW DOES BRG GET INTO A LIFE PROJECT?

EC has gathered a lot of experience in using BRG

We believe national policy would also benefit …

… and seven energy agencies are working on it

BRG - A EUROPEAN FRAMEWORK TO POLICY MAKING

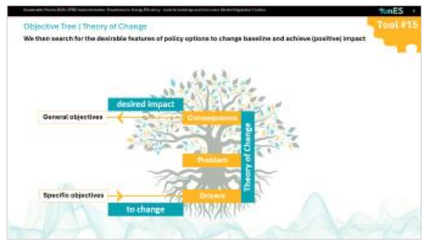
Source: empirica

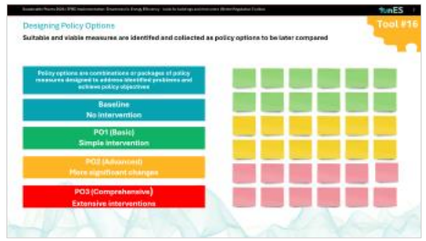
Overview of policy work using BRG

The policy design process in tunES applies the BRG Toolbox on national level

Overview of policy effort conducted by seven energy agencies

Analysis of national problems	Identifying national objectives	Policy options	Impact assessment	National papers
Sep'23 – May'24	Mar'23 – Aug'24	Aug'24 – Oct'24	Nov'24 – May'25	June'25 – Aug'25





To come

To come

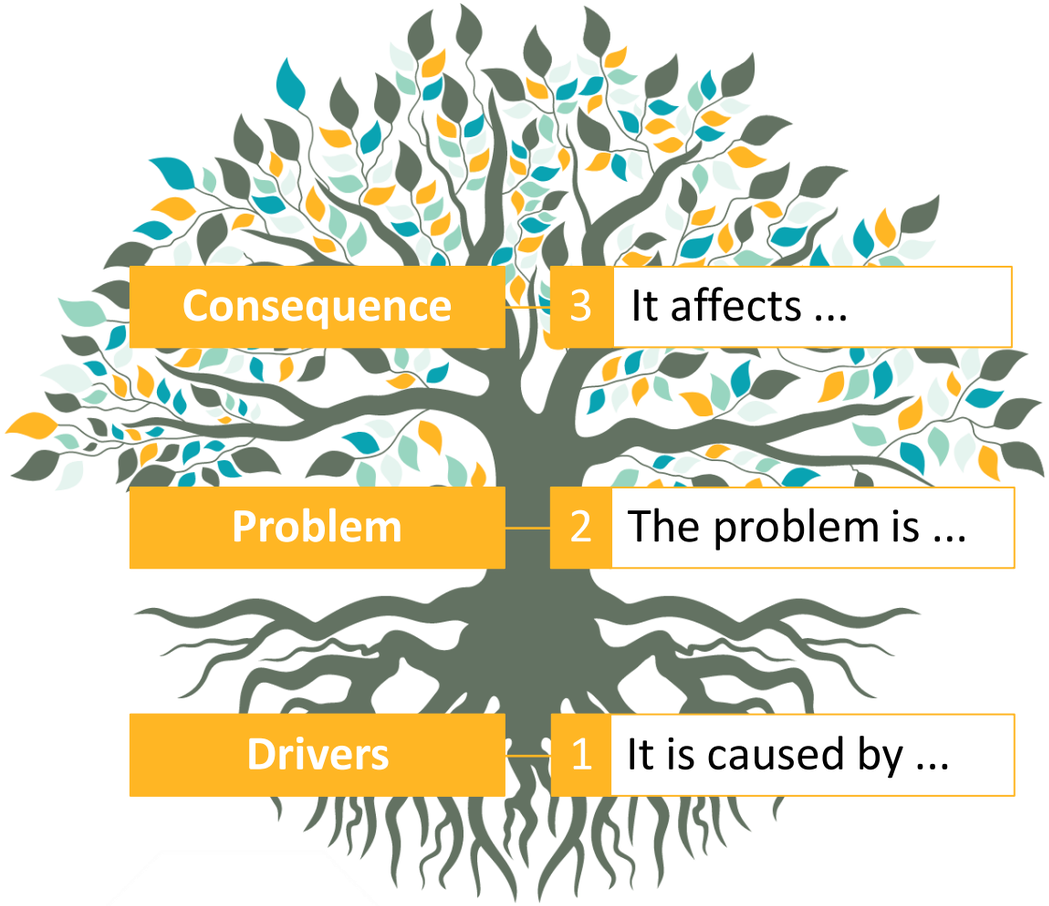
Stakeholder consultation throughout

Tool #13

Problem Tree

A Problem Tree helps to understand the underlying causality of the most important issues

PROBLEM TREE LOGIC



PROBLEM TREE PURPOSE

To solve a problem, drivers must be tackled – otherwise, problem "grows" again and consequences reappear

Source: empirica

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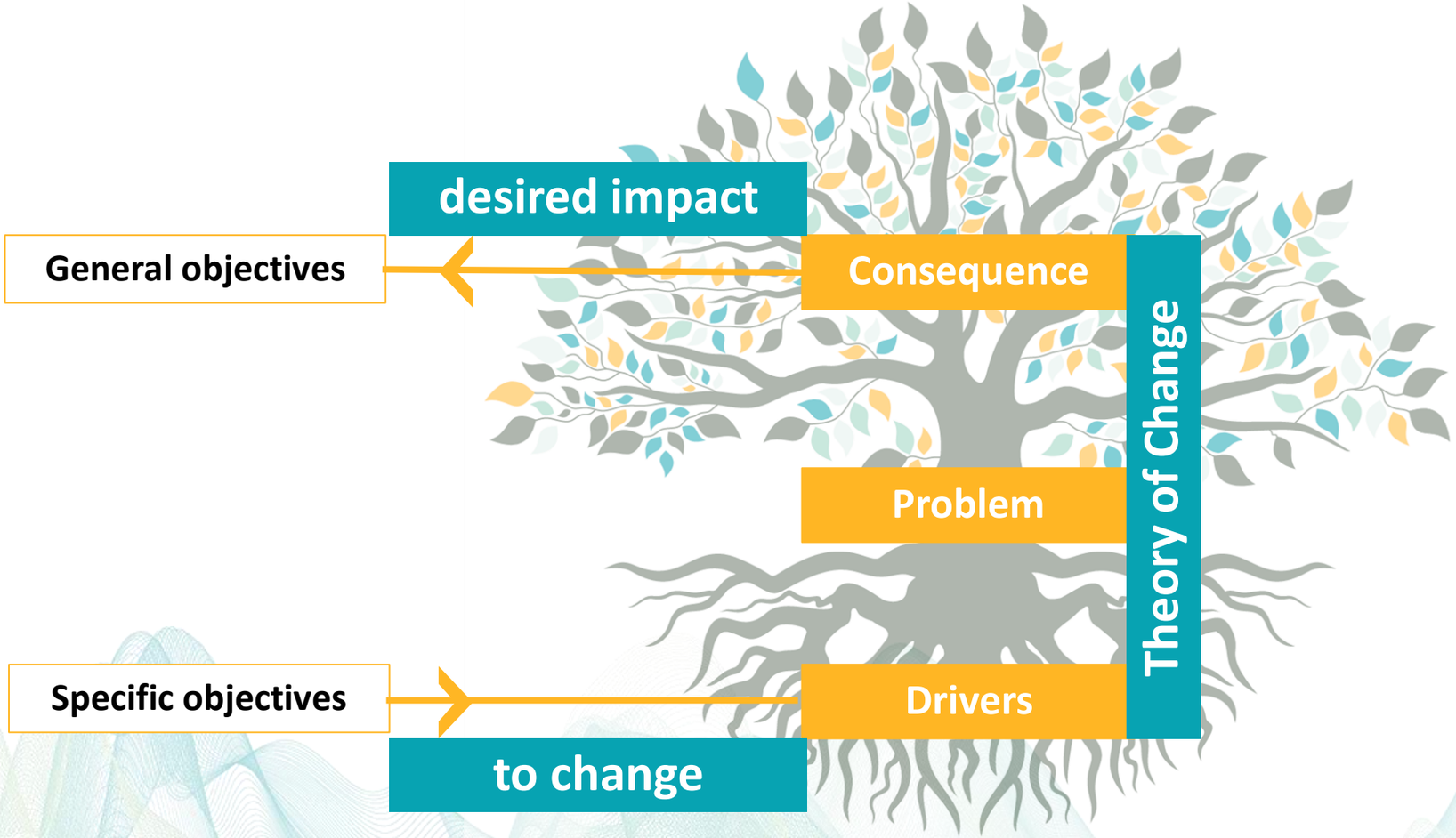

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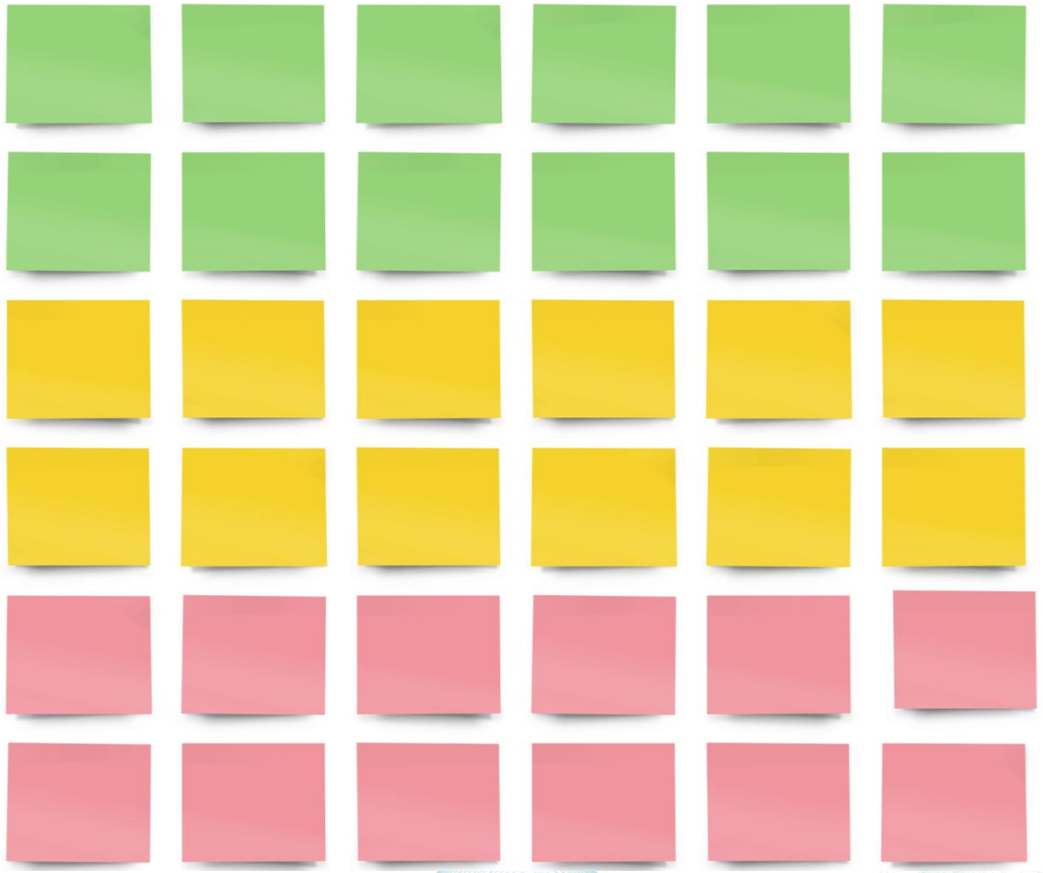

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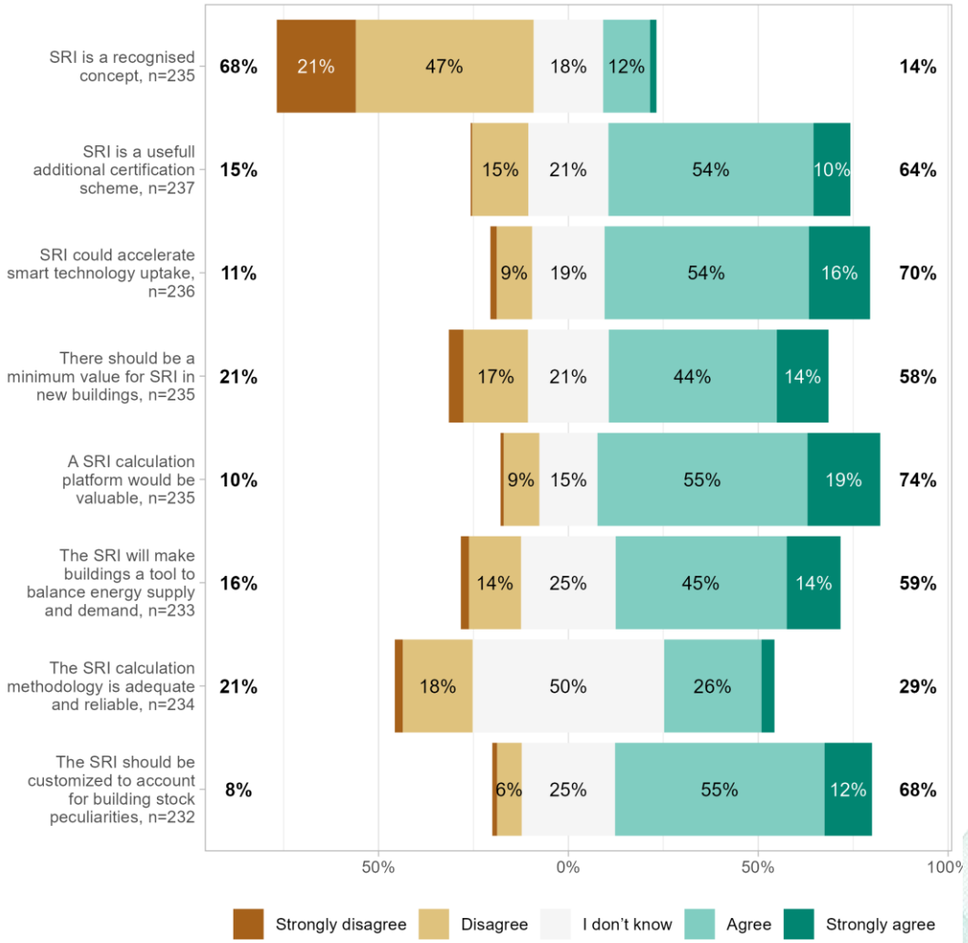

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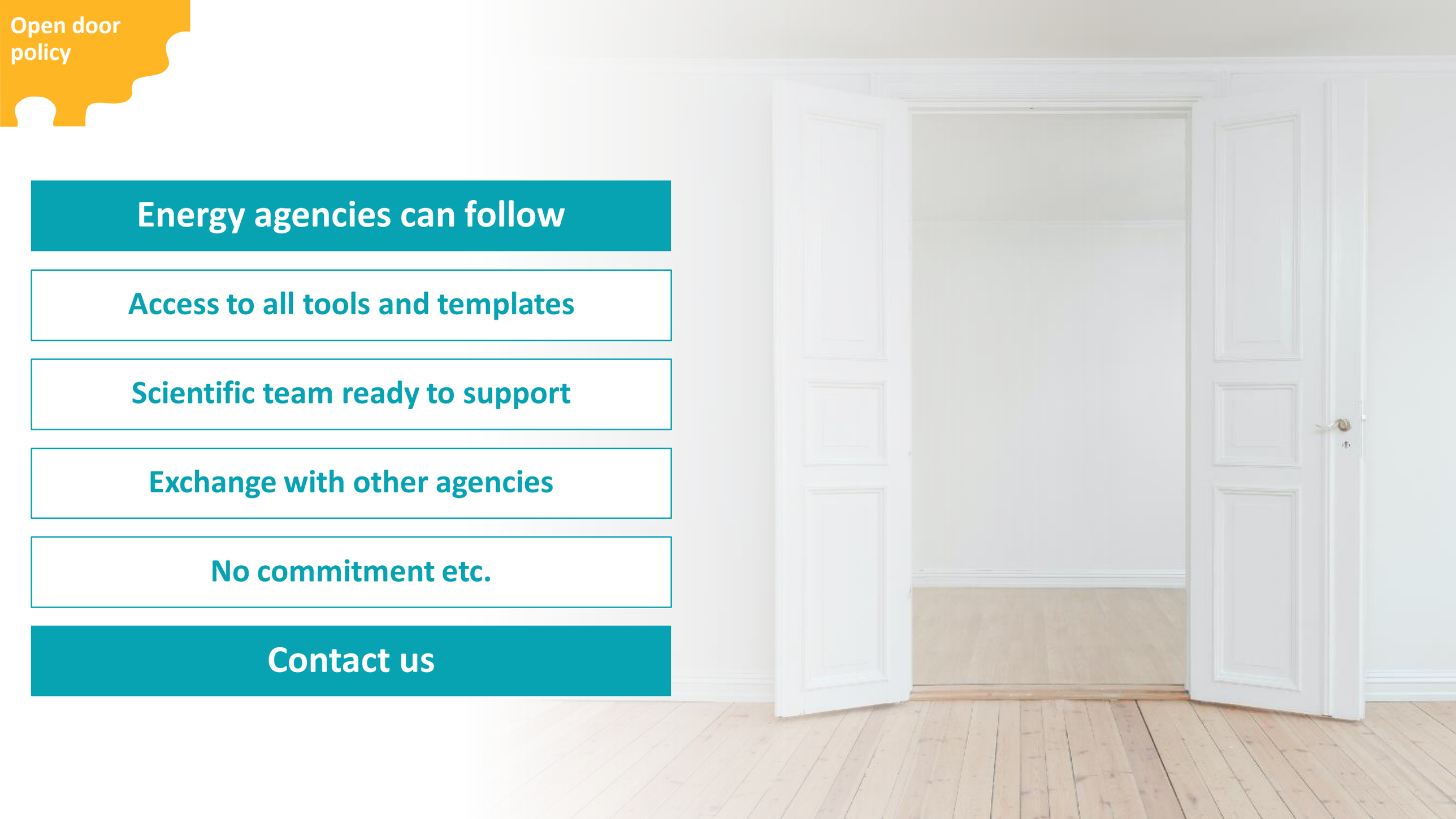

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CENER | NATIONAL RENEWABLE ENERGY CENTRE

SRI2MARKET

Tool Suite & link to iEPB project

María Fernández Boneta
Research Project Manager & Senior Engineer
CENER – National Renewable Energy Centre

SP2024, 24th September 2024, Luxembourg

SUSTAINABLE PLACES 2024

Co-funded by the European Union under Grant Agreement no. 101077280. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

Why SRI2MARKET?

- Support the targeted countries on introducing the SRI into their national regulation
- Provide training to EPC assessors on the SRI and the methodology of its calculation
- Propose public funding schemes to finance SRI upgrades in buildings
- Set up SRI pilots at national level so as to identify best practices for SRI assessments
- Develop tools to guide SRI assessors and streamline building assessments
- Provide recommendations to building owners and facility managers on cost-effective SRI upgrades

Where?

Austria
AEE INTEC
BOKU

Croatia
EIHP

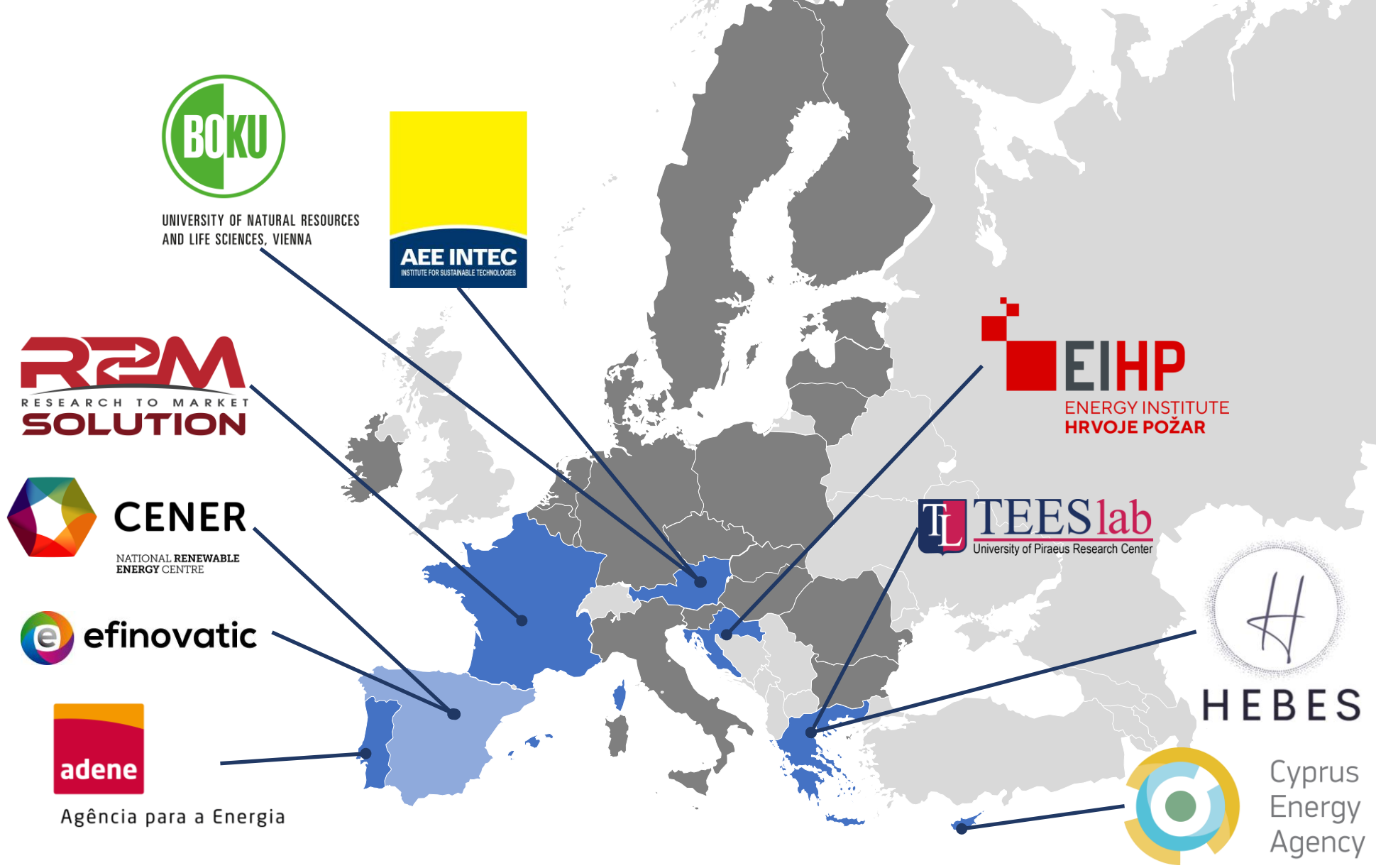
Cyprus
CEA

France
R2M

Greece
UPRC
HEBES

Portugal
ADENE

Spain
CENER
EFINOVATIC



SRI2MARKET

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SUSTAINABLE PLACES 2024

SRI2MARKET Tool suite

E-learning platform

E-learning lessons on the SRI and its assessment methodology. The course is structured in chapters and rely on training materials such as videos and documents in every partner's national language.

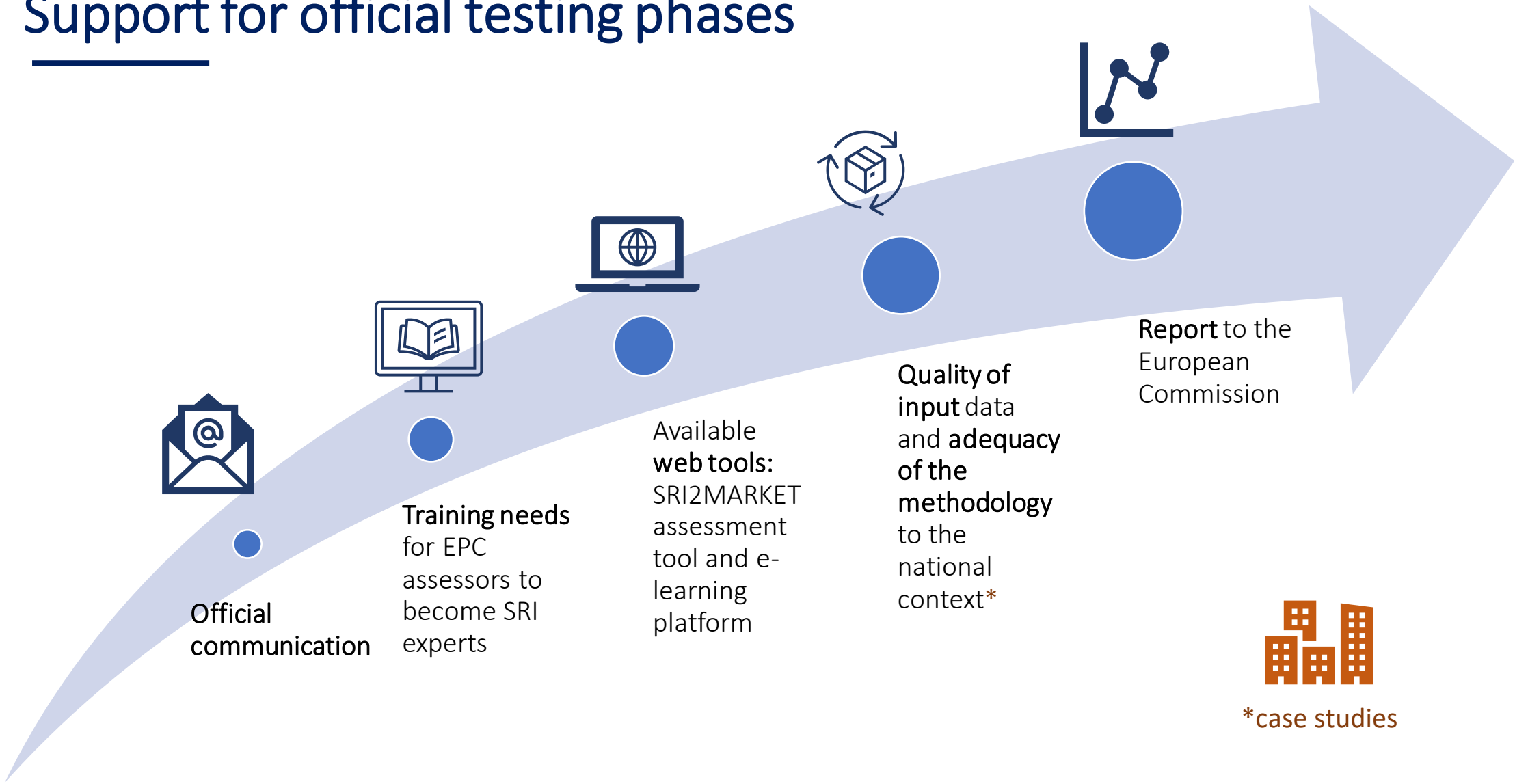
The program is mainly practical and based on examples / case studies. Participants take several tests at the end and receive up to three level of badges according to each step.

SRI assessment tool

The tool provide a user-friendly interface for users to save their SRI assessments. The underlying calculation engine is flexible and easily customizable according to national specificities and priorities.

The tool also create dynamic scorecards according to pre-defined filters, and automatically compare SRI assessments of buildings situated in different countries.

Support for official testing phases



Official communication

Training needs for EPC assessors to become SRI experts

Available **web tools:** SRI2MARKET assessment tool and e-learning platform

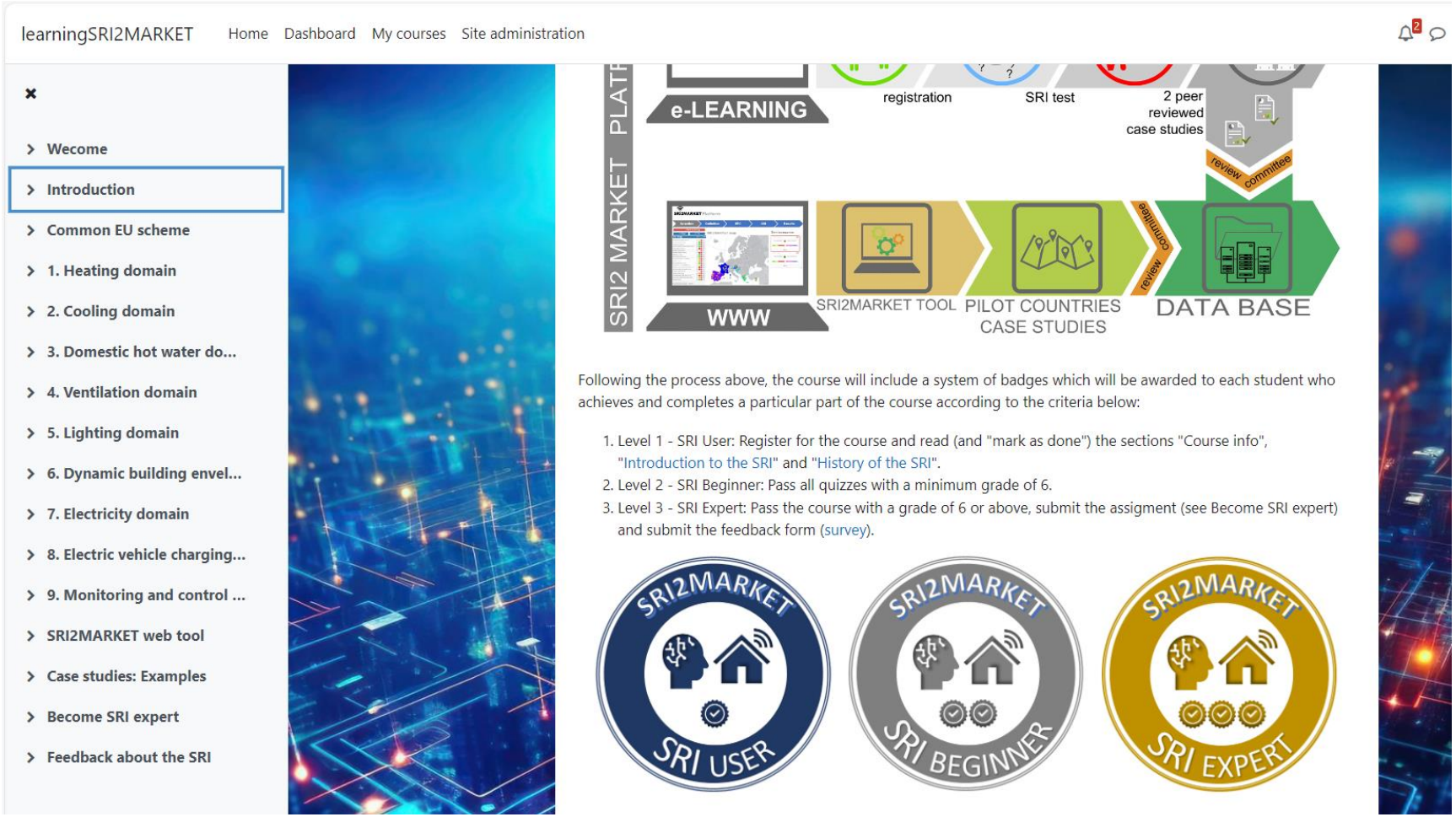
Quality of input data and **adequacy of the methodology** to the national context*

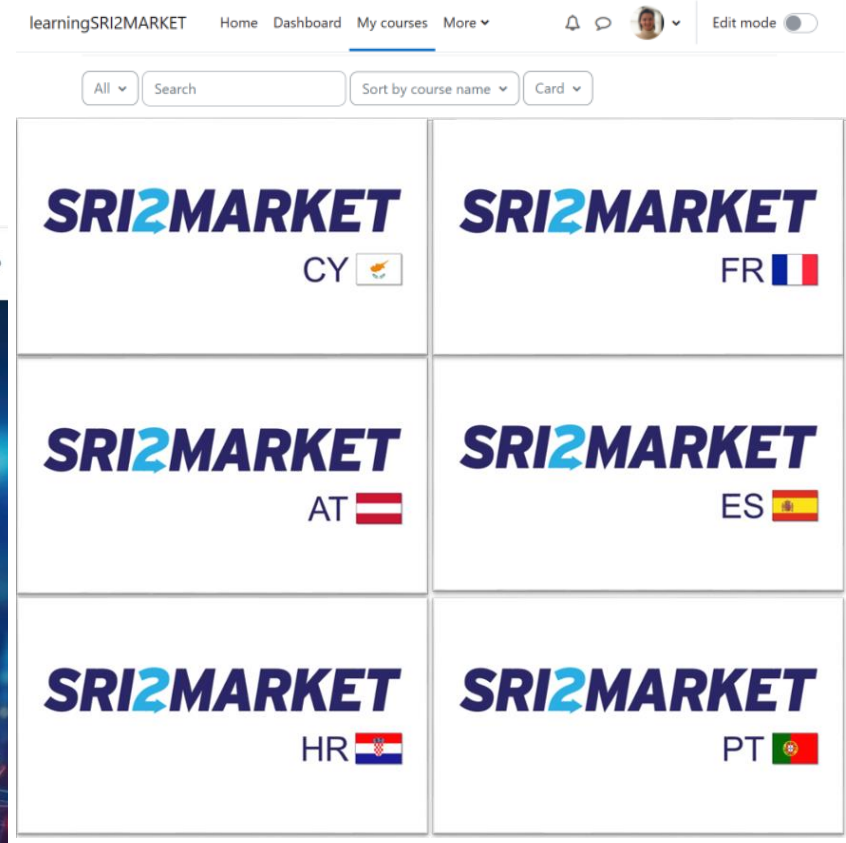
Report to the European Commission

*case studies

SRI2MARKET e-learning platform

https://learning.sri2market.eu/





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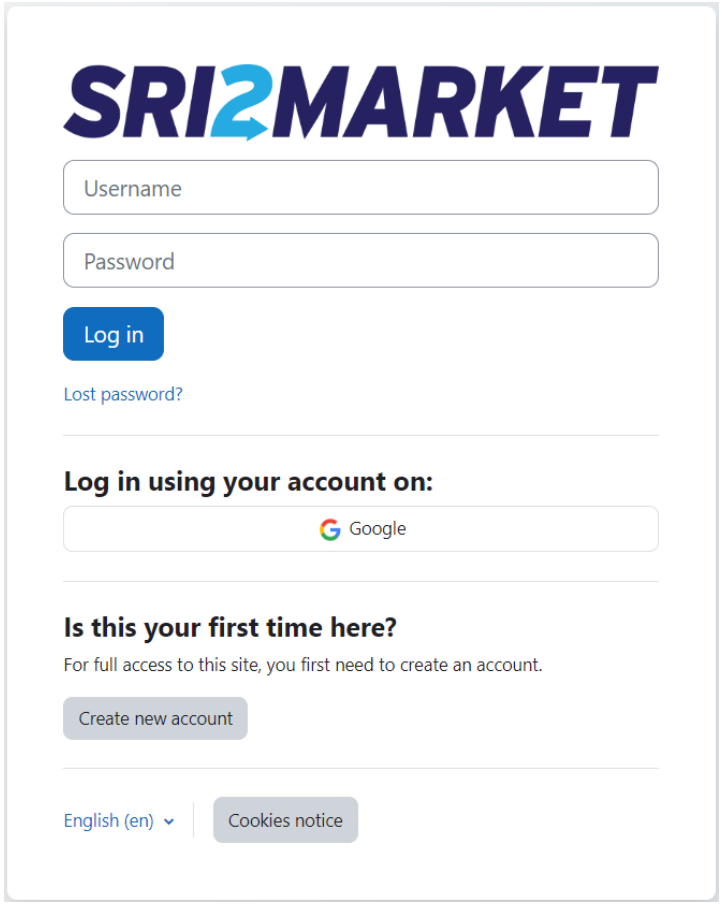
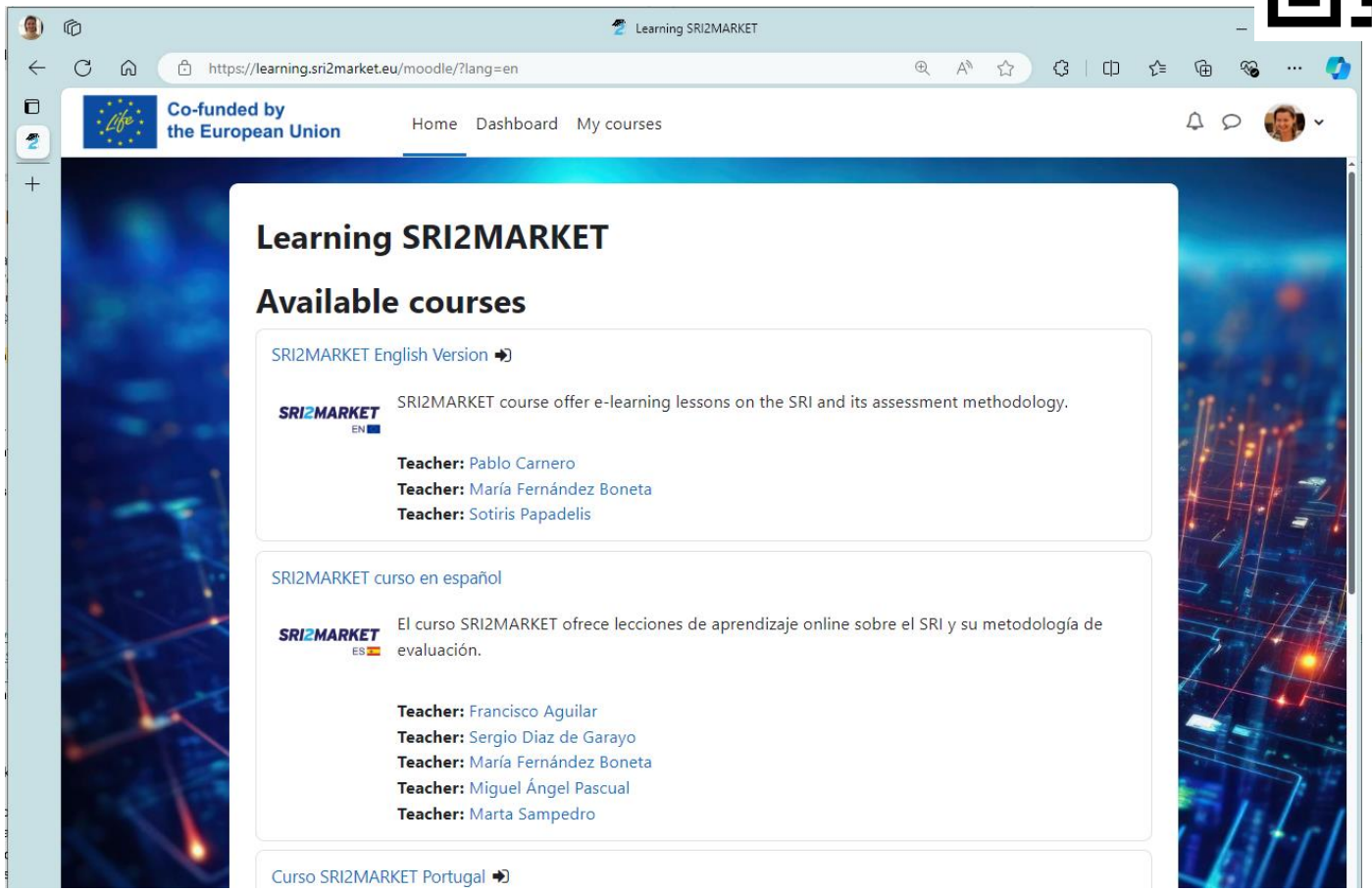
Registration

https://learning.sri2market.eu/





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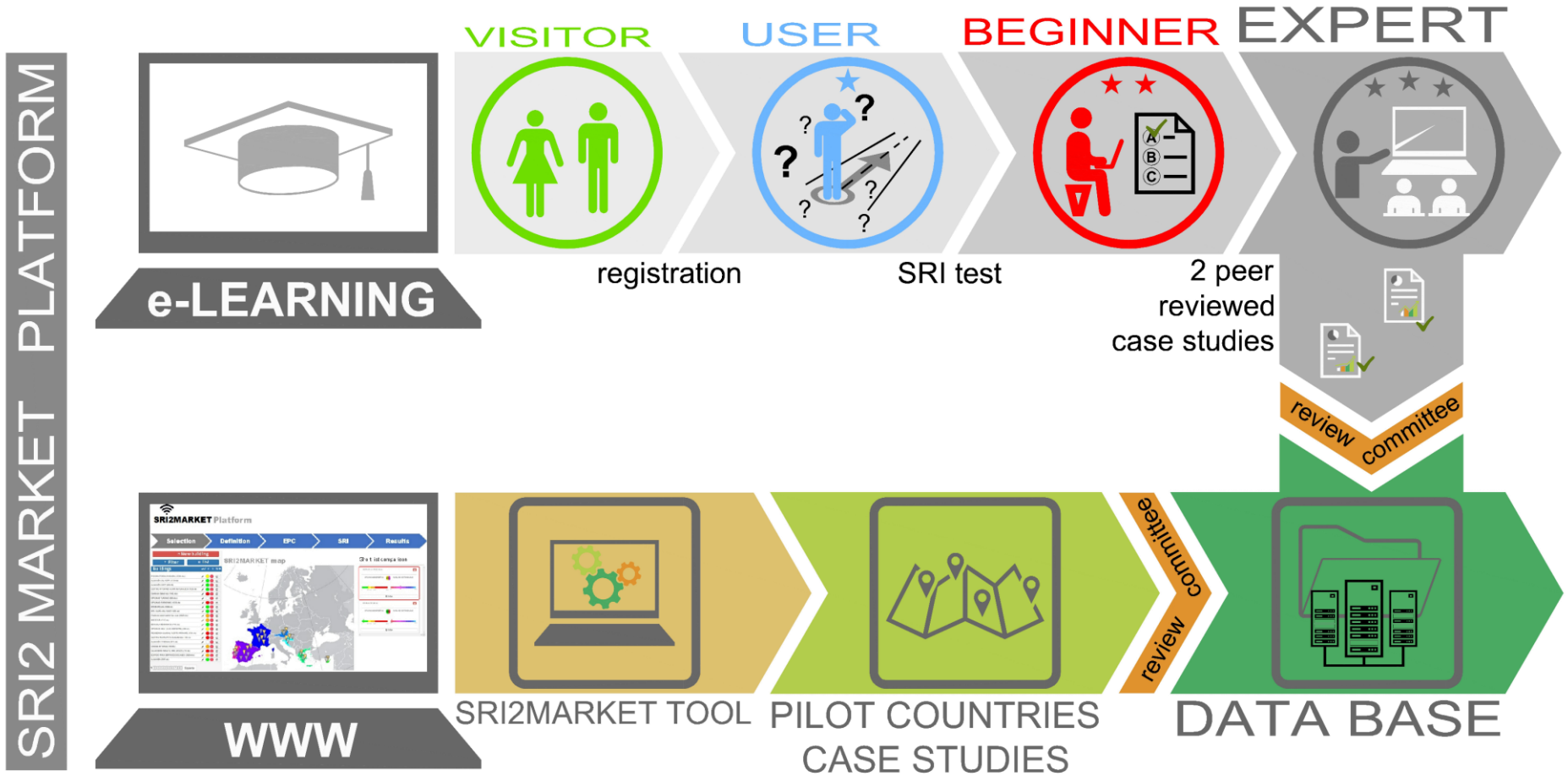
E-learning programme and three levels of expertise



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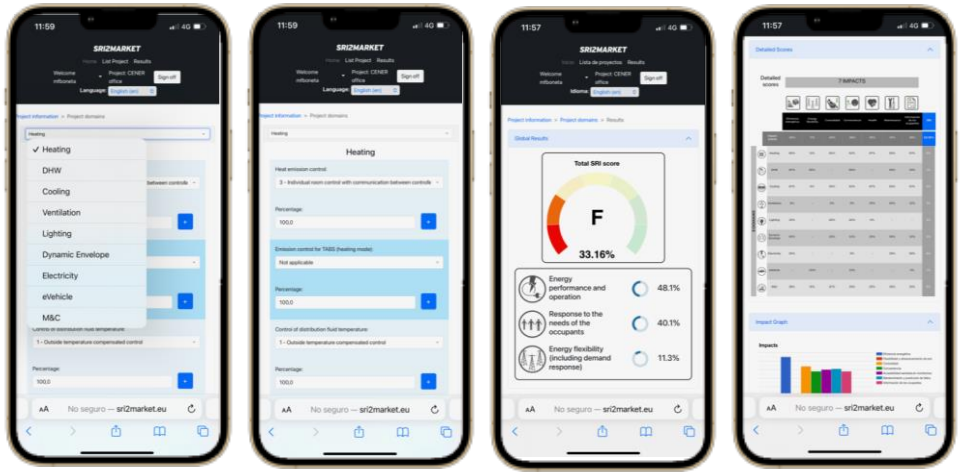
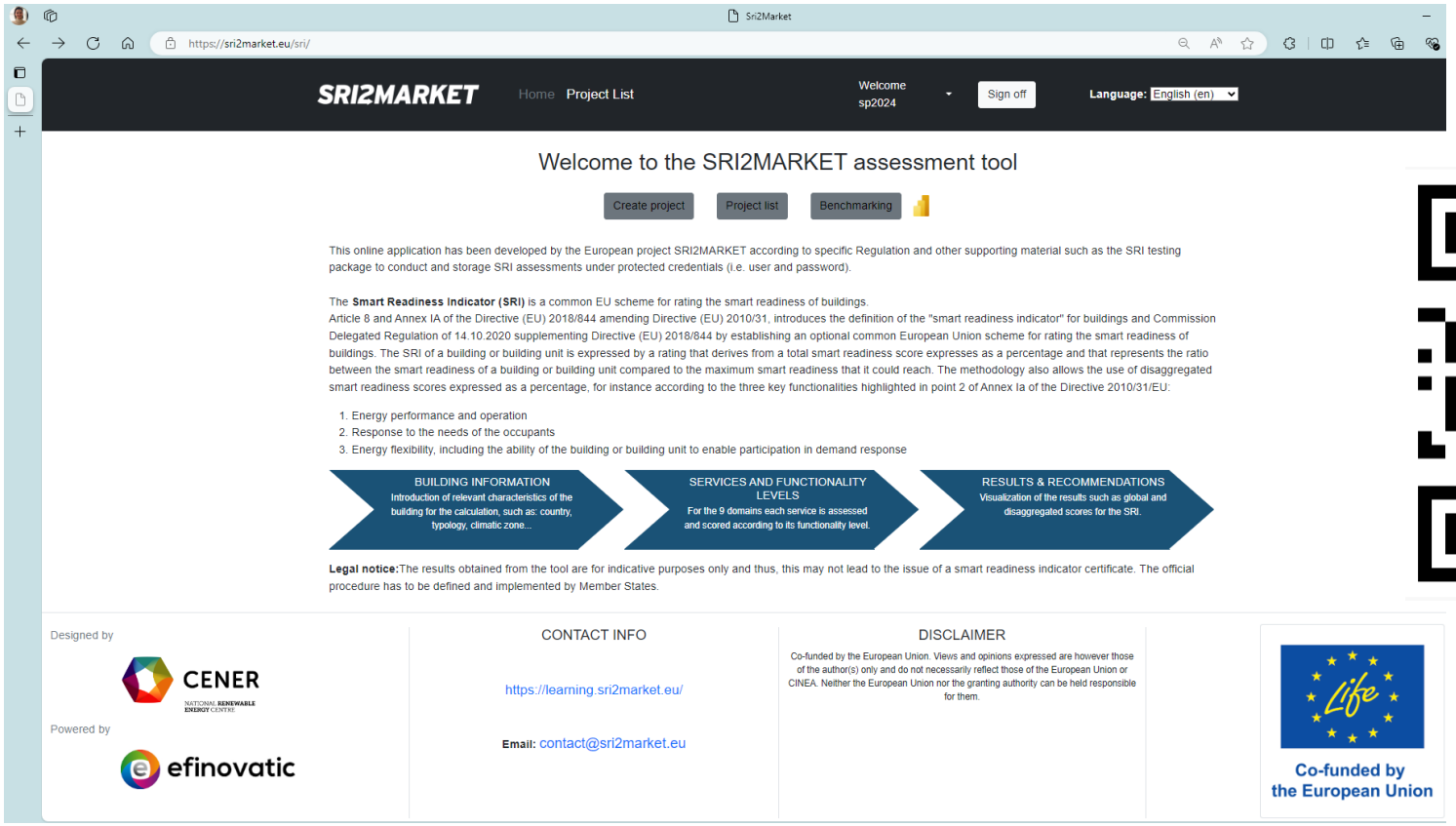
SRI2MARKET assessment tool

https://sri2market.eu

User: sp2024
Password: sri2market123





Aggregated results (statistical results filter by):

- Country
- Building type
- Building usage
- Building state
- Effective rated output for HVAC
- Energy class
- Climate
- Catalogue/default method
- Assessment purpose
- Official test phase
- …

SRI2MARKET CENER NATIONAL RENEWABLE ENERGY CENTRE SUSTAINABLE PLACES 2024

Input forms

SRI2MARKET Home Project List Results Welcome sp2024 Project: Example-Off... Sign off Language: English (en)

Project information > Project domains

Heating | DHW | Cooling | Ventilation | Lighting | Dynamic Envelope | Electricity | eVehicle | M&C

Heating

Heat emission control:

3 - Individual room control with communication between controllers and to BACS

- 0 - No automatic control
- 1 - Central automatic control (e.g. central thermostat)
- 2 - Individual room control (e.g. thermostatic valves, or electronic controller)
- 3 - Individual room control with communication between controllers and to BACS
- 4 - Individual room control with communication and occupancy detection
- Not applicable

Percentage: 100,0 + ?

Control of distribution fluid temperature:

2 - Demand based control

Percentage: 100,0 + ?

Control of distribution pumps in networks:

3 - Variable speed pump control (pump unit (internal) estimations)

Percentage: 100,0 + ?

Thermal Energy Storage (TES) for building heating (excluding TABS):

Not applicable

Percentage: 100,0 + ?

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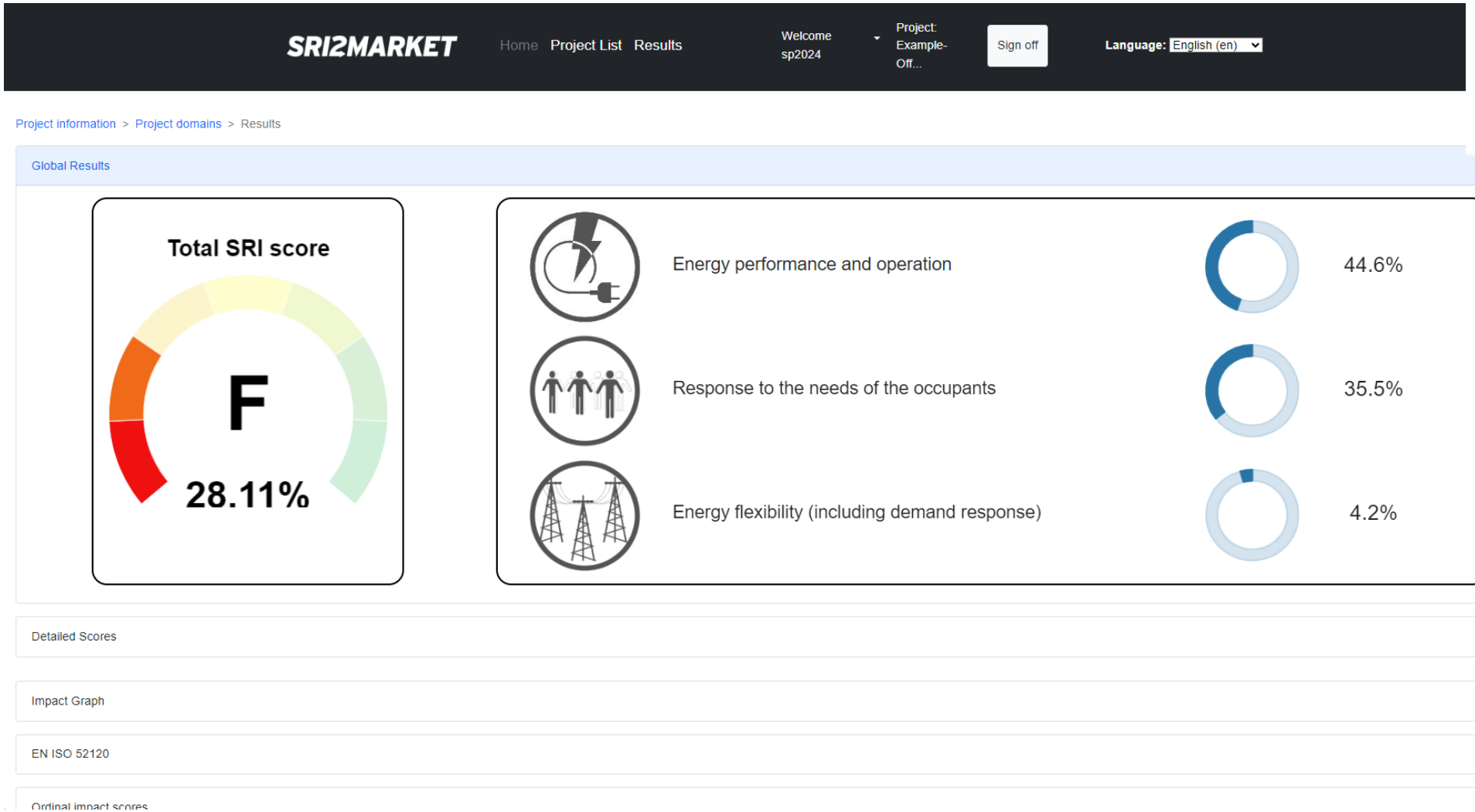
Results



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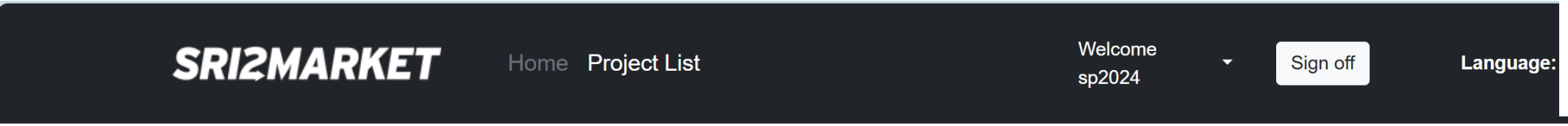
Improvement packages



Project List

Name	Catalogue	Country	Modify	Delete	Duplicate	ISO52120	ISO52120	Download
Example- Office building	Default Method B	Spain	Modify	Delete	Duplicate	↑A	↑B	Download

1 / 1

Designed by

CENER
NATIONAL RENEWABLE ENERGY CENTRE

Powered by

efinovatic

CONTACT INFO

https://learning.sri2market.eu/

Email: contact@sri2market.eu

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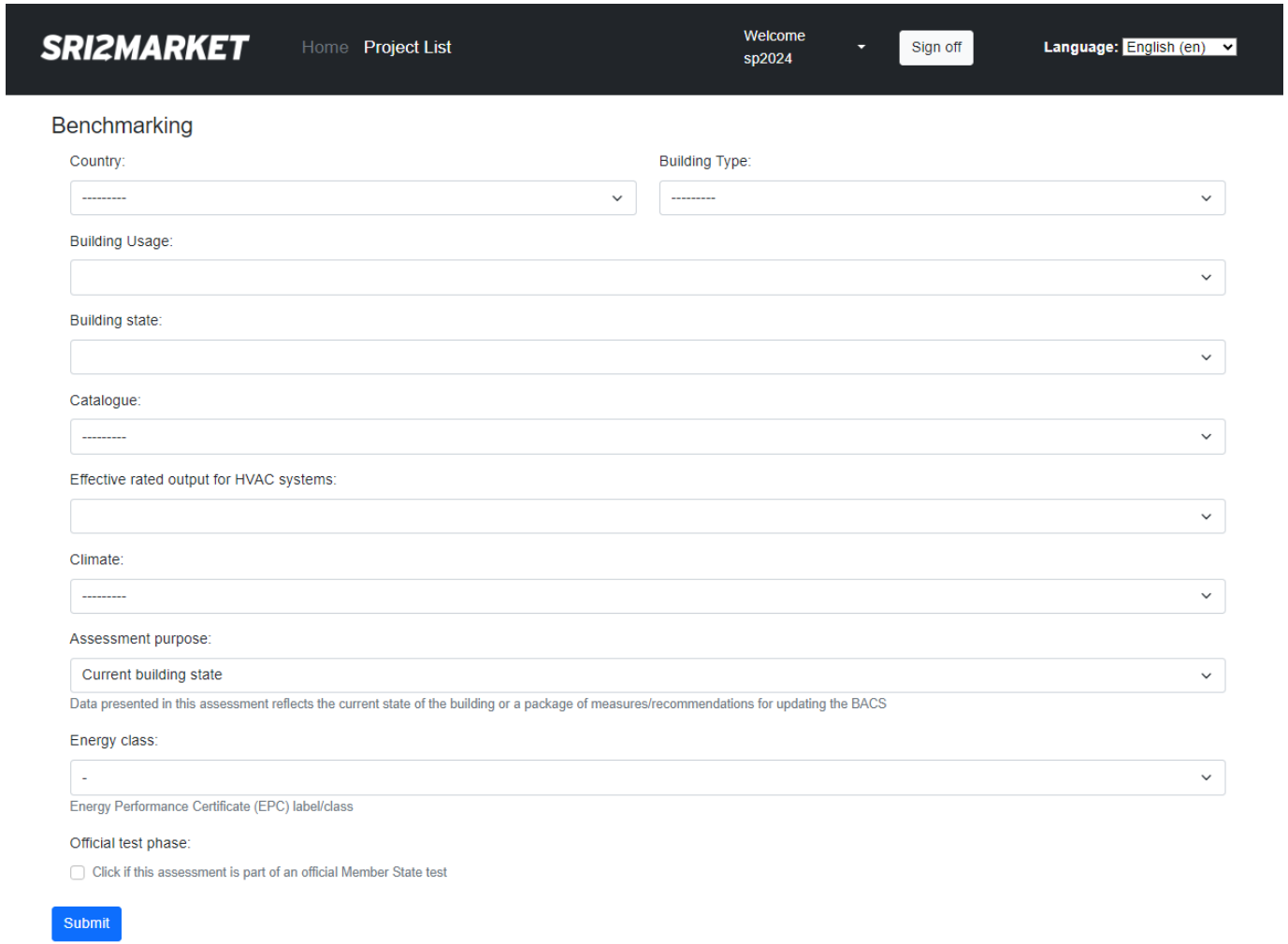
Basic benchmarking



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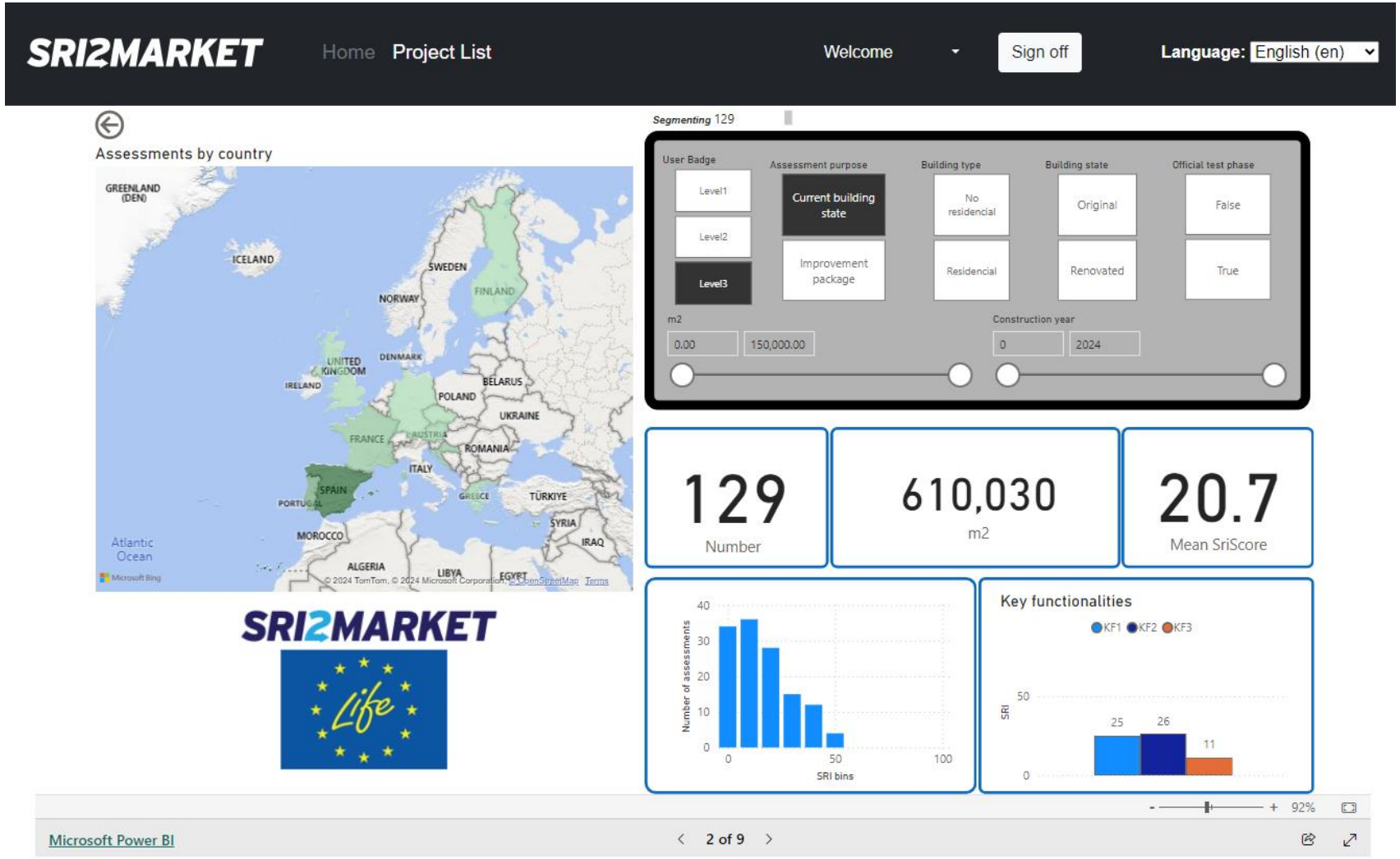
Advanced benchmarking



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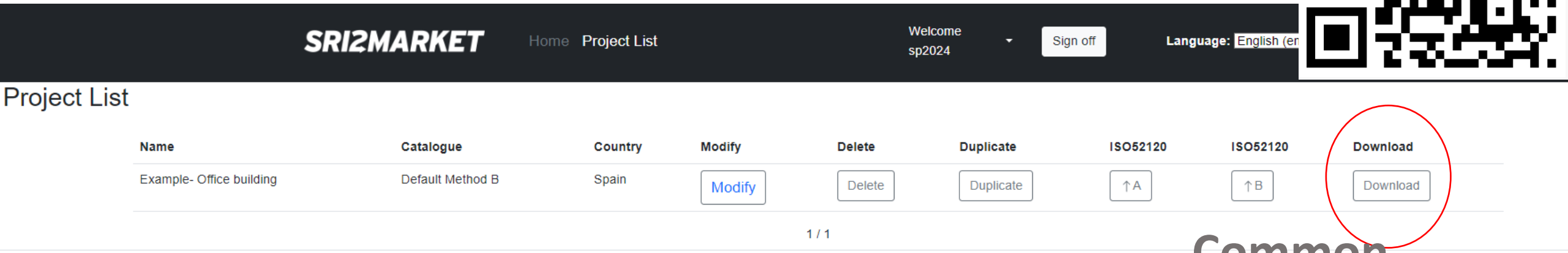
SUSTAINABLE PLACES 2024

Link to the iEPB project

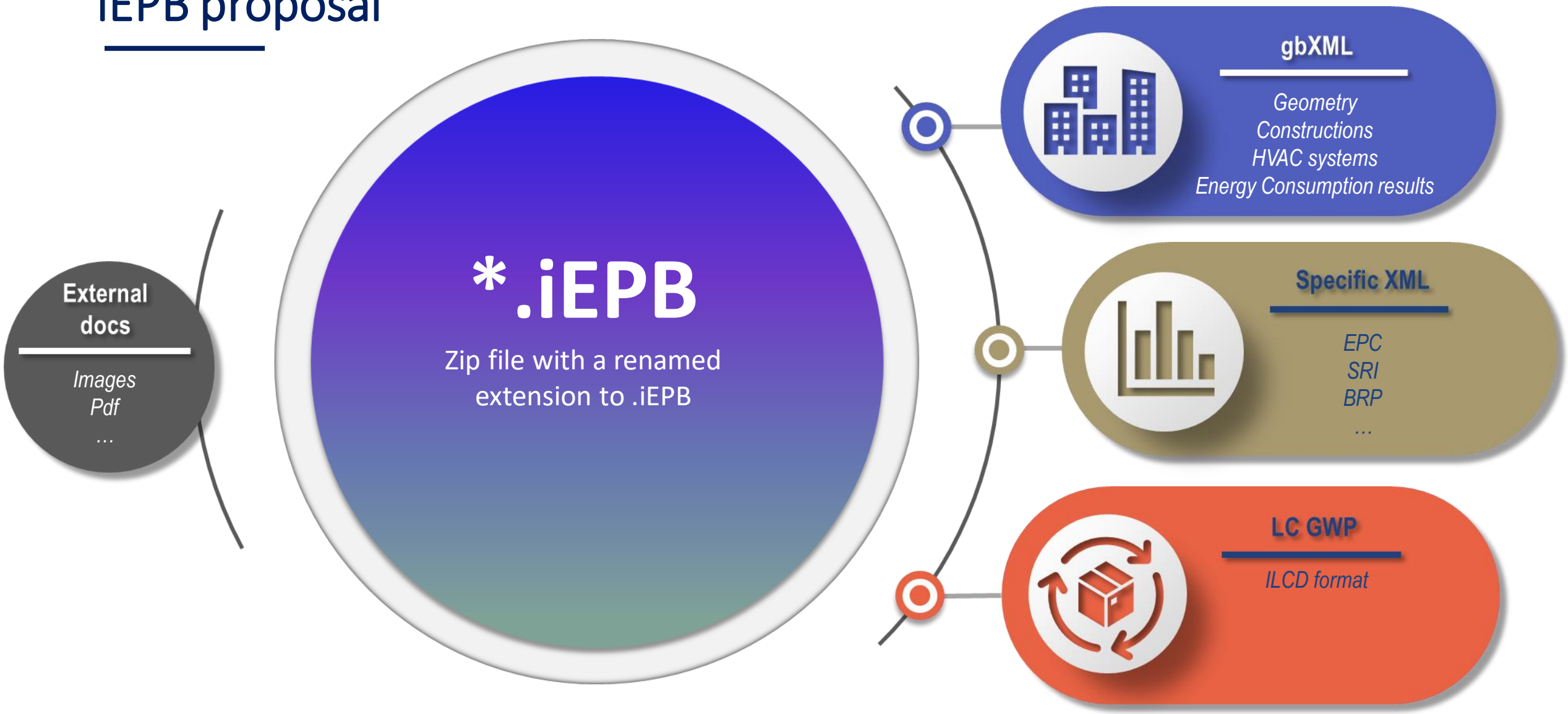


Common data model

iEPB schema

SRI2MARKET CENER NATIONAL RENEWABLE ENERGY CENTRE SUSTAINABLE PLACES 2024

iEPB proposal



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Existing formats

Green Building XML Schema

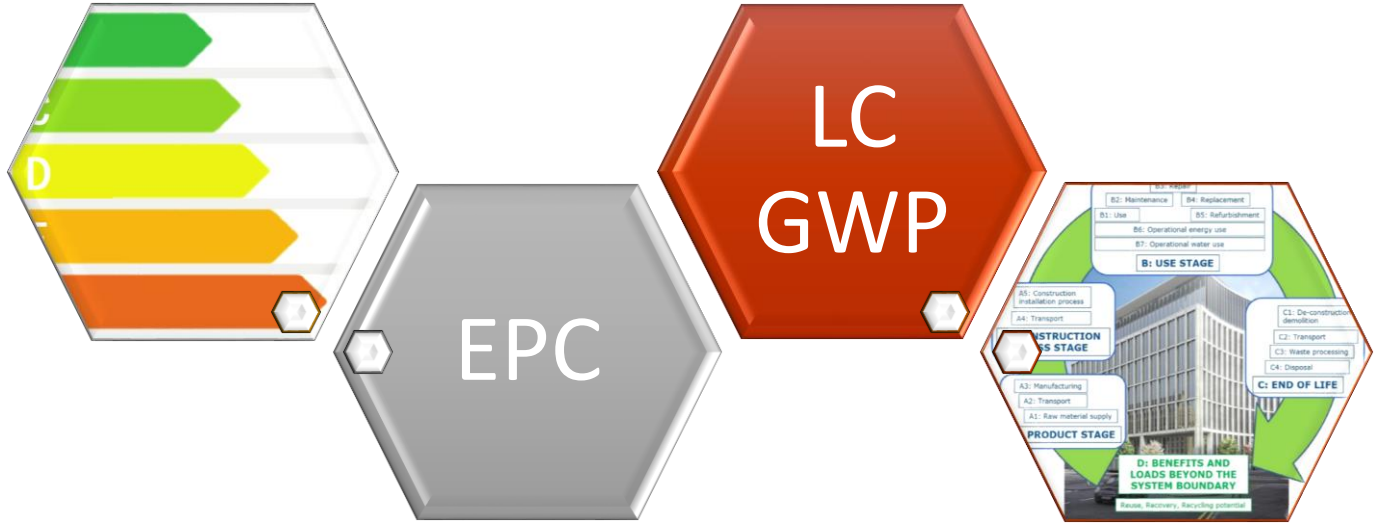
gbXML

- Purpose exchange information in BEM models

gbXML is funded by organizations such as the U.S. Department of Energy, the National Renewable Energy Lab (NREL), Autodesk, ASHRAE, Bentley Systems

International Reference Life Cycle Data System
ILCD
XML
provide guidance and standards for greater consistency and quality assurance in applying LCA

European Commision (JRC)



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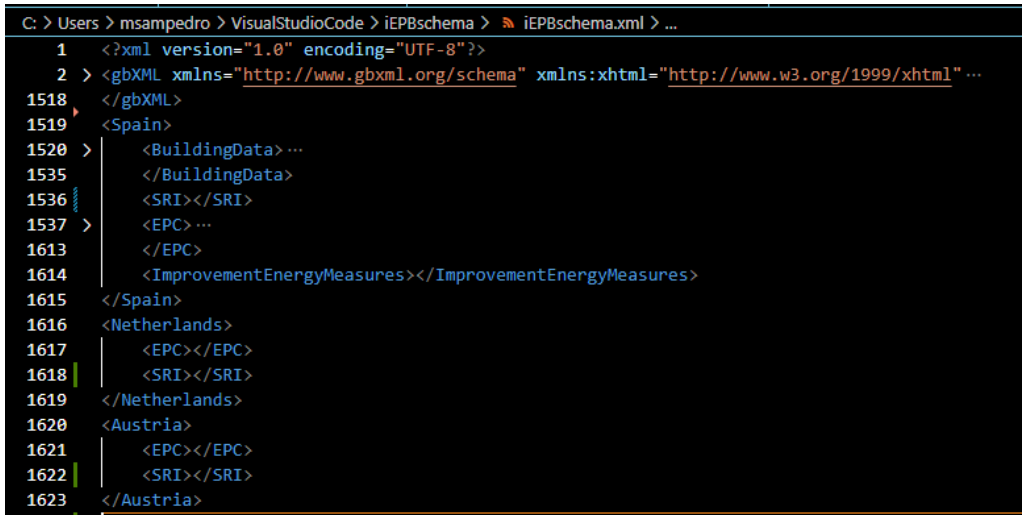
iEPB schema>Format design

- Use of the original gbXML elements:
  - Location
  - Envelop geometry
  - Constructions, layers, materials
  - Spaces/Thermal Zones/Building Stories
  - Internal heat gains: people, lighting, equipment, infiltration, schedules
  - HVAC equipment, Air Loops, Hydronic Loops



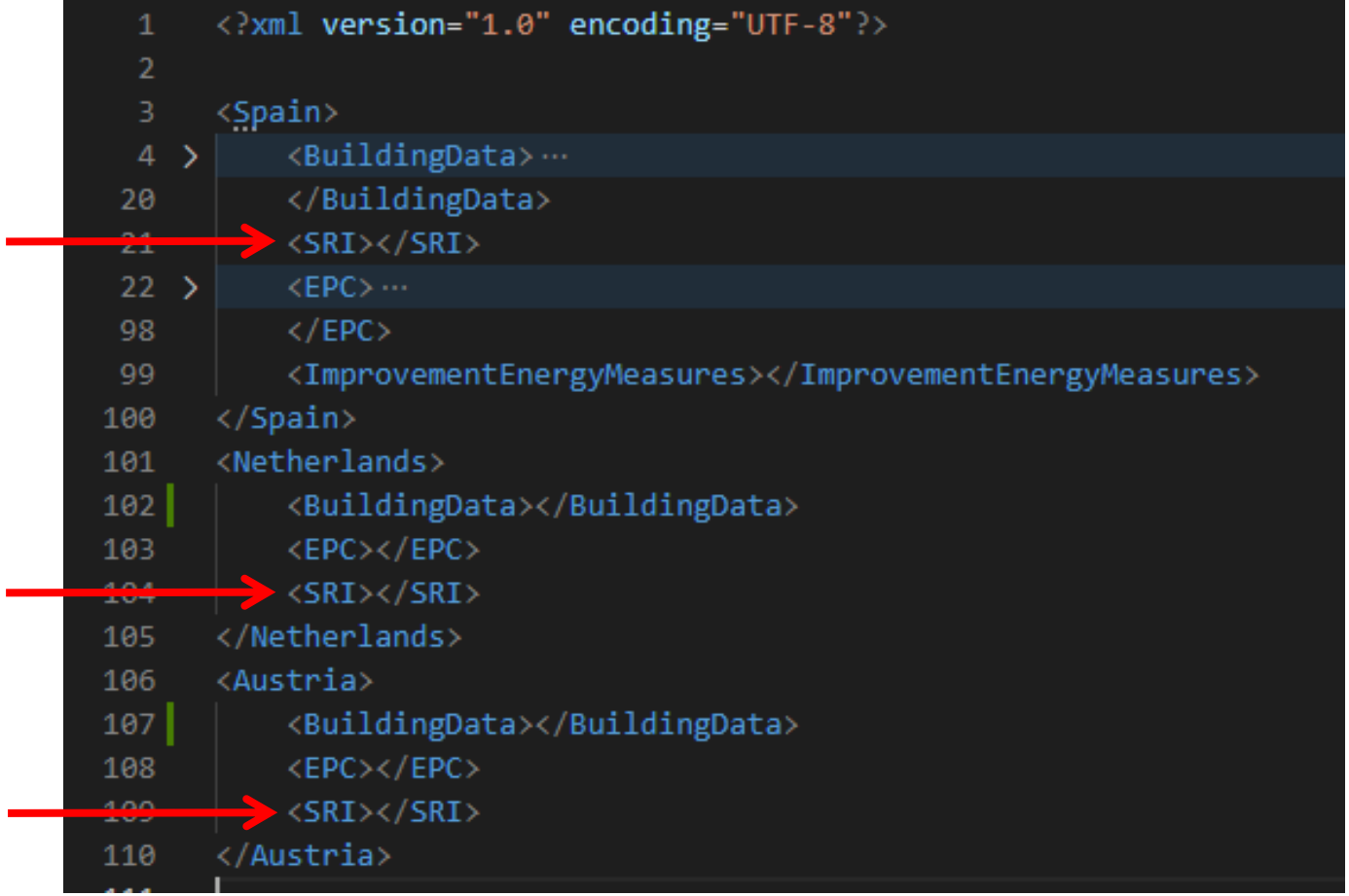
The purpose of **using the gbXML format as the basis for the iEPB common data format** is to reuse an already standardised format to exchange data, NOT between different countries, but between different types of building assessment at a European or even global level.

iEPB schema

Each country block will have (at least):

- A **common section** for all building data not included in the **gbXML** and shared by all national assessments.
- An EPC block containing data relevant only to the requirements of EPC assessment of buildings in the specific country.
    - A block for each certification tool with specific data

- **An SRI block** (including inputs and outputs of the methodology)



https://www.linkedin.com/in/mariafernandezboneta/

María Fernández Boneta

mfboneta@cener.com

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