



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

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D2.2 – SRI ENACT METHODOLOGY WITH NATIONAL ADAPTATIONS (1ST RELEASE)



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D2.2 – SRI ENACT METHODOLOGY WITH NATIONAL ADAPTATIONS_1ST RELEASE

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List of acronyms

EU	European Union
EC	European Commission
ICT	Information and Communication Technologies
SRT	Smart-Ready Technologies
SRI	Smart Readiness Indicator
EPBD	Energy Performance of Buildings Directive
NZEB	Nearly Zero Energy Buildings
PEB	Positive Energy Buildings
BACS	Building Automation and Control System
TBS	Technical Building System
EMA	Energy and Managing Authorities
SME	Small-Medium sized Enterprise
EPC	Energy Performance Certificate
BIM	Building Information Modelling
SEDA	Sustainable Energy Development Agency
MRDPW	Ministry of Regional Development and Public Works
EERSF	Energy Efficiency and Renewable Sources Fund
EP	Energy Performance
NOP	National Operational Programmes
MDLPA	Ministry of Development, Public Works and Administrations
EBRD	European Bank for Reconstruction and Development
CRES	Centre for Renewable Energy Sources
BA	Building Act
EEA	Energy Efficiency Act
MPGI	Ministry of Physical Planning Construction and State Assets
EIHP	Energy Institute Hrvoje Pozar
BRP	Building Renovation Passport
EPEEF	Environmental Protection and Energy Efficiency Fund
CroBC	Croatian Green Building Council
UTCB	Bucharest Technical University of Construction
CRS	Current Report Standard
MITECO	Ministry for the Ecological Transition and the Demographic Challenge (Spain)
PE	Polyethylene

Executive summary

This deliverable D2.2 SRI-ENACT Methodology with national adaptations (1st Release) constitutes the first comprehensive overview of the SRI national tailoring adaptations. This version is based mainly on national co-creation workshops and the first Stakeholder Liaison Group meetings. As the co-creation workshops in pilot partners' countries had sufficient participation representing key national stakeholders, the presented deliverable captures a quite accurate view of the national SRI tailoring needs and opportunities. The workshops were held in eight countries and a structured set of topics was prepared in advance, covering specific SRI national tailoring and implementation areas.

Most of the national co-creation workshops converged to the linkage of the SRI to EPC (except Czech Republic, which sees SRI as a market-based tool and Spain with no result yet). All countries agree on using Method B as the primary SRI framework for assessing buildings (except Austria who runs its own SRI methodology and Bulgaria with no result yet). Finally, all pilot countries appeared to have reached a consensus on some kind of registered energy experts to be further trained to support the SRI implementation. Other areas had much less uniformity among countries and pilot partners had various visions. Although a couple of partners would lay emphasis on assessing non-residential buildings, the majority of them would like to proceed with diving into a mix of building types, sufficient number of buildings and mainly new and renovated buildings for pilot SRI assessing.

The co-creation workshops gave the opportunity to the Stakeholder Liaison Groups to hold their initial meeting and establish their presence in each pilot partner's country, serving as an important national SRI platform from now on.

The outcome of these workshops surfaced the key stakeholders' know-how and opinions on the national SRI implementation, adding as well significant information in the current theory on SRI national landscape.

1. Introduction

The presented deliverable D2.2 SRI-ENACT Methodology with national adaptations (1st Release), consists mainly of stakeholders' input on SRI national tailoring as well as other important feedback that will be added upon the current SRI theory.

Deliverable D2.2 is structured as follows: Chapter 2 presents the national stakeholder engagement process that was followed by all pilot partners in order to bring on board all national key stakeholders. It analyses the engagement steps taken by each partner and the level of the Stakeholder engagement plan application. Chapter 3 describes the co-creation workshops' methodology. In specific, it presents the common approach that all pilot partners followed in order to implement their co-creation workshops, as well as the methodology applied to Stakeholder Liaison Group sessions (focus group format). Chapter 4 contains an in-depth presentation of the countries' current state on SRI and the key stakeholders' opinions on how it should be implemented nationally. Every pilot followed the aforementioned methodology and common approach for the workshops, yet, due to the different national specifications and/or the progress on SRI implementation, it is clear that many aspects were approached differently. Therefore, this report features a certain level of consistency across most of its main body, as a result of the diverse SRI levels of implementation and national contexts. Finally, a first effort to present the common national SRI tailoring outputs and preliminary results is carried out in Chapter 0 (Conclusions).

As a side note, it should be mentioned that a cross-country comparative table between the results of the different co-creation workshops is included in Annex 1, as well as the Stakeholders' Focus Group indicative structure (Annex 2).

2. National Stakeholder Engagement Process

National Stakeholder Engagement Process describes the specific stakeholder engagement process that was followed by each pilot partner. This process examines the level of application of the engagement plan (detailed description presented in deliverable D2.1), and the level of success on inviting and engaging key stakeholders to the co-creation workshops and establishing the national Stakeholder Liaison Groups.

2.1. Bulgaria

The engagement process so far was in line with the Stakeholder Engagement Plan.

The key stakeholders, whose participation in the Liaison Group (LG) was crucial, were initially approached by bilateral meetings:

1. Ministry of Regional Development and Public Works
2. Sustainable Energy Development Agency, and
3. Energy Efficiency and Renewable Energy Fund

This approach was chosen in order to: (a) increase the chance for joining the LG; (b) increase their commitment to the work by involving in the bilateral meetings not only the experts, but also the top management members of the organisations; and (c) better prepare for the co-creation workshop, e.g., by aligning the workshop with the needs of these stakeholders. Next, official invitations to join the LG were sent to these 3 institutions. Through official letters, each of these organisations, nominated LG representatives.

The initial contact with all other stakeholders was less formal, either by short personal meetings or by phone, in line with the established good business relations. They were not asked to sign formal commitment letters. All stakeholders were invited to the co-creation workshop and the meeting materials were sent to them by e-mail.

During both the initial contacts and the co-creation workshop, all engaged representatives demonstrated a high level of interest and willingness to collaborate towards SRI implementation. The Bulgarian SRI-ENACT team successfully addressed the potential challenges identified in the Stakeholder Engagement plan, by applying the following measures:

- Highlighting the benefits for each stakeholder and the wider society.
- Ensuring credibility, relevance and legitimacy of the stakeholder engagement process, by setting clear objectives, selecting the appropriate people and tools, transparency, listening to and addressing stakeholders' interests, and unbiased workshop facilitation.
- Involving all stakeholders at an early stage, regularly communicating with them, and providing clear and sufficient information.

2.2. Latvia

The selection process and the steps for engaging the national stakeholders in this first co-creation workshop were in line with the original stakeholder engagement plan (Task 2.2, sub-tasks 2.2.1 and 2.2.2).

SRI-ENACT partner Riga Planning Region reached out to all identified key stakeholders and successfully involved them in the co-creation process and in the Liaison group.

Participants represented all major stakeholder groups, such as: 1) ministries and agencies in charge of energy efficiency, environment, and buildings; 2) local and regional public authorities; 3) national finance institutions; 4) energy consultants and private developers; 5) property owners and facility managers; 6) professional associations; 7) research institutions; and 8) ESCOs.

There were formal and informal communication channels that were established to engage the most important stakeholders. Although all major stakeholders were sent a formal invitation to attend the first joint co-creation and the Liaison Group member meeting, they were also approached using less formal means, such as phone calls, e-mails, or messengers. The formal invitation letter included a short description of the SRI-ENACT project and its activities in Latvia, a link to the project website, and an agenda for the meeting. All details regarding the joint co-creation meeting were communicated to all recipients of the formal invitation afterwards.

At the meeting, all participants signed the participant list, providing their contact information to be used during the implementation of the SRI-ENACT activities, and as part of the wider SRI ecosystem. To capitalise on the initial success, the SRI-ENACT Riga team members agreed on a series of bilateral meetings with the involved parties to better understand their position in implementing the smart readiness approach.

There was a high degree of willingness among the Liaison Group members to continue cooperation with the SRI-ENACT Riga team, share knowledge, and engage in practical project activities. This positive attitude contributed to laying the groundwork for fruitful cooperation among all involved stakeholders.

The co-creation workshop and the Liaison Group meeting were organised in a way that there was enough time for informal communication during the coffee break. All these factors combined, allowed for a friendly, creative, and enthusiastic atmosphere that was maintained throughout the duration of the event.

2.3. Czech Republic

The Czech co-creation process started during the preview of Czech SRI landscape. It consisted of:

- stakeholder identification
- stakeholder addressing
- liaison group event

- co-creation workshop
- interviewing important stakeholder

The stakeholder engagement process was closely consulted with Ministry of Industry and Trade and prof. Karel Kabele who is the leader of the Czech SRI pilot.

All key stakeholders were contacted by e-mail. Some stakeholders were contacted by phone several times. The co-creation workshop was promoted to the biggest website and platform dedicated to technical building systems in Czech Republic (tzb-info.cz).

The stakeholder engagement process results proved that there are still some fundamental challenges to be addressed regarding the SRI implementation in the Czech Republic. Therefore, the Czech SRI-ENACT team is going to gather more feedback from other stakeholders as well, especially from those who were not able to join the co-creation workshop. The process of interviewing key stakeholders was initiated just after the co-creation workshop.

2.4. Romania

The process of selecting and involving national stakeholders in the first Romanian Liaison Group (RO-LG) and co-creation workshop, followed the initial stakeholder engagement plan described in D2.1.

Initially, the communication process involved an invitation sent by e-mail and containing details about the project (including the SRI-ENACT website link), the objectives of the Liaison Group and potential benefits for the future members, followed by the request to nominate 1-2 experts (in case no former business connections existed). Subsequently, a follow-up e-mail was sent as a reminder, seeking confirmation of attendance for the workshop.

For those who expressed interest to become members of the Liaison Group and attend its first meeting, a Doodle poll was created to facilitate mutual agreement on the meeting's date. They were also sent a Google Form containing an inquiry regarding their "expertise/interest/contribution" through which, each confirmed member was invited to indicate their professional background/expertise, their motivation to engage, and potential contribution. This form was useful in evaluating how homogeneous this informal work structure is, how to appropriately combine their interests and skills so that the Liaison Group can reach its purpose and play an active role in achieving the objectives of SRI-ENACT. The results of this inquiry are presented below:

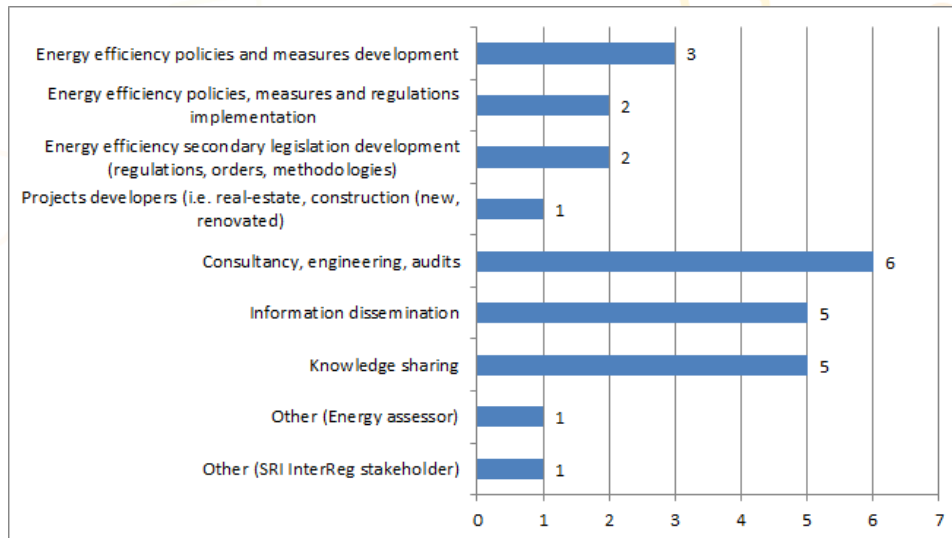


Figure 1 Romanian engagement process - What is your expertise?

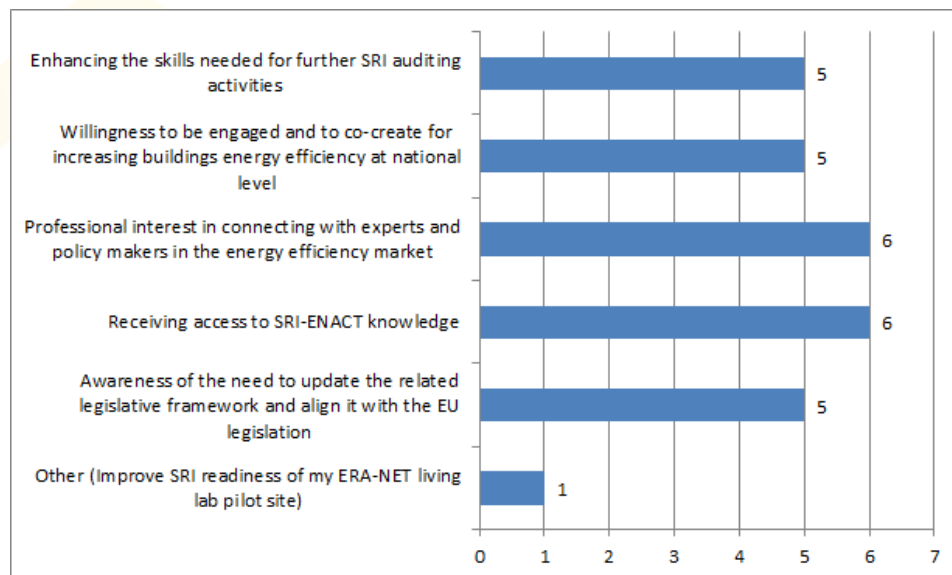


Figure 2 Romanian engagement process - What is your interest as RO-LG member?

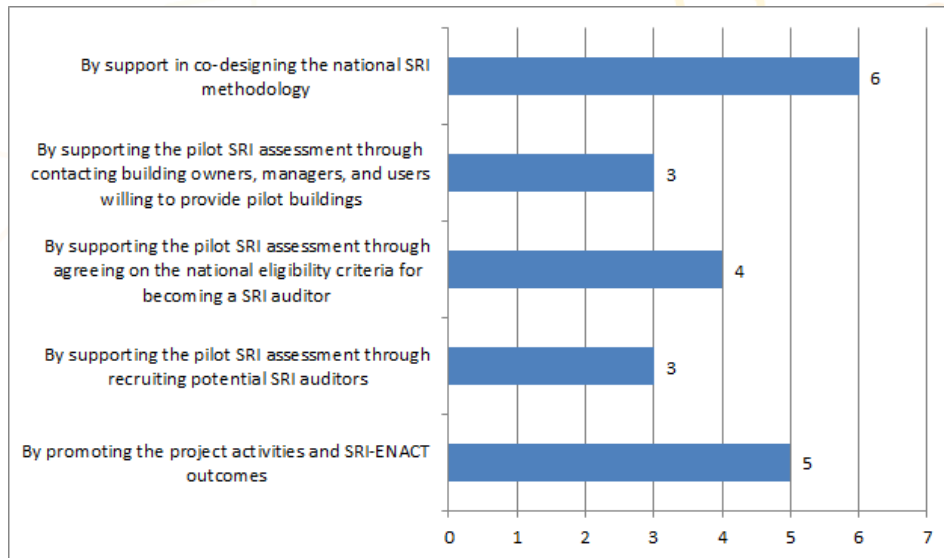


Figure 3 Romanian engagement process - How can you bring input as RO-LG member?

Despite the initial concern about ensuring the necessary competence of the Liaison Group, ISPE has succeeded to attract and engage in the co-creation process key stakeholders who are esteemed experts in their respective fields, including individuals who hold prominent positions at European level. Their expertise equips them with the necessary knowledge to tailor the SRI methodology to the national context in Romania, and to significantly impact the future implementation of SRI through their valuable input and decision-making. Stakeholders, such as representatives of the Ministry of Development, Public Works and Administration, associations, technical institutes and universities, and municipalities, attended the co-creation workshop. Unfortunately, no representatives from the sister project SMART² were present. Although initially they confirmed participation, in the end they could not attend due to other urgent matters that requested their presence.

During the workshop, the stakeholders showed that they are interested and motivated to further support the project and to continue to be involved in RO-LG. Therefore, it was decided that, requesting a signed letter of commitment is unnecessary as this could potentially discourage their ongoing participation in subsequent meetings and workshops.

A constant communication channel (e.g., email, virtual calls, co-creation workshops, knowledge sharing events etc.) will be kept open and interactive with all key players.

2.5. Greece

The selection process and the steps for engaging the national stakeholders in this first co-creation workshop, went according to the initial stakeholder engagement plan.

SingularLogic together with NTUA and the SRI Cluster's representation in Greece, joined forces and managed to bring on board all major stakeholders, that can influence with their input and decisions the future of the SRI in Greece. Stakeholders such as the Ministry of Energy and Environment, the Technical Chamber of Greece, Energy consultants and construction companies, utilities, a network of Municipalities, institutions, associations and the four sister-SRI projects from the SRI Cluster, were present to this co-creation workshop.

In other words, all stakeholder groups that were initially planned to be invited, received positively the call for co-creation and participated in the co-creation workshop.

In terms of communication, the approach had two levels. A formal one, that included an official invitation and registration process, and another one via phone calls due to existing professional relationship with some stakeholders. Specifically, at first, an invitation was sent via e-mail, providing information on the workshop and the SRI-ENACT project (SRI ENACT website link). Then, a second email was sent as reminder, verifying their participation to the workshop.

The organisers decided that asking from participants to sign a Letter of Commitment could act as an inhibitor to their participation in the following meetings and workshops.

The high interest of the stakeholders to be involved in the next steps of the Liaison group was reflected during the whole workshop. In addition, the willingness of the sister SRI projects to support the SRI-ENACT team in this workshop was also very strong and clear. Therefore, the challenge that was foreseen in the beginning, by the organisers, regarding the establishment of a strong strategy to maintain the LG members on-board throughout the whole duration of the project and beyond, seems to have been tackled. Momentum and high quality team work were the most significant factors for this positive outcome. Furthermore, the way the event was organised (breaks in between, two different parts, Digital Tools for interaction etc.), as well as the balance that was kept during the Focus Group discussion with the support of a facilitator/moderator, were also crucial success factors. Finally, creating the conditions for constant knowledge-sharing and aligning the participants to the objectives of the discussion, played also an important role for maintaining the motivation of the group along the process but also for the next meetings.

2.6. Croatia

The preparatory phase and implemented steps in setting up the Croatian Stakeholder Liaison Group were performed according to the initial stakeholder engagement plan. As the first step, REGEA as SRI-ENACT's representative in the Republic of Croatia organised a very important meeting with the relevant national public authority (the Ministry of Physical Planning, Construction and State Assets) and SRI2MARKET's representative in the Republic of Croatia – the Energy Institute Hrvoje Požar (EIHP) in order to join forces towards a successful

implementation of the SRI methodology in the Croatian legal framework. The main reason for this pre-co-creation workshop meeting was that the relevant Ministry officially entered the SRI testing phase with the support of the EIHP (and the SRI2MARKET project). Therefore, it was crucial to join the process and ensure proper inclusion of the SRI-ENACT, for which REGEA obtained the official memorandum of understanding from the Ministry.

Following this valuable step, REGEA proceeded with the organisation of the first co-creation workshop in the Republic of Croatia, where all major stakeholders were invited to participate in the event and contribute with their valuable feedback on future implementation of the SRI in the Republic of Croatia. The Croatian Stakeholder Liaison Group included representatives of the mentioned Ministry, EIHP, all three Croatian chambers of engineers, software/hardware companies such as Smart Sense, Thorium Software and Siemens, four founders of REGEA (regional public authorities – city of Zagreb, Zagreb County, Karlovac County and Krapina-Zagorje County), three technical faculties (all under the University of Zagreb – the Faculty of Mechanical Engineering and Naval Architecture, the Faculty of Electrical Engineering and Computing and the Faculty of civil engineering), the Croatian Chamber of Economy and the Croatian Green Building Council. All mentioned stakeholders expressed their positive intentions in being members of the Croatian Stakeholder Liaison Group and actively participating in all future activities. However, due to very busy schedule and high number of registered participants, some of the representatives could not attend the first co-creation workshop. Therefore, REGEA obliged itself to organise individual meetings with those stakeholders after the workshop.

Regarding the communication, to begin with, a formal invitation and initial information about the workshop were disseminated by REGEA via e-mails, after which, due to its close collaboration with all mentioned stakeholders, REGEA proceeded with informal communication (e.g., via phone, in person, etc.) to confirm their involvement. A relatively high interest for the SRI was confirmed by, in total, 15 participants in the co-creation workshop, which was structured to provide general introduction of the SRI-ENACT project and concept of SRI (according to the European Commission's official methodology), outlook of REGEA's in-house research on the current SRI Landscape in the Republic of Croatia, and overview of official SRI assessment (excel) tool, while EIHP (a representative of the SRI2MARKET project) presented their project and an exemplary SRI assessment of their building. All mentioned parts formed a great introduction for the focus group, where all members of the Croatian Stakeholder Liaison Group provided valuable comments and feedback for future shaping of SRI methodology in the Republic of Croatia. Concluding the co-creation workshop, it was confirmed by all present stakeholders that they want to participate in future meetings organised by the SRI-ENACT and SRI2MARKET projects, which presents a great environment for continuous sharing of knowledge, participation in other activities of both projects and ensuring the best possible preparation of the relevant Ministry in shaping the Croatian legal framework regarding the SRI. Other members of the Croatian Stakeholder Liaison Group who were not present will also be invited in future activities.

2.7. Spain

The selection process and the steps for engaging national stakeholders in the recent co-creation workshop followed the initial stakeholder engagement plan.

Veolia and the SRI Cluster's representation in Spain, successfully collaborated to bring together key stakeholders for a co-creation workshop on the future of SRI in Spain. Participants included energy consultants, technological centres, testing, inspection and certification companies, construction companies, utilities, associations, and the three sister SRI projects from the SRI Cluster, SRI2MARKET, EasySRI and SRI-ENACT.

To ensure clear communication, a two-level approach was followed. Firstly, for stakeholders with whom a close professional relationship has been established in the past, contact by telephone calls was pursued. To all interested parties, including those contacted by phone calls, a formal invitation was sent by email, including information about the workshop, a link to a questionnaire to provide personal details, and the agenda.

Most of the stakeholders that were invited but could not attend the workshop because of other commitments, expressed their interest in becoming part of the Spanish Liaison Group and in participating in relevant future co-creation events. The entities that showed interest, will be part of the SRI cluster in Spain, and will contribute to the decision making of the SRI deployment project in Spain.

The strong interest of relevant parties to participate in the next phase of the Liaison Group was evident throughout the workshop. The willingness of SRI sister projects to support the SRI-ENACT team was also very strong and evident in this workshop. The organisers thought proactively and created a strong strategy to keep the LG members engaged throughout the project and beyond. Speed and high-level teamwork were also important factors to this positive result. Equally important was the way the event was organised, and the balance maintained during the focus group discussions with the support of the facilitator(s)/moderator(s). Finally, creating the conditions for continuous knowledge exchange and aligning participants to the purpose of the discussion, will contribute to keeping the group motivated throughout the process and until the next meeting.

2.8. Austria

The moment the three sister SRI projects (SRI-ENACT, SRI2MARKET and easySRI) kicked off, Austria came through its pilot phase of SRI implementation and all three projects, as expected, were included as Austrian partners. BPE joined SRI-ENACT as a partner without prior experience in SRI. Being added later (in March 2023) BPE had to invest substantial effort to acquire information and visibility. Thanks to previous arrangements of BPE, a network of contacts was spread fast and connections with main stakeholders involved in the Austrian SRI implementation have been made. In that way, the Austrian Stakeholder Engagement was fulfilled according to the initial plan, as

explained in D2.1 deliverable. Furthermore, the co-creation workshop was a great opportunity to level everyone’s knowledge and information on the topic, allowing BPE to engage with the other project’s partners and closely get involved in the future of SRI implementation in Austria.

At national level, the process of the SRI stakeholder engagement started in 2018. A national project was initiated as part of the “City of the Future” research and technology program of On a national level, the process of the SRI stakeholder engagement started in Austria in 2018. A national project was initiated as part of the research and technology program City of the Future of the Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology. Based on this initial project and the results of a national online survey, the first proposal for the SRI Austria methodology was presented.

The initial project continues with the support of several SRI projects running in parallel (SRIDEMO, SRI2MARKET, easySRI and SRI-ENACT) during which the stakeholders have been continuously engaged.

As the implementation of SRI is of evident within the EU, the Austrian SRI framework was planned to be specifically tailored to the national context and prepared for its official introduction. In response to this, all three sister projects, along with the main stakeholders, decided to actively participate and contribute to this initiative.

A stakeholder identification session took place on April 18th, 2023. AEE INTEC, as a partner in SRI2MARKET project, provided the necessary input for stakeholder identification, mapping, and prioritising in the Austrian context. As a result, several stakeholders were identified. They are listed in detail in Table 1 **Error! Reference source not found.** according to the broad conceptualisation outlined below. In Table 1 **Error! Reference source not found.** stakeholders are mapped in terms of their relevance and expected interest. In Figure 4, they are symbolically positioned according to their relevance and interest, as well as their level of engagement.

Thanks to BPE’s professional experience and the Austrian SRI emphasis on harnessing the flexibility potential of the buildings, several new stakeholders will be brought to the joint SRI stakeholders' group. This includes energy communities (i.e., OurPower), flexibility providers and aggregators (i.e., Greenpoint Building), among others.

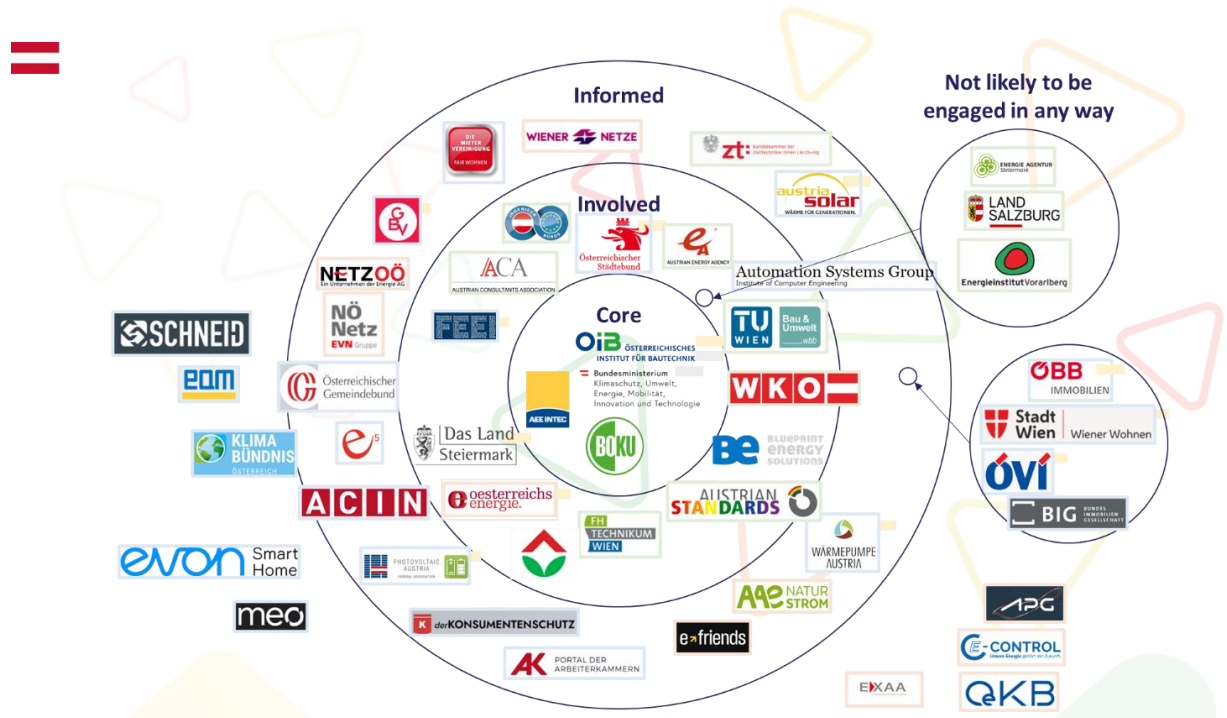


Figure 4 Austrian map of stakeholders according to level of engagement

Table 1 Austria - Stakeholder identification.

Type	Identification	Targeted engagement type within the project				
		Flexibility system	Energy efficient smart buildings and SRI methodology	Market adoption and smart technology packages	National Working Group	Advisory Board
TSO	Austrian Power Grid AG	X				
DSO	Österreichs Energie	X			X	
	Three biggest ones (out of numerous): Netz Niederösterreich GmbH , Wiener Netze GmbH , Netz Oberösterreich GmbH					
Electricity Market Operator	Österreichische Kontrollbank AG ; EXAA - Abwicklungsstelle für Energieprodukte AG	X				
Power System Regulator	E-Control – Strom- und Gasregulierungsbehörde	X				
Electricity Market Regulator						
Energy retailers	aWATTar , eFriends Energy , AAE Naturstrom , and around 150 more!	X			X	
Aggregators						
Academia	AIT , (Expert Helfried Brunner)	X			X	
	Energieinstitut an der Johannes Kepler Universität in Linz - JKU Linz (Expert Andrea Kollmann)	X				
	TU Wien , Energy Economics Group (Expert Reinhard Haas)	X				
	AEE INTEC (Expert Armin Knotzer)					
Building designers	Bundeskammer der Ziviltechniker:innen, Arch+Ing		X			
	Wirtschaftskammer Österreich, Fachverband Ingenieurbüros...		X			
	ACA					
O&M agents	Immobilien- und Vermögenstreuhandler		X			
EPB assessors	Energieagentur Steiermark , Energieberatung Salzburg , Energieinstitut Vorarlberg		X			
Other EPB experts	Österreichisches Institut für Bautechnik OIB , Österreichische Energieagentur AEA		X			
ESCOs	see Österreichs Energie!					
Academia ²	AEE INTEC					

	IBO		X			
	IBRI					
	TU Wien Forschungsbereich Bauphysik		X			
	FH Technikum Wien					
	BOKU-IRUB		X		X	
EPBD implementation body	OIB		X		X	X
	9 Federal state governments, e.g. in Styria		X			
Federal Ministry EPBD implementation	BMK					X
Standardisation body	Österreichisches Normungsinstitut		X			
Smart product suppliers	Evon, EAM, Meo Energy, Schneid, etc.			X		
Technical Building System supplier	FEEI - Fachverband der Elektro- und Elektronikindustrie, Wärmepumpe Austria, PV Austria, Austria Solar			X	X	
Consumer associations	Arbeiterkammer Österreich			X		
	Konsumentenschutz					
Investors	BIG Bundes Immobilien Gesellschaft			X		
Building owners	ÖVI, GBV, OEVB, Wiener Wohnen, etc.			X	X	
				X		
Tenants	Mietervereinigung Österreich					
Community organisations	Österreichischer Städtebund			X	X	
	Österreichischer Gemeindebund					
	e5 Gemeinden					
	Klimabündnisgemeinden					
Academia ³	TU Wien – Institut für Automatisierung und Regelungstechnik, Automation Systems Group, AIT			X		

¹ With significant expertise in power-market electricity systems.

² With significant expertise in energy efficiency and sustainability in the built environment.

³ With significant expertise in smart control and market adoption of technologies.

After the first exercise, the identified stakeholders were placed in a 2D map (based on relevance – interest), whereas the relevance of the identified agents was predicted and the interest or level of expected participation in the project activities was confirmed upon engagement.

In preparation of the 1st co-creation workshop, BPE invited the core stakeholder group identified in D2.1, following its initial strategy. After the co-creation workshop and a subsequent meeting with the representatives of the other sister SRI projects on the 29th of June, BPE established connections with key stakeholders. Also by leveraging the Austrian centralised communication approach, which is adopted by all sister SRI projects, BPE expanded its original target stakeholder group. Several follow up meetings with co-creation live workshops were conducted to further clarify the Austrian overall approach on SRI methodology and then validate the specific SRI-ENACT method. These interactions took place through hybrid workshops and meetings, which also included follow-up interviews with other Austrian Horizon projects focused on SRI topic, building operators managing advanced smart buildings and energy communities and cooperatives. The primary objective of these meetings was to engage these stakeholders in further activities of the SRI ENACT project, such as: e.g., interviews, selection of auditors and buildings for evaluation. The process will continue in the form of individual meetings. All stakeholders expressed positive reactions towards these activities, especially commercial building operators who play a key role in the Austrian SRI-ENACT tasks.

Finally, in a third round of communication activities conducted as part of the preparation for selection of buildings to be audited, several young MSc and PhD students who were working on their thesis in these projects, as well as representatives for Digital Hubs and NGOs dealing with climate topics, expressed interest to get involved, both in communication channels and upcoming SRI trainings.

3. Description of co-creation workshops methodology

Co-creation workshops are a significant part of SRI-ENACT's stakeholder engagement plan and an important step for the national SRI tailoring. A comprehensive co-creation methodology was initially proposed as a common approach for all pilots, providing apart from the main steps of the workshop, an indicative structure for the Stakeholder Focus Groups (See Annex 2), in the form of a template. This, included questions based on the EU SRI framework (EU Final Report on the Technical Support to the Development of SRI for buildings) for tailoring, that should be addressed – to a certain extent – by all national SRI-ENACT pilots.

The proposed co-creation workshop common approach should cover the following aspects:

- Presentation on current SRI national landscape
- Latest updates on the national SRI cluster's (other SRI sister-projects) activities
- Stakeholder Liaison Group session – it was agreed that each co-creation workshop should host a Stakeholder Liaison Group session, in the form of a Focus Group.
- Stakeholder Liaison Group launch event (Greece, Latvia) – in some pilot countries, this event followed the Stakeholders Liaison Group session, presenting to other stakeholders and the general public the main Stakeholder Focus Group results and the scope of work of other sister-SRI projects.

Stakeholder Liaison Group/ Focus Group Discussions

The mandate of the Stakeholder Liaison Group is to identify individuals interested to become SRI auditors, promote SRI pilot programmes and promote the SRI-ENACT tools. The first meeting was set as part of the co-creation workshop as this was a very important opportunity to incorporate liaison group members in the current SRI topics and SRI national tailoring.

Most pilot partners' Liaison Group members matched with co-creation workshop participants. However, there are some differences. A number of Liaison Group members were not available to stay during the whole workshop or some co-creation workshop participants were not part of the Liaison group. Therefore, the number of participants and Liaison Group members were recorded independently.

The core of the Stakeholder Liaison Group meetings was consisted of roundtable discussions. A form of the so-called guided focus group method was chosen as the best one for obtaining feedback.

In general, the focus group method uses active and strong moderators who lead the session. All participants are encouraged to participate and share their views. A warm-up session is convenient for setting the environment and understanding the context of the given subject. Most of the questions are open-ended to support the overall discussion. Usually, there should be no more than 15 participants. Therefore, in this case the focus group method

was chosen mainly for the adequate number of participants in each country and the openness of most of the topics.

In order to support the Stakeholder Liaison Focus Groups, a set of guiding questions was prepared prior to the co-creation workshops (See Annex 2). Some questions had multiple choice answers and pilot partners were asked to use interactive tools for voting (e.g., Slido, Mentimeter, etc.). However, emphasis was given on the discussion that followed each voting and the feedback received. These guiding questions of SRI tailoring questions/topics were recommended initially, but pilot partners could modify them according to their national context and needs. Most of the questions/topics remained identical and therefore, SRI national tailoring approaches could be compared (see Chapter 4).

The focus group topics were based on the EU Final Report on the Technical Support to the Development of SRI for buildings and were contextualised according to each country's needs for input.

Detailed minutes were taken during the Stakeholder Focus group that served as the basis for the national country reports (see Chapter 4).

4. Co-creation workshop country reports

4.1. Bulgaria

4.1.1. Executive Summary

The first Bulgarian SRI-ENACT co-creation workshop took place on 18th May 2003 from 9 a.m. to 1 p.m. in SOHO Office Center, Sofia. The meeting gathered 11 participants, including nine Liaison Group (LG) members and two representatives of BSERC.

Prior to the workshop, BSERC's SRI-ENACT team carried out bilateral meetings with most of the participating organisations to present and discuss the project. Additionally, the workshop materials were e-mailed to all LG members a week before the scheduled meeting.

The main results and conclusions emerged from the first co-creation workshop are summarised as follows:

- All participants support the new indicator SRI and its benefits as an effective tool for introduction of smart technologies in the building sector in Bulgaria.
- Both EC's LIFE projects SRI-ENACT and SMART² could collaborate and through their shared and complementary activities result in more effective and higher quality SRI implementation in the country.
- All participants share the opinion for possible implementation of SRI certification procedure in two consecutive steps: 1st integration in the national legislation and 2nd integration as mandatory procedure in the existing EPB regulation.
- Further proposals for SRI methodology adaptation, for legislation and regulation changes concerning SRI uptake shall be fully coordinated with all LG members prior to submission to governmental institutions for their official approval.
- The SRI uptake could be a regulatory obligation for non-residential buildings and voluntary for residential buildings.
- The participants agreed that the SRI test phase needs to cover a variety of EPB-certified buildings, including non-residential buildings presumably with higher SRI, based on high level of dynamic monitoring and control of technical systems/BMS in operation.
- The participants accepted the BSERC proposal on training for SRI test phase to include professional EPB auditors and organisations, and also every trained SRI auditor to assess in total ten buildings, possibly of different type, desirable EPB certified previously by the same auditor.

4.1.2. Presentations

The following presentations were delivered during the meeting:

- SRI-ENACT project (BSERC) and SMART² project (EnEffect)
- Module 1 Introduction in SRI Methodology: (a) Requirements to applied measures (27/54) to increase SRI; (b) Overview of the SRI calculation methodology; and (c) Examples of assessing the functional perfection of building technical systems
- Module 2 Weightings of Building Technical Domains and Buildings Type: (a) Weighting factors of building technical systems; (b) Proposal to adapt the classification of buildings – to comply with Ordinance No. 7 on Energy Efficiency; and (c) Proposal for adaptation of climatic zones – two options proposed
- Module 3 Integration of SRI in the Regulation and Financing Schemes: (a) Integration of the methodology and the SRI indicator in the regulatory framework and the energy certificates of the buildings; (b) Overview of the existing state; and (c) Proposal for legal and regulatory changes
- Module 4 SRI Auditors' Training and SRI Test-Audit in Buildings: (a) Requirements for auditors under the SRI certification procedure; (b) Training of auditors for the test phase of the SRI indicator, calculators; and (c) Approaches to the selection and test survey of buildings for intelligence

4.1.3. Stakeholder Focus Group (Interactive discussion)

Discussions took place after each of the above five presentations/sessions. At the end of the workshop, LG members were asked to fill in a survey with key questions related to the four modules. Key points of the discussions and the survey results are presented in the below sections.

PARTICIPANTS

The meeting gathered the following 11 participants, including nine Liaison Group (LG) members and two representatives of BSERC (two other LG members were unable to participate):

Table 2 Bulgarian co-creation workshop participants

Nr	Participant	Organisation
1	Ekaterina Geshanova	Ministry of Regional Development and Public Works (MRDPW)
2	Peter Ivanov	Sustainable Energy Development Agency (SEDA)
3	Nina Georgieva	certified energy auditor
4	Iliya Nikolaev	Bulgarian District Heating Association (BDHA)

5	Atanas Stoykov	Energy Efficiency and Renewable Energy Fund (EERSF)
6	Zdravko Georgiev	Manager of Sofia Energy Agency (SOFENA)
7	Velizar Prodanov	Manager of Kolkotok Ltd
8	Georgi Georgiev	Professor in New Bulgarian University (NBU)
9	Kamen Simeonov	EnEffect, Smart Square project
10	Peter Kamburov	Black Sea Energy Research Centre (BSERC)
11	Angel Nikolaev	Black Sea Energy Research Centre (BSERC)

COLLABORATION BETWEEN PROJECTS SRI-ENACT AND SMART²

The conclusion from the presentations and discussions about the LIFE's SRI cluster projects were the following:

- Both projects have the same objective, namely, to support SRI implementation, but through different and complementary activities. SRI-ENACT could benefit from SMART² evaluation of the life-cycle costs of SRI improvement measures, as well as from the past pilot assessment of two buildings (residential and non-residential). On the other hand, SMART² could jointly build with SRI-ENACT the national SRI implementation on the decisions taken by SRI-ENACT's LG.
- Both project teams have the same vision about SRI implementation in Bulgaria, including introduction of mandatory SRI in the respective regulations, and integration of SRI into the well-established process for energy certification of buildings (later, this vision was shared by all LG members).
- Both Bulgarian project teams will continue to coordinate their activities and will co-organise the promotional events, e.g., the project info days.

MODULE 1: INTRODUCTION IN SRI METHODOLOGY

LG suggestions

Following the module presentation, delivered by BSERC, the LG members suggested the following:

- SRI to become a part of the energy performance certificate
- Introduce financial support and promote the benefits of SRI improvement
- SRI would be effective only if obligatory, as part of the regulations
- Adapt the SRI methodology in line with national EPB certification regulation and practice

- The smart ready services from catalogue should include the investment burden and benefit indicators

Survey

Following the discussion, the LG members were asked the following question:

Q1: What is your impression of SRI methodology?

- Directly applicable (1 response)
- Applicable, provided that the following conditions are met (please clarify) (6 responses)
 - Development of the corresponding regulations (3 responses);
 - Additional training of the certified energy auditors and promotion;
 - Integration into the current process of energy audit and certification of buildings, in order to avoid duplication of some activities;
 - Availability of subsidies for SRI assessment.
- Not applicable (0 responses)

Conclusion

SRI is useful and applicable in Bulgaria, provided that it is stipulated in the legislation and regulations. It must be adapted and integrated into the existing EPB certification and practice. SRI could be effective, only if it becomes obligatory.

MODULE 2: WEIGHTINGS OF BUILDING TECHNICAL DOMAINS AND BUILDINGS TYPE

LG suggestions

Following the module presentation, delivered by BSERC, the LG members suggested the following:

- It is good to assess new buildings, but the problem is that the Sustainable Energy Development Agency possesses data only on their energy performance certificates, not detailed information
- Weighting factors of technical domains should be different for a wider spectrum of building types in line with current EPB regulation
- Climate impact on buildings' energy balance should be taken into consideration according to actual EPB regulation, and the existing national nine climate subzones could be aggregated to three relevant zones (Northern-Central, Southern and Black Sea) as per BSERC proposal
- Buildings' type division should follow the current EPB regulation, i.e., 11 types in total
- The weighting factors of the seven smart readiness impact criteria might have constant values for all building types – subject LG members consensus

Survey

Following the discussion, the LG members were asked the following questions:

Q2: Which method you prefer for determining the weighting coefficients for the building domains and the three key functionalities?

- Using statistical information from energy balances of buildings with energy certificate, by type of building (5 responses)
- Using fixed shares, according to expert estimation, by type of building (2 responses)
- Equal shares (0 responses).

Q3: Your preference about the determination of the climate zones:

- According to Regulation 7 – nine climatic zones + degree-days for cooling (0 responses)
- 3 representative climatic zones, based on heating and cooling degree-days (6 responses)
- 1 climatic zone (SE Europe), adopted in SRI methodology (1 response)

Conclusion

The most preferred method for the determination of the weighting coefficients for the building domains is using statistical information from energy balances of buildings with energy certificate, separately for each type of building. Concerning climate zones, the decision is to proceed with three representative zones, as a compromise between simplicity and accuracy. The considered buildings' types should follow the current national EPB regulation (i.e., 11 types).

MODULE 3: INTEGRATION OF SRI IN THE REGULATION AND FINANCING SCHEMES

LG suggestions

Following the module presentation, delivered by BSERC, the LG members suggested the following:

- SRI needs first to be incorporated in the legislation, then into the EPB regulation. Substantial changes will be necessary in the regulations
- Within the project duration the SRI assessment shall focus mostly on non-residential buildings
- The LG members couldn't pre-define the types of buildings to be assessed by each auditor, the building types shall depend upon auditors' proposal
- The SRI uptake could be regulatory obligation for non-residential buildings and voluntary for residential buildings

- Along with future implementation of SRI certification in the EPB practice, the existing various financing schemes for energy efficiency and renovation of building sector will remain unchanged. However, in a short and medium-term perspective, the SRI uptake will need continuous regulatory and different forms of governmental budget support

Survey

Following the discussion, the LG members were asked the following question:

Q4: What is your opinion about the implementation of SRI certification in the building sector?

- A regulatory obligation, after a test phase (1 response)
- A voluntary certificate, available for all buildings, depending on the interest of market actors (0 responses)
- A regulatory obligation for non-residential buildings and voluntary for residential buildings (6 responses)

Conclusion

The most appropriate option for SRI introduction in Bulgaria seems to be a regulatory obligation for non-residential buildings and voluntary option for residential buildings. During the first years of SRI implementation, public financial support is necessary to make the respective building improvements more attractive for the investors and activate the market of the related products and services.

MODULE 4: SRI AUDITORS' TRAINING AND SRI TEST-AUDIT IN BUILDINGS

LG suggestions

Following the module presentation, delivered by BSERC, the LG members suggested the following:

- Prior to the announcement of the SRI training session, the following supporting materials must be ready:
 - ✓ Adapted version of software for SRI calculation. In order to enable the software developer to produce the adapted version, the LG members should agree on: (a) the relevant climate subzones in the country, the buildings classification types, (b) the weighting factors for the nine technical domains, and (c) weightings of the seven impact criteria
 - ✓ Guide for SRI application translated into Bulgarian. Other information materials if needed.
 - ✓ List of the EPB auditors
 - ✓ Training program
 - ✓ List of buildings – subject to SRI application test (desirable)
- Training session should be no longer than one full day
- The scope of the training program should cover at least the following topics:
 - ✓ Review of SRI Methodology

- ✓ ICT and Smart Building Services Catalogues
- ✓ SRI Application Guide
- ✓ SRI Calculation Tool
- ✓ SRI Buildings' Audit, Methods of Assessment
- ✓ Practical Exercise and Exam
- The scope of the practical SRI test should cover in total 130 different types of buildings
- The expected time for training of auditors on SRI might be October/November 2023 – subject to further coordination/confirmation among both project partners, the LG group and the nominated EPB auditors

Survey

Following the discussion, the LG members were asked the following question.

Q5: Is it feasible for each auditor to implement 10 SRI audits of buildings with available energy certificates, using the simplified method "A"?

- Yes, it's not difficult (0 responses)
- Possible provided that the following conditions are met (please clarify) (7 responses)
 - Availability of typical buildings with issued energy efficiency auditing reports + new construction buildings that will enter into operation
 - There are no fixed numbers for each type of buildings to be audited
 - Contact a wider group of auditors and offer them to make SRI assessment of buildings, for which they have signed a contract
 - There is flexibility in terms of number of auditors and the number of buildings
 - No financial valuation of the proposed measures
 - Applicable for buildings which would be audited from now until the end of the year
- Not possible, because ... (please clarify) (0 responses)

Conclusion

It is important to adapt the SRI assessment software tool to the national weighting coefficients, climatic zones, etc. The auditor training needs to be at maximum one full day. The minimum (obligatory) training topics were outlined. The target for 130 SRI-assessed buildings is realistic, provided that auditors have the flexibility to choose the buildings, the buildings have available EPB auditing reports, and the auditors have sufficient time to carry out the SRI audits.



Figure 5 Bulgarian co-creation workshop, picture 1



Figure 6 Bulgarian co-creation workshop, picture 2

4.1.4. Comparing the current SRI landscape in Bulgaria with the insights of the stakeholder focus group

This section presents a comparison of the current SRI landscape in Bulgaria, as described in D2.1 “SRI Current Landscape Report and Stakeholder Engagement Plan” with the insights gained from the LG group members during the first LG workshop.

The comparison is listed in the following tables and the main conclusions are given after them.

Table 3 Current SRI landscape in Bulgaria, as presented in D2.1, and insights drawn from the stakeholder focus group

Focus group's outcomes	Current SRI landscape	Additional information
Support for SRI and its benefits as an effective tool for introduction of smart technologies in the building sector in Bulgaria	The level of adoption of the SRI scheme in Bulgaria is still low, in both the residential and non-residential sectors	The Energy Act recommends the deployment of smart metering and smart grids for better connectivity, awareness and management of final customers' energy consumption
Implementation of SRI certification procedure in two consecutive steps: 1) integration in the national legislation and 2) integration as mandatory procedure in the existing EPB regulation	The regulatory texts related to the application of smart buildings technologies in Bulgarian legislation is in its infancy and thus inconsistent and unsynchronised	The Energy Efficiency Act obliges energy suppliers to provide to their customers detailed data about their energy consumption for the last 24 months, when smart metering systems are used
The SRI uptake to be regulatory obligation for non-residential buildings and voluntary for residential buildings	In Ordinance No. RD-02-20-3 on the technical requirements for the energy performance of buildings there are no regulatory texts on the assessment and application of smart technologies, criteria and indicators. The definition of “Building automation and control” included in the Ordinance needs to be modified in order to cover smart building technologies, their evaluation criteria and SRI.	Ordinance No. 15 stipulates that the design specifications and terms of reference shall include, along with basic technological, functional, and technical requirements, the means of measuring the fuel and energy consumed in the building, including smart metering systems, energy consumption monitoring systems, and standardised energy management systems.
Introduction of governmental financial support and promotion of benefits due to SRI improvement	Provision of feasible financing schemes for SRI implementation such as National Fund for Energy Efficiency and Renewable Energy Sources, ESCO, EU and international programs on energy efficiency and sustainable development, etc.	The Operational Programme “Competitiveness and innovation in enterprises” 2021-2027 and the National Programme for Renovation of Housing Stock (COM, 2015) are appropriate to stimulate the future application of SRI, respectively in industry and the housing sector
Training for SRI test phase to include professional EPB auditors and organisations	Recruit for training and test phase experienced and certified EPB auditors only	All certified professional EPB auditors and organisations are registered in the national Sustainable Energy Development Agency (SEDA)
The SRI test phase needs to cover variety of EPB certified buildings, including non-residential buildings	Ordinance 7 for Energy Efficiency in Buildings differentiates in total 11 buildings types: 2 types of	Good practices in the context of SRI are available in new buildings – mainly administrative, commercial,

provided with high level of dynamic monitoring and control of the building systems/BMS in operation, and/or BREEAM/LEED certified	residential buildings and 9 types of non-residential buildings	and luxury multi-family residential buildings, and certified buildings to international standards for sustainable construction, such as BREEAM and LEED.
SRI procedure uptake would be effective only if mandatory, integrated in EPB regulation	According to BSERC, the mandatory link of the SRI scheme to the building regulations, and the mandatory application of the latter, is the best option	

Table 4 Summary of the key differences between the current SRI landscape in Bulgaria and the insights drawn from the stakeholder focus group

Thematic area	Current landscape (D2.1)	Stakeholder engagement	Alignment
<i>SRI implementation pathway</i>	<ol style="list-style-type: none"> Linkage to the building energy performance audits and certification, in terms of both legislation and practice Regulatory obligation for SRI 	<ol style="list-style-type: none"> Linkage to the building energy performance audits and certification, in terms of both legislation and practice Regulatory obligation for SRI in non-residential buildings; voluntary for residential 	Partial
<i>Trained SRI experts</i>	Certified energy auditors	Certified energy auditors	Total
<i>Financing</i>	Financial support for SRI is necessary	Financial support for SRI is necessary, at least during the first years	Total
<i>Pilot building types</i>	A variety of building types	11 types of buildings according to Ordinance 7	Total
<i>Selection of buildings</i>	Not discussed	Auditors to select buildings audited by them	N/A
<i>Weightings' tailoring</i>	Not discussed	Per climate zone and per type of buildings	N/A

The following interpretations can be drawn from the above tables:

- The evaluations of BSERC and LG group members coincide: the current legislation and regulation support of SRI uptake is not sufficient and effective, thus changes need to be introduced. Linkage to the building energy performance audits and certification, in terms of both legislation and practice, is needed.
- BSERC proposed the necessary legislation and regulation modifications to be realised simultaneously, the LG group members' insight is the SRI pathway to be implemented in two stages – first in the legislation (national policy level) and second in the corresponding EPB regulations and certification procedures (technical level/building sector).
- BSERC and LG group members have equal understanding on the necessity for governmental financial incentives for SRI effective introduction in the existing EPB practice.
- LG group members and BSERC opinion coincide on who should be the eligible SRI auditors – professional EPB auditors/companies licensed by SEDA.
- BSERC and LG group members have similar vision on the targeted buildings' type and quantity for SRI testing phase.

4.1.5. Conclusions and next steps

The focus group's outcomes/key insights were as follows:

- SRI procedure uptake would be effective only if mandatory, as part of EPB regulation
- The SRI uptake could be regulatory obligation for non-residential buildings and voluntary for residential buildings
- Introduce governmental financial support and promote the benefits of SRI improvement

The key insights mentioned above, direct the Focus group's efforts towards the existing legislation, regulation, and public authorities' policy upgrade for the successful development of both sister SRI projects. The key insights also indicate the realistic focus on the effective implementation of SRI certification procedure in the building sector.

Beyond the co-creation workshop, the following next important steps of the national stakeholder's engagement are scheduled:

- Additional bilateral meetings in Ministry of Regional Development and Public Works (MRDPW) and Sustainable Energy Development Agency (SEDA). The main goal of these meetings will be to convince the Government to officially accept and support the SRI test application in the building sector
- Based on the above preparatory meetings, ensure a Bulgarian Government's official letter of support issued for both projects SRI-ENACT and SMART² including the acceptance of SRI test application in 130 buildings.

4.2. Latvia

4.2.1. Executive Summary

Within the framework of the EU LIFE Programme project SRI-ENACT, on Tuesday, May 9th, 2023, the first SRI-ENACT co-creation workshop in Latvia took place. It was organised by the project partner, Riga Planning Region, to address the adoption and implementation of the Smart Readiness Indicator (SRI) scheme in Latvia.

The co-creation workshop was structured in two parts. The first part focused on the project itself, which included a presentation and a review of the existing situation in the field of smart readiness indicators in Latvia, and a discussion with the aim of co-creating a National Methodological Framework for the adoption of the Smart Readiness Indicator approach, as well as the selection of building types for pilot activities.

In the second section ("Stakeholder Liaison Group Launch Event"), the participants had the opportunity to establish or strengthen contacts as well as discuss possible cooperation with other stakeholders that could potentially be involved in the implementation of the SRI approach in Latvia.

A group of 17 experts participated in the co-creation workshop and the SRI-ENACT Liaison Group meeting, including representatives of: 1) national policy-making authorities, such as the Ministry of Climate and Energy, the Ministry of Economics, 2) national policy implementers, for instance, the State Construction Control Bureau of Latvia and the State Joint Stock Company "State Real Estate", 3) financial institutions – the Central Finance and Contracting Agency and the state-owned development finance institution ALTUM, 4) local municipalities located in the Riga region, 5) the professional associations - the Association of the Energy Auditors, and 6) research institutions and private developers.

The event received positive feedback from all participants, and they expressed their willingness to continue cooperation both within the framework of the SRI-ENACT Liaison Group and informally.

4.2.2. Introduction

The first SRI-ENACT co-creation workshop and the Liaison Group meeting were organised as a joint event. The first part of it, targeted the project and the existing situation in the field of smart readiness of buildings in Latvia, and the second part focused on discussion and elaboration of the roadmap for the introduction of the SRI approach in Latvia. The event took place at the City Hall of Riga municipality on May 9th, 2023.

All major stakeholders identified as part of the SRI-ENACT Latvian stakeholder plan were approached beforehand by the project team. This included both formal (a letter of invitation) and less formal communication. The formal invitation letter, signed by the Head of Administration of the SRI-ENACT partner Riga Planning Region, was sent to all stakeholders in the fourth week of April 2023.

In addition to the selection of stakeholder organisations, the SRI-ENACT Riga team also discussed possible candidates (individual experts or managers) for participating in the project Liaison Group, based on their professional knowledge, experience, implemented projects, and awareness of the situation in the field. These people were also approached individually.



EU LIFE programme project
Co-creating Tools and Services for Smart Readiness Indicator Uptake (SRI-ENACT)
1st Project Liaison Group meeting in Latvia / co-working seminar
9 May, 2023 at Riga City Hall, conference room 511
AGENDA

Time	Presentation, discussion	Presenter
09:30 - 10:00	Registration, coffee / tea and snacks	
10:00 – 10:15	Welcome and Introduction: short introduction, presentation of the goals of the Stakeholder Liaison, overview of the agenda	Dr Ilgvars Francis, SRENACT project manager and expert at Riga Planningregion
10:15 - 10:45	Presentation of the SRI-ENACT project, activities in Latvia, expected results, deliverablesand cooperation with stakeholders	Dr Ilgvars Francis, SRENACT project manager and expert at Riga Planningregion
10:45 – 11:15	Presentation of the current SRI landscape in Latvia, alignment of the project activities with national guidelines for the introduction of the SRI approach in Latvia – policy recommendation , prioritysectors, training SRI auditors in Latvia	Dr Agris Kamenders, SRI-ENACT Lead expert at Riga Planningregion
11:15 – 13:00	Stakeholder Liaison Group Launch Event. Discussion	All participants Discussionmoderated by Dr Agris Kamenders
13:00	Conclusion, next steps	

Figure 7 The Agenda of the first co-creation workshop and SRI-ENACT Liaison Group Meeting in Latvia

4.2.3. Presentations

During the first section, the following presentations took place:

- Welcome and Introduction (Dr. Ilgvars Francis, SRI-ENACT project manager and expert at Riga Planning Region): a short introduction, presentation of the goals of the Stakeholder Liaison Group, overview of the agenda.
- Presentation on the SRI-ENACT project, its activities in Latvia, expected results, deliverables, and cooperation with stakeholders (Dr. Ilgvars Francis, SRI-ENACT project manager and expert at Riga Planning Region);
- Presentation of the current SRI landscape in Latvia and alignment of the project activities with national guidelines for the introduction of the SRI approach in Latvia (Dr. Agris Kamenders, SRI-ENACT Lead Expert at Riga Planning Region);
- Discussion, moderated by Dr. Agris Kamenders, SRI-ENACT Lead Expert at Riga Planning Region.

4.2.4. Stakeholder Focus Group (Interactive discussion)

PARTICIPANTS

Participants represented all major stakeholder groups, such as: 1) ministries and agencies in charge of energy efficiency, environment, and buildings; 2) local and regional public authorities; 3) national finance institutions; 4) energy consultants and private developers; 5) property owners and facility managers; 6) professional associations; 7) research institutions; and 8) ESCOs.

In total, 15 organisations were represented at the meeting.

Table 5 Latvian co-creation workshop participants

Nr	Participant	Organisation
1	Karīna Zvirbule (Liaison Group member)	Deputy director, Housing policy department, Ministry of Economics of Latvia
2	Aleksandrs Soročins (Liaison Group member)	Senior expert, Energy efficiency project division, Central Central Finance and Contracts Agency of Latvia
3	Edīte Biseniece (Liaison Group member)	Deputy director, State Construction Control Bureau of Latvia
4	Indra Levite (Liaison Group member)	Senior expert, Climate and energy ministry of Latvia
5	Uģis Liepa (Liaison Group member)	Senior project manager, City development department of the Jūrmalas city municipality
6	Ilmārs Stašulāns (Liaison Group member)	Energy manager, Municipal property department, Mārupe municipality

7	Laura Gleizde (Liaison Group member)	Energy efficiency expert, State-owned development finance institution ALTUM
8	Gatis Žogla (Liaison Group member)	Chairman of the board, Association of the energy auditors of Latvia
9	Monta Martīni	Project manager, Development and planning board of the municipality of Mārupe
10	Gatis Konrads (Liaison Group member)	Head, Investment division of the municipality of Sigulda
11	Valdis Ratniks (Liaison Group member)	Manager, Energy efficiency information centre, Riga Energy Agency
12	Jānis Kļaviņš (Liaison Group member)	Manager, Energy management sector, State Joint Stock Company “State Real Estate”
13	Edgars Augustiņš (Liaison Group member)	Director, “Renesco”, Ltd
14	Ilgvars Francis (Liaison Group member)	SRI-ENACT coordinator in Latvia, Riga planning region
15	Agris Kamenders (Liaison Group member)	SRI-ENACT lead expert in Latvia, Riga planning region
16	Aija Zučika (Liaison Group member)	SRI-ENACT expert in Latvia, Riga planning region
17	Jūlija Jaunrodziņa	SRI-ENACT communication specialist in Latvia, Riga planning region

By signing the registration sheet, all participants in the co-production workshop confirmed that they did not object to taking photos during the event. Thus, compliance with personal data protection was ensured.

After the presentations, the participants engaged in the discussion, which initially focused on the existing situation in Latvia. The Group continued by targeting several topics or sets of questions pre-defined by the lead partner. All 17 experts, including the project team members, participated in the stakeholder focus group discussion. For each topic, the moderator, Dr. Agris Kamenders, SRI-ENACT Lead Expert at Riga Planning Region, presented an online poll using the Slido digital platform as a means to find out the opinions of all participants. An interactive discussion followed based on the results of each poll.



Figure 8 Latvian co-creation workshop

EXISTING SITUATION – CHALLENGES AND OPPORTUNITIES

The first part of the discussion referred to the existing strengths and weaknesses, as well as potential challenges to adopting the SRI approach in Latvia. Special attention was paid to the possible ways and methods that could stimulate the wide adoption of the SRI approach in Latvia.

The participants agreed that, to date, the Smart Readiness Indicator scheme has not been sufficiently tested in Latvia. Apart from a few demonstration projects that attempt to implement the SRI scheme on a local basis in the city of Riga, no demonstration projects that help implement the SRI scheme on a local, regional, or national basis have been initiated or implemented.

Therefore, there was a common consensus that the SRI-ENACT project could become the very first structured and targeted attempt to introduce the SRI approach as such, and allow for the application of the SRI methodology to the Latvian situation by implementing a certain pilot project.

Mr. Valdis Ratniks from the Riga Energy Agency argued that the suggestion to administratively integrate the SRI certification process directly into the existing system of energy certification would not suffice. Instead, he recommended a combined approach, which implies cooperation between the owner or manager of the building and the energy service suppliers. He quoted the city hall building of the Riga municipality as an example. The Riga Energy Agency has recently done an SRI assessment in the building, and the practical steps before the actual assessment meant only a few meetings with the auditors and the technology suppliers.

Mrs. Zvirbule from the Ministry of Economics emphasised that it is essential and very important to select the appropriate buildings for SRI assessment. She also informed the audience that the introduction of the remote metering system is already foreseen in the existing regulation, thus providing opportunities for successful adoption of the SRI approach in Latvia. In her opinion, it is not useful to carry out SRI assessments on all buildings. Instead, we should focus on a certain energy efficiency class of buildings; the SRI assessment should be a voluntary option for non-priority types of buildings.

Mr. Ratniks mentioned that a simple method of equipping all heat radiators or convectors with smart thermal heads could be a useful measure to gradually introduce the SRI approach in Latvia. He argued that the path lies in the introduction of simple schemes first, and more sophisticated solutions afterwards, to make the adoption of the SRI methodology a smooth and gradual process. He continued that simple techniques and technological solutions could immediately lead to improvements in energy efficiency and the smartness of buildings.

Mr. Kļaviņš from the State Joint Stock Company "State Real Estate" referred to the existing regulation, which stipulates that an energy audit must be performed in buildings with a usable area of more than 290 square metres. This implies that a number of energy certificates are already available, that can be linked to the SRI assessment. However, to make the system work, he insisted that real responsibility from the owners or managers of the buildings must be achieved, and supervision ensured. It is important that the residents or tenants know the degree of readiness of their buildings, and it is equally important that the SRI assessment allows for precise recommendations about actions that must be taken in every building. The SRI assessments must encourage certain measures that allow improvement of energy efficiency and certain benefits for the end user thereafter.

The members of the Liaison group agreed that several possible implementation pathways for the application of the SRI scheme at a national level could be identified. One of them could imply amendments to the existing regulatory framework to make SRI assessment advisable or compulsory for certain types of buildings, and determine technical requirements for the smart readiness of new buildings or in cases of complete reconstruction.

Another scenario regards capacity building activities providing training and education for building owners, architects, engineers, and contractors on the importance of SRI and the best practices for implementing it. Introducing simple solutions first, would enable the dissemination and successful uptake of the SRI scheme in Latvia.

Mr. Gatis Žogla from the Association of Energy Auditors of Latvia pointed out the necessity to understand who the end beneficiary is and what "tangible" benefits the SRI assessments bring to them. The fact that it allows for increased "smartness" of the building, or indicates energy efficiency per se, does not imply certain financial benefits. He suggested that the project team arranges a separate meeting with private finance companies to find out their attitude regarding SRI assessments.

Mr. Stašulāns from the municipality of Mārupe who works as an energy manager at the municipality and is responsible for the local register of energy efficiency in all municipal properties, presented the example of Mārupe where all municipal buildings have energy certificates. He pointed out the fact that the information collected provides the municipality with a plausible overview of the existing situation and allows it to adjust the planning documents accordingly by setting new targets and identifying certain actions. On the other hand, this knowledge does not benefit the users of the building. He insisted that circumstances must be created that motivate the manager or owner of the building and encourage them to carry out the SRI assessment. The economic or financial value is the key, he added.

Mr. Žogla agreed with the previous speaker by pointing out that the fact that a particular building demonstrates a high degree of smart readiness does not necessarily mean that the smarter building will be less cost-effective, either in the short or long run. In his opinion, new and smart buildings can actually be more expensive in terms of initial installation and management in comparison with less sophisticated but still energy efficient buildings.

Mrs. Zvirbule minimised these concerns by informing others that the Ministry of Economics of Latvia has already elaborated amendments to the national regulatory acts that require that all buildings be energy certified. According to their plan, the amendments will be approved by the Cabinet of Ministers in 2023. Thus, energy certification of buildings, including the introduction of the "smart" dimension, will provide a basis for the gradual progress.

The news were received positively by those present, and Mr. Kļaviņš encouraged the representative of the ministry to also describe the technology so that everyone has a common understanding.

After the first part of the discussion was finished, the participants focused on the pre-defined topics (sets of questions).

IMPLEMENTATION PATHWAYS

The first topic that was discussed in detail was the SRI implementation pathways. Participants were asked which of the five implementation pathways identified by the EU should be the most appropriate in Latvia, given the fact that the SRI approach has not been tested in Latvia yet. The scenario preferred by most experts was the one included linking SRI with the existing system of energy performance certificates and energy auditing. Some participants argued that it would not be possible to introduce a new system during the implementation phase of SRI-ENACT as it would require serious preparatory work and pre-feasibility and feasibility studies that allow to comparing various options from various perspectives. Linking the SRI certification to the existing system would also provide a sound legal basis for the comparative analysis and fit within the time frame of the project.

Other pathways, such as linking SRI certification to the installation and use of smart meters or linking SRI to new construction (including the requirement for SRI assessment as part of the terms of reference for architecture and construction work assignments), were also discussed, but the group agreed that it would be far more complicated to pursue these pathways.

Conclusion

The experts concluded that the most suitable solution for Latvia is to link SRI assessments with the existing energy certification system. This means that it is crucial to ensure that certified energy auditors improve their skills in conducting smart readiness assessments. The SRI-ENACT project provides training for energy auditors and conducting audits in buildings (WP4) and creates a good platform for gradual improvement of skills and knowledge transfer in the pilot phase.

TRAINING / CERTIFICATION OF SRI PROFESSIONALS

The discussion continued with a focus on the potential SRI assessors. The main topic of this part was to ascertain what professionals (or professional associations) should be considered the key group authorised to carry out SRI assessments in Latvia, given the existing regulations and circumstances.

At the beginning of this part of the discussion, Dr. Kamenders conducted an online survey asking for participants' opinions. More than two-thirds (14 out of 17 experts) thought SRI certification should be done by energy auditors or energy inspectors, and only three experts preferred engineers or owners of the buildings.

This meant that the majority of those present thought that professional energy auditors or inspectors should be considered the target group for SRI assessments, and they should be approached by the project team when selecting participants of the SRI training activities in Latvia. These assessors will be skilled and qualified enough not only to carry out the assessments but also issue the SRI certificates.

Participants also agree that the energy experts employed by the Energy Service Companies could possibly be trained as SRI experts during the training activities in Latvia.

The largest uncertainty was regarding to the experts who will conduct SRI training in Latvia, at least at the initial stage, i.e., before the first group of SRI auditors will have finished the first cycle of the training programme and become qualified for the next rounds (train-the-trainer approach). Currently, there is a lack of trainers/energy experts who are sufficiently qualified to carry out SRI training. The SRI-ENACT project budget does not provide enough funds to attract external experts. The members of the Liaison Group in Latvia commissioned the SRI-ENACT project team to request advice and assistance from the project consortium.

Mrs. Zvirbule emphasised that not all certified energy auditors understand how smart systems work. Therefore, it is not necessary to narrow the circle to the energy auditors only. Instead, other specialists should also be given the opportunity to participate in the trainings and later run them. The main criterion should be the understanding of smart systems and the ability to assess the smart readiness of buildings. As well, she reminded other colleagues that the Directive does not require the creation of a separate certification procedure for assessments of smart readiness.

Most participants agreed that the focus should be on responsibilities and contents rather than procedures. Given the fact that testing of the smart readiness approach in Latvia is still in its early stages and the necessity to achieve project objectives and quantitative results (the number of SRI audits performed during the implementation of SRI-ENACT), the Liaison Group decided that training activities in Latvia should address certified energy auditors or inspectors.

Conclusion

The attendees agreed that the training of SRI auditors should basically be linked to the training events intended for energy auditors. Such an approach will allow for the fastest possible adoption of the SRI approach in Latvia and will enable the creation of an initial ecosystem of SRI auditors that can be gradually developed over time.

METHODS

The third topic discussed at the meeting was about the methods according to which the SRI should be calculated. After a brief introduction to the methods of calculation, Dr. Kamenders conducted another survey to find out which method was the most suitable. The majority of participants (15 out of 17) chose Method A and Method B as the most appropriate and applicable in Latvia. The group refused to use Method C, which provides for the use of real-time data, because it requires a higher level of preparedness that cannot be provided at the present.

Conclusion

Method B is considered the most appropriate at this stage of development.

TYPES OF BUILDINGS

The next pre-defined topic addressed the type of buildings that should be selected for piloting.

Most of the participants felt that piloting activities should be carried out in large commercial buildings, but it would also be necessary to include examples that apply to public and residential buildings. Experts believed that such an approach would allow a better understanding of which areas and which types of buildings should be prioritised for SRI assessments in Latvia.

On the other hand, SRI-ENACT partner Riga Planning Region is a regional authority responsible for the elaboration and implementation of selected regional development policy instruments. The Regional Development Programme 2021-2027 is one of the most important medium-term regional development policy instruments of the Riga Planning Region, which sets regional development priorities, lists measures and projects, and ensures monitoring over time. Given that all local (municipal) policy instruments must be aligned with this regional policy instrument, cooperation with local municipalities that are situated in the region is also of great importance to raise awareness of the SRI approach at the lower level of the development planning hierarchy. Therefore, pilot activities in Latvia will be carried out in all nine municipalities in the region's territory and the buildings where the SRI assessment will be carried out, will be selected in cooperation with the municipal development or energy departments.

Conclusion

Practical applications in the test phase should be carried out in: 1) commercial buildings, and 2) public buildings. Residential buildings are the third priority.

DOMAINS

The fifth question concerned the domains (based on the SRI methodology) where emphasis should be placed during the pilot implementation. Again, participants were asked to vote.

The result of the vote indicated that preference should be given to solutions for heating, cooling, hot water preparation, ventilation, electricity, and lighting (ranking from highest to lowest). However, depending on the choice of buildings, this list of priority actions could change.

Conclusion

Heating, hot water, ventilation, and cooling solutions have been identified as of primary significance for testing the SRI approach.

POLICIES & FINANCING SCHEMES

The final issue discussed by the attendees concerned the alignment of the SRI approach with possible financial instruments.

So far, no in-depth studies that include an assessment of the situation in the field of SRI have been conducted in Latvia. This means that the possible alignment of SRI with financing instruments has not been evaluated either; for example, the position of banks has not been clarified, and SRI has not been used as a criterion in state financial instruments.

In order to gain more clarity on this issue, the Liaison Group includes representatives from institutions managing public financial instruments. At the moment, it is still premature to give a clear answer to the basic question about SRI as a criterion in state support instruments, but the group of stakeholders agreed that the project team organise separate meetings or interviews with financial organisations, including private ones, to find out their opinion. The Liaison Group decided to return to this issue at the next Group meeting in the autumn.

Conclusion

Simultaneously with the development of policy solutions for the adoption and implementation of the SRI approach, it is necessary to evaluate whether and how the SRI criteria can be included in the regulations of state and local government support programmes as a stimulating factor for the wider implementation of the SRI approach in Latvia.

4.2.5. Comparing the current SRI landscape in Latvia with the insights of the stakeholder focus group

This section summarises how the current SRI landscape in Latvia, as presented in D2.1 "SRI Current Landscape Report and Stakeholder Engagement Plan", compares with the insights gained from the co-creation meeting and individual consultations with major stakeholders who attended the first co-creation workshop in Riga. Table 6 provides a summary of the alignment levels between what was described in D2.1 and the views of the stakeholder group that participated in the co-creation activity, broken down by topic.

A high correlation between initial conclusions and expert opinions is observed. Experts in the field agree with the initial assumption that SRI certification needs to be linked to the existing energy certification system, which also means that the training of SRI auditors should primarily involve qualified energy auditors.

The interviewed experts also supported the opinion that the most suitable SRI assessment method for Latvia is Method B, which should be used in practice during assessments in the future.

When preparing the initial description of the SRI Landscape in Latvia, the project experts did not indicate which types of buildings should be prioritised for SRI assessments. During the discussion, a common opinion was reached that, for various reasons, SRI assessments should be carried out in commercial and public buildings in Latvia, with residential buildings as the third priority.

Likewise, the technical domains were not discussed when the SRI-ENACT Riga team provided their input to the D2.1 "SRI Current Landscape Report and Stakeholder Engagement Plan". However, during the co-creation workshop, these issues were discussed, and heating, hot water, ventilation and cooling were selected as the primary domains.

Table 6 Latvia - Summary of the key differences between the current SRI landscape in Latvia, as presented in D2.1, and the insights drawn from the stakeholder focus group

Thematic area	Current landscape (D2.1)	Stakeholder engagement	Alignment
<i>SRI implementation pathway</i>	3. Linkage to the EPCs	1. Linkage to the EPCs	Full compliance
<i>Trained SRI experts</i>	1. Energy inspectors 2. Energy auditors	1. Energy inspectors 2. Energy auditors	Full compliance
<i>SRI evaluation method</i>	Method B	Method B	Full compliance
<i>Pilot building types</i>	All types of buildings that require energy certificates	1. Commercial 2. Public	Partial compliance
<i>Preferred technical domains</i>	Not discussed	1. Heating 2. Hot water 3. Ventilation 4. Cooling	N/A
<i>Weightings' tailoring</i>	Not discussed	Not discussed	N/A

4.2.6. Conclusions and next steps

The discussion with the Liaison Group members and other stakeholders on the adoption of the SRI approach in Latvia highlighted the need to continue communication both within formal (meetings and workshops) and informal (everyday communication) circles. To achieve it, the Liaison group member agreed to meet either in person or online on a regular basis – at least once every six months.

The piloting of the SRI approach in Latvia should focus on medium-sized or large commercial buildings but could also include public and residential buildings to provide more coverage.

Also, a common understanding should be achieved regarding training measures and certification of SRI auditors.

Next steps include:

- Coordination of SRI-ENACT activities in Latvia, separate interviews with key policy makers and policy implementers (the Ministry of Economics, the State Joint Stock Company "State Real Estate", the Association of the Energy Auditors of Latvia, private technology suppliers).

- Request that the national policymakers approach the European Commission regarding the testing of the SRI approach in Latvia.
- Continue the dialogue within the Stakeholder Liaison Group; tentatively, the next co-creation group meeting will be organized in September 2023 as detailed information on the SRI-ENACT toolkit and training package (SRI-ENACT Assessment Tool, SRI-ENACT Decision Support Tool, SRI-ENACT Guidebook, and Capacity Modules) becomes available.
- Selection of energy auditors for training activities and energy audits in cooperation with local municipalities located in the Riga region. This includes the compilation of the preliminary list of buildings where the SRI audits will be carried out.

After the event, a message about the successful co-creation workshop was posted on the website of the Riga planning region and the SRI-ENACT project, and an email was sent to each participant thanking them for their contribution.

4.3. Czech Republic

4.3.1. Executive Summary

SEVEn organised on May 31st, a co-creation workshop (part of which was also the Czech liaison stakeholder meeting) on the implementation of the Smart Readiness Indicator (SRI). The co-creation event took place in Prague (Pernerova street 35). In total, nine experts participated in the co-creation workshop.

The co-creation workshop was structured in two parts: Part I. Czech Stakeholder Liaison Group Session with presentation on SRI ecosystem and SRI projects, and Part II. SRI co-creation workshop with national SRI tailoring and obtaining feedback.

Part II of the workshop was held in a focus group format, with moderated questions on the SRI national tailoring and implementation. Below, a brief list of the stakeholders' commonly agreed points:

- The SRI implementation would be challenging in the Czech Republic as there is low demand for smart solutions.
- The majority of participants expressed that the SRI as market-based tool is the best implementation pathway.
- The SRI training and certification process will be based and shaped according to the implementation pathway. The SRI auditors will be probably Czech EPC auditors or general energy auditors.

- The general understanding of participants was to use the comprehensive method B. However, the method selection will depend on the implementation pathway. There is a need to assess significant number of buildings to get more experiences.
- There was a general understanding that the SRI will be more useful for non-residential buildings.
- There is no need for changes of the nationally defined weighting factors and/or climate zone assignment for now.
- There will be no policy changes and/or financing schemes in the Czech Republic.

4.3.2. Introduction

The first Czech SRI co-creation workshop was intended to present the ongoing activities in SRI ecosystem (SRI Platform, SRI Cluster, ongoing four SRI projects) and to obtain sufficient opinions and feedback for national SRI tailoring. Therefore, the Czech SRI co-creation workshop consisted of two parts:

- Part I: Czech Stakeholder Liaison Group Session - presentation on SRI ecosystem and SRI projects
- Part II: SRI co-creation workshop - national SRI tailoring and obtaining feedback

The invitation to the co-creation workshop was sent to several key actors including Ministry of Industry and Trade representatives and prof. Kabele as representative of the Czech SRI pilot (Czech Technical University). Unfortunately, prof. Kabele was not able to join the event due to date conflict.

4.3.3. Presentations

The following presentations took place:

- SRI-ENACT project and SRI ecosystem (Jiří Karásek, SEVEN): General Introduction, Introduction to SRI-ENACT project, presentation on Czech stakeholder LIAISON group, SRI ecosystem.
- SRI landscape and SRI Methodology (Michal Staša, SEVEN): The basics of SRI Methodology, principles and basic information about Czech pilot phase, real time quick example of SRI assessment of building.
- Stakeholder Focus Group and discussion phase (Jiří Karásek and Michal Staša, SEVEN): The moderated focus group with set of questions and topics.

4.3.4. Part I: Stakeholder Focus Group (Interactive discussion)

PARTICIPANTS

The Czech co-creation workshop was highly anticipated by all attendees and organisation team and most of the members invited, managed to attend.

The Liaison Group is the key Stakeholder group established in the framework of the SRI-ENACT project. The main Liaison Group’s objective is to bring the latest and the most accurate information on SRI and to identify and recruit individuals interested in becoming SRI auditors. The Liaison Group is the only platform dedicated to SRI in the Czech Republic.

The list of participants:

Table 7 Czech co-creation workshop participants

No.	Participant	Organisation
1	Ján Čiampor	Ministry of Industry and Trade
2	Nathalie Marková	Ministry of Industry and Trade
3	Vojtěch Svoboda	Ministry of Industry and Trade
4	Jiří Karásek	SEVEn
5	Michal Staša	SEVEn
6	Jakub Kvasnica	Czech Technical University
7	Daniel Macek	Czech Technical University
8	Miroslav Mareš	Association of Energy Auditors
9	Lenka Matějčíková	Grinity

4.3.5. Part II: Co-creation workshop

After the presentations, a focused discussion followed, with the participation of 7 experts (one excused for health problems).

The focus group tackled seven main topics. Each topic was presented with several options (multiple choices). The opinions were collected then by writing down the minutes. As the number of participants was not high, the discussion among participants stimulated a debate but was very honest and open.

IMPLEMENTATION PATHWAYS

The first topic concerned the SRI implementation pathways as recommended in final report on the technical support to the development of a smart readiness indicator for buildings.

The main discussion was about what is the purpose of the SRI and who should it serve. These points were discussed thoroughly:

- SRI indicator could serve as market stimulation in several years.
- Czech authorities are ready to implement SRI and the implementation will correspond with EPBD IV.
- As SRI is not only focused on energy efficiency but also assesses energy flexibility, the SRI would have greater benefits for larger buildings.
- It was discussed that mandatory EPC pathway would mean that there is enough of SRI auditors capable of SRI assessment. Also, the mandatory way could reduce importance as the quality of SRI assessments could be low, especially in the first years of implementation.

Suggestions:

- SRI auditors should provide the information in which domains the building could be better.

Conclusion

The majority of participants considered as the best SRI implementation pathway, a market-based voluntary scheme where self-assessment is supported by on-line tools and a 3rd party certified assessment offered to those willing to pay for it. This pathway would be the best option at least for the first several years. The most important advantage is that market could get used to the SRI methodology, by gradual training the SRI auditors and promoting SRI among customers.

TRAINING / WHICH PROFESSIONALS ARE SUITABLE TO BECOME SRI EXPERTS

The second topic was focused on capabilities of people suitable for SRI assessments. They are the so-called energy experts in Czech Republic and have several specialisations. As a result, the discussion was mainly focused on which specialisation should be enough for SRI assessment. Several discussion points:

- If the state would request an SRI assessment, it should supervise the certification process as well. If the SRI assessment would be based on a market-based tool, there is no need for state certification.
- There are two possible candidates for SRI auditors: EPC auditors (auditors for Energy Performance Certificates) and general energy auditors (energy experts working on energy assessments and energy audits). There were two opinions: (1). EPC auditors are enough for SRI assessment and EPC auditors have enough information on buildings, and (2). EPC auditors are considered to be fully experts in TBS (Technical Building Systems) and therefore, they can do SRI assessments. Yet, the number of auditors is limited.
- SRI auditors need to know the details of technical building systems to assess SRI.
- The training process and general certification will be based mainly on the SRI implementation pathway. There will be no state certification in case of the market-based assessment. If the state requests SRI assessment in any way, there must be state supervision on the SRI training process.

- Extending the list of exam topics for the SRI energy auditors' trainings can increase know-how and make implementation easier.
- The capacity of energy auditors is limited.

Conclusion

The SRI training and certification process will be based and shaped according to the implementation pathway. The SRI auditors will be probably EPC auditors or general energy auditors (the majority spoke in favour of general energy auditors). SRI assessment know-how will be transferred in the general energy auditor trainings.

METHODS

The third topic concerned the method for calculating the SRI. The discussion about calculation methods was short. The main discussion points:

- Even Method B could be quite fast if SRI auditors are well trained and if they have enough building information.
- Even though it is more complicated, method B is similar to the other commercial certification systems.
- Method C is not functioning and well-established, and thus, not an option for now.
- It is very important to assess large number of buildings (100+) to get some relevant experience. The number of assessed buildings in Czech pilot phase is low.
- There is a general understanding that SRI should be implemented on non-residential buildings.

Conclusion

The outcome of this discussion was that participants would like to use method B. But the choice of the method will depend on the implementation pathway. There is a need to assess a significant number of buildings to get more experiences.

BUILDING TYPES

The fourth topic was dedicated to building types and categories.

The main comments in the discussion were:

- There is a general understanding that SRI should be implemented on non-residential buildings, rather than residential or all buildings.
- There are significant differences among building types. Some categories would have naturally high SRI score, other categories will have low SRI score. There is limited ability to compare buildings and among building categories as well.

Conclusion

There was a common decision that the SRI would be more useful if implemented mainly on non-residential buildings.

SRI METHODOLOGY NATIONAL TAILORING

The fifth topic concerned the SRI national tailoring. The main discussion points:

- The modification of weighting factors changes the overall SRI score only in a limited way.
- It was repeated that there is a need of experience of SRI assessments in many buildings. This would be essential for SRI national tailoring and weighting factors.
- SRI-ENACT will offer first experiences with large scale SRI assessments.

Conclusion

There is no need to change the nationally defined weighting factors and/or climate zone specification for now.

POLICIES AND FINANCING SCHEMES

The last topic discussed, was policies and financing schemes. The following points were discussed:

- No changes to Czech Acts or other legislation policies are expected (yet).
- The assumption is that only limited documents will be changed (energy auditor exam topics), etc.
- There will be probably no financing schemes in support of SRI or they will be very limited.

Conclusion

There will be no policy changes and/or financing schemes in the Czech Republic.

4.3.6. Comparing the current SRI landscape in Czech Republic with the insights of the stakeholder

focus group

The Czech landscape preview assumed low demand for smart solutions in the Czech Republic. The discussed implementation pathways reflect this fully. Also, the limited interest for the co-creation SRI workshop suggests that this topic is not important for the most of stakeholders. Moreover, as awaited, the discussion showed that the implementation would be challenging.

As showed in the Czech landscape preview, the SRI auditors would be accommodated within the energy auditors-related framework. This fully depends on the implementation pathway although energy auditors have the most needed skills for becoming SRI auditors.

The commonly agreed pathway of SRI as a market-based tool was chosen also because of the fact that the discussed number of disadvantages of the obligatory SRI scheme was much more than expected in the Czech SRI landscape. The lack of skilled energy experts who can become SRI auditors is one of the main disadvantages.

According to the discussions, the assumed preliminary roadmap aspects should be updated. In addition, as agreed, the analysis of the first SRI assessments' results would be essential, and it should cover more than 100 different-type buildings. This aspect was not considered in the current Czech SRI landscape.

The Czech SRI current landscape proposed several financing schemes and mechanisms. After the discussion with the Ministry of Industry and Trade, it is clear that there is no possibility to get financial sources for SRI uptake in the nearest years ahead. This is mainly because of the overall state budget situation and the several so-called “saving packages” adopted by government.

Table 8 Summary of the key differences between the current SRI landscape in Czech Republic and the insights drawn from the stakeholder focus group

Thematic area	Current landscape (D2.1)	Stakeholder engagement	Alignment
<i>SRI implementation pathway</i>	Linkage to the EPCs or partially linked to energy audits	Market-based tool	No
<i>Trained SRI experts</i>	Energy experts/auditors	Energy experts/auditors	Total
<i>SRI evaluation method</i>	Not described	Method B	N/A
<i>Pilot building types</i>	Not specified	Mainly non-residential	N/A
<i>Emphasised technical domains</i>	Not described	No need for specification	N/A
<i>Weightings' tailoring</i>	Not described	No need for specification	N/A



Figure 9 Czech co-creation workshop picture

4.3.7. Conclusions and next steps

Czech SRI-ENACT team invited to the co-creation workshop several key stakeholders, such as professionals in buildings' certifications and energy efficiency, facility managers, universities, smart technology workplaces, etc. Czech SRI-ENACT team promoted the workshop on the most influential website on technical building systems (tzb-info.cz) with thousands of visits per day. However, the team received only limited responses. Partly, some key stakeholders were not able to join the event due to date conflicts or other personal problems.

In the co-creation workshop three ministry representatives and other key experts participated. The obtained feedback on SRI implementation in Czech Republic, is credible and comprehensive.

There is a common opinion that in Czech Republic SRI should be implemented mainly based on the market-based tool assessment at least for the first years, to gather sufficient information and experiences on this new type of building assessment. Also, the common understanding was that the SRI implementation would be very challenging in the Czech Republic because there is little interest in smart solutions.

Czech SRI-ENACT team is going to gather feedback from more stakeholders, especially from those who were not able to join the event. A series of interviews is planned to take place, as part of deliverable D2.3 - SRI-ENACT Methodology with national adaptations (2nd Release), engaging more stakeholders in the discussion on SRI national implementation.

As stated in the current SRI Czech landscape (D2.1), there is low demand for smart solutions in general and low interest in SRI. The co-creation workshop proves that the SRI implementation in Czech Republic will be a quite challenging task.

4.4. Romania

4.4.1. Executive Summary

On the 30th of May 2023, within the framework of the LIFE SRI-ENACT project, ISPE organised at its headquarters the first Stakeholder Liaison Group meeting on the implementation of the Smart Readiness Indicator (SRI) in Romania.

The meeting was organised in hybrid format and was attended by 15 participants, among which nine LG members comprising representatives of the Ministry of Development, Public Works and Administration, Order of Romanian Auditors, Institute for Multidisciplinary Scientific and Technological Research of the University Valahia of Târgoviște, Institute for Research and Development in Constructions, the Cluster for Promotion of nZEB, Bucharest Technical University of Construction, Mayoralties of Focșani and Petroșani.

After a short introduction into the objectives of the SRI-ENACT project and the research results on the existing framework and the actual national SRI landscape, the discussion was focused on tailoring the SRI methodology in the national specific context by considering the particularities of the regulations and current practices in Romania.

4.4.2. Presentations

The presentations that were delivered during the first part of the meeting were:

- Welcome and Introduction (Dr. Marian Dobrin, Head of Studies and Project Financing Unit, ISPE): presentation of the Stakeholder Liaison Group goals and agenda
- Presentation of SRI-ENACT project (Gloria Popescu, Communication Manager, ISPE): the general information related to the project and its main objectives were delivered
- Presentation of the current SRI landscape in Romania (Camelia Vasile, Project Manager, ISPE): the national current SRI landscape and the general information on SRI methodology and smart buildings were presented

4.4.3. Stakeholder Focus Group (Interactive discussion)

PARTICIPANTS

The core part of the meeting, namely the discussions with the invited experts, followed the presentations. The meeting was organised in hybrid format and was attended by the following 14 participants, among which nine LG members:

Table 9 Romanian co-creation workshop participants

Nr	Participant	Organisation	Presence
1	Catalin Lungu	Order of Auditors from Romania (OAER)	In person
2	Horia Petran	Cluster for Promotion of N-ZEB (PRO-NZEB)	In person
3	Dorin Leț	Institute for Multidisciplinary Scientific and Technological Research - University Valahia of Târgoviște (ICSTM-UVT)	In person
4	Cristian Petcu	Institute for Research and Development in Constructions (INCD URBAN INCERC)	In person
5	Anca Ginavar	Ministry of Development and Public Works (MDLPA)	Online
6	Elena Călărașu	Ministry of Development and Public Works (MDLPA)	Online
7	Florin Băltărețu	Bucharest Technical University of Construction (UTCB)	Online
8	Dan Cazaciuc	Mayorality of Focșani	Online
9	Adrian Imireanu	Mayorality of Focșani	Online
10	Marcel Oanță	Mayorality of Petroșani	Online
11	Marian Dobrin	ISPE Proiectare și Consultanță	In person
12	Dragoș Zachia	ISPE Proiectare și Consultanță	In person

13	Gloria Popescu	ISPE Proiectare și Consultanță	In person
14	Camelia Vasile	ISPE Proiectare și Consultanță	In person

The focus of the discussion was on a poll that gathered a series of predefined questions, aimed at collecting the insights of the participating experts. All questions were interactively discussed based on the received answers. The poll results and key highlights from the discussion are presented below.



Figure 10 Romanian co-creation workshop picture

IMPLEMENTATION PATHWAYS

The main comments in the conversation were:

- Last year, the Technical University of Construction (UTCB) was contracted by the Ministry of Development and Public Works (MDLPA) to revise the methodology used for the calculation of the energy performance of buildings. As part of this effort, the SRI indicator was incorporated into the performance certificate, in anticipation of potential future interest in assessing this indicator. At present, the evaluation of the SRI indicator is voluntary.
- A suggestion was made to search for Romanian terms that accurately translate the three English terms used to describe the calculation method of the SRI indicator. And so it was agreed on the Romanian terminology for “Technical domains”, “Impact criteria” and “Key functionalities”.

- Some experts considered that it would be convenient to link the SRI assessment into the standard EPC assessment as much information required for the SRI assessment are already included in the EPC, which will reduce both time and costs.
- Self-assessment is not reliable in terms of results because voluntary schemes have not been successful in Romania so far.

Question 1:

“Of the 6 potential implementation pathways proposed by the EU SRI methodology, which one(s) is/are considered to be the most suitable for the Romanian context and if none, is there a need to create a new methodology?”

- Linkage of the SRI to the EPC (2 responses)
- Linkage of the SRI to the construction of new buildings and major renovations of existing buildings (5 responses)
- Market-based voluntary scheme based on self-assessment and supported by on-line tools and 3rd party certified bodies for those willing to pay (0 responses)
- Market-based voluntary scheme based on self-assessment and supported by on-line tools and 3rd party certified bodies subsidized by the state/utilities, etc. (2 responses)
- Linkage to the Building Automation and Control Systems (BACS) and Technical Building Systems (TBS) deployment (1 response)
- Linkage to the deployment of smart meters (1 response)
- Combinations of the above (1 response)
- Need to develop a new one (0 response)

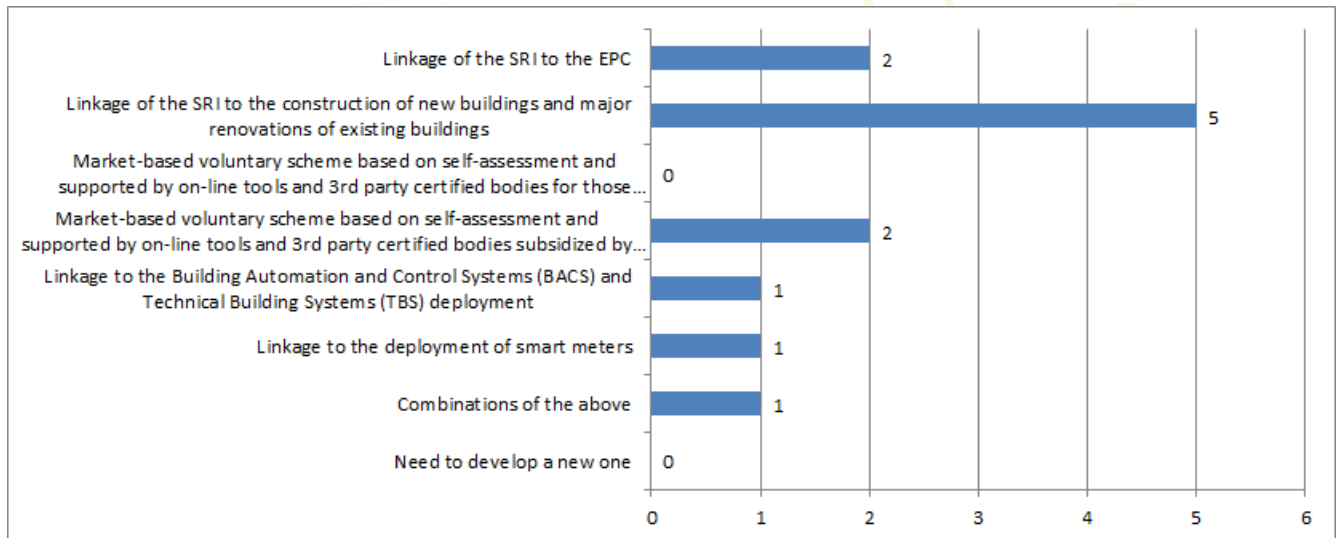


Figure 11 Romania - Answers on question regarding Implementation Pathways

Ultimately, the decision to link the SRI to new buildings and major renovations prevailed due to the belief that this approach would gain better acceptance initially. This approach was favoured because it recognises the importance of targeting a high SRI score for new buildings, ensuring their energy efficiency from the outset. Similarly, in the case of deep renovations, equipping buildings with smart technologies is crucial as it can result in energy savings of up to 30% compared to conventional buildings.

Question 2:

“Are there barriers/challenges for the implementation of SRI in Romania? If so, what are they?”

The experts identified quite a large number of challenges that the implementation of the SRI in Romania is likely to encounter, each with its own unique complexities:

- One of the challenges is building ownership. In Romania, many buildings have multiple owners or are collectively owned, making decision-making and consensus-building a complex task. Aligning the interests, responsibilities, and investment capabilities of all stakeholders involved in the decision-making process is crucial but often proves challenging. This can lead to delays or denial in implementing the SRI, as reaching a consensus on the necessary changes and investments can be arduous.
- Costs associated with implementing the SRI are also a concern. Retrofitting existing buildings to meet the SRI requirements can be financially burdensome, particularly for older or historically significant structures. The initial investment required for energy-efficient upgrades may deter building owners from undertaking such measures, slowing down the adoption rate of smart technologies.
- The human factor, including both specialists and beneficiaries, introduces its own set of challenges. The lack of adequately trained SRI experts can hinder the assessment and improvement of buildings' energy performance. Furthermore, beneficiaries, such as building owners and occupants, may lack awareness

and understanding of the benefits and importance of the SRI. This lack of awareness can create resistance to change and result in a low level of engagement and participation in the implementation process.

- Accessibility to financial instruments is another obstacle. Insufficient availability or limited accessibility to funding mechanisms can hinder building owners' ability to invest in energy efficient upgrades.
- A low level of understanding and awareness among stakeholders, including policymakers, building owners, and the general public, could be another obstacle. Without a comprehensive understanding of the benefits and significance of energy efficiency and smart technologies, stakeholders may underestimate the importance of the SRI or fail to allocate the necessary resources to its implementation.
- Inconsistencies that exist in the application of EPC regulations in Romania can hinder the accurate assessment of building's energy performance, which is important for the effective implementation of the SRI.
- Absence of clear policies and regulations that incentivise and guide the adoption of smart technologies can delay progress. Additionally, the absence of model buildings that showcase the benefits and feasibility of smart technologies impedes the understanding and replication of successful implementation practices. The EPBD and the Romanian legislation provide for the public buildings to be model buildings for energy performance, but no such buildings fulfil the requirement in Romania. Well promoted pilot projects to serve as model buildings could overcome this obstacle.
- Lack of a dedicated SRI methodology included within the general Mc 001-2022 methodology, which serves as a legal framework for energy performance evaluations in Romania, to ensure a standardised and reliable assessment process and of an evaluation tool specifically designed for the SRI is another obstacle.

POLICIES/MEASURES

Question 3:

“What policies/measures do we need in order to create a supportive regulatory context for the SRI implementation in Romania?”

- Amend the existing legislative framework (6 responses)
- Identify trigger points for the SRI implementation (3 responses)
- Link with other existing tools (e.g., EPC, energy audits, etc.) (7 responses)
- Other (1 response)

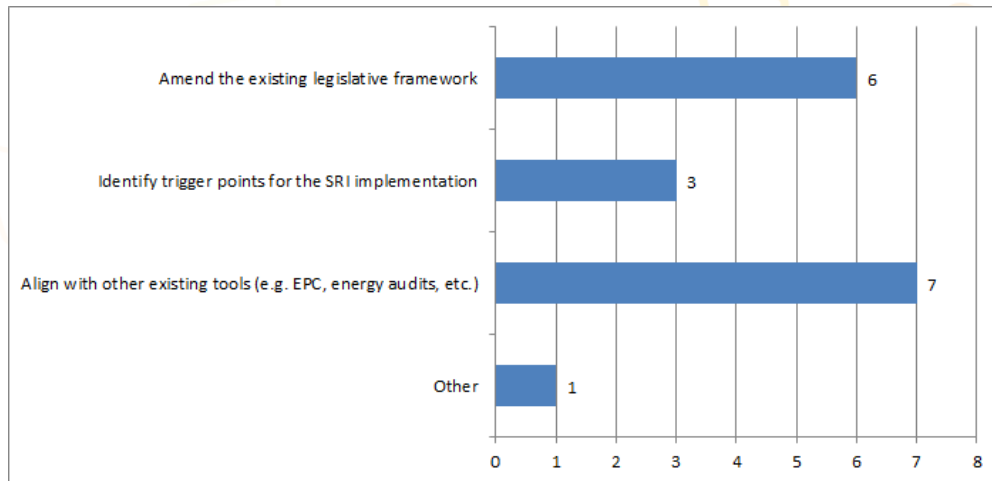


Figure 12 Romania - Answers on Policies/Measures

Suggestions made in this context were as follows:

- Implement a staged approach for the SRI evaluation method, gradually increasing the complexity of the assessment over time. This would allow for a smooth transition and enable stakeholders to adapt to the requirements of the SRI gradually.
- Incorporate the provisions of the European Directive on Energy Performance of Buildings into Law 372/2005, specifically highlighting the mandatory evaluation of the SRI in certain situations. These situations should include large existing non-residential buildings, major renovations of existing residential buildings, and new constructions.
- Include the SRI evaluation methodology as an annex in the existing Mc 001-2022 methodology for energy performance evaluation. This integration ensures that the SRI methodology is legally recognised and aligned with existing evaluation procedures.
- Integrate the current building logbook, which consolidates data on the energy performance and efficiency actions taken, with the building renovation passport within a digital repository.
- Develop fiscal facility plans at the national and local levels to incentivise the implementation of the SRI and energy-efficient renovations. These plans can include tax credits, grants, or subsidies for building owners who meet SRI requirements or undertake significant energy efficient upgrades.
- Create a national public information plan to raise awareness about the advantages and benefits of the SRI. This plan should include educational campaigns, workshops, and online resources to inform stakeholders about the importance of energy efficiency, smart technologies, and the positive impact of the SRI on building performance and occupant comfort.

METHODS

The fourth inquiry revolved around the SRI calculation method. Figure 133 illustrates the poll results, where participants were given the option to choose more than one answer.

Question 4:

“Which of the three potential SRI evaluation methods do you consider most applicable in the Romanian context?”

- Method A = Evaluation by a simplified method (check list), with focus on small residential and non-residential buildings ≤ 500 sqm (3 responses)
- Method B = Detailed evaluation by an SRI expert, with focus on non-residential buildings (6 responses)
- Method C = Evaluation by metering/measurement of actual performance, with focus on residential and non-residential buildings (1 response)

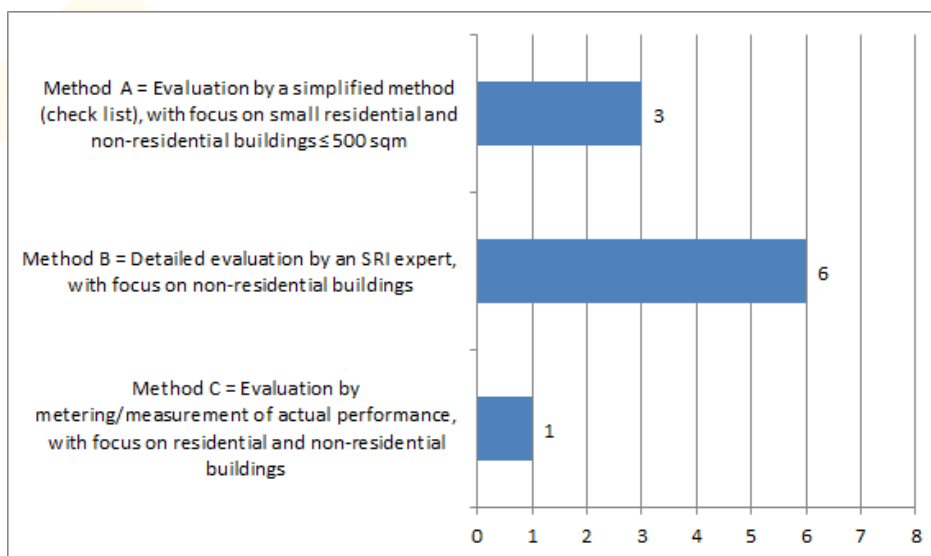


Figure 133 Romania - Answers on the Method for calculating the SRI.

The main comments in the conversation that followed were the following:

- Implement a staged approach for the SRI evaluation method, gradually increasing the complexity of the assessment over time. Method A could be initially chosen, while later on, it should be moved to Method B and even aimed towards Method C.
- It is important to take into account the specific market in which the SRI is implemented and how effectively the market can embrace this methodology. For residential buildings, a simple analysis in the form of a checklist (Method A) can be used, while for large non-residential buildings (that are more complex structures), where both interest and investment potential are available, a more comprehensive analysis (Method B) is recommended.

- The objective is to eventually employ Method C, but it is important to acknowledge that currently there is no methodology available for practical implementation.

Finally, in light of the initial question discussion favouring the association of the SRI with new buildings and major renovations, Method B has been regarded as the most realistic approach. However, Method A remains as a viable option exclusively for residential buildings, including major renovations of large condominium buildings given the diverse ownership of individual apartments within such structures.

TECHNICAL DOMAINS

The focus of the following question revolved around identifying the technical domains that should receive priority during the pilot implementation. Figure 14 displays the outcomes of the poll, where participants had the freedom to select multiple answers.

Question 5:

“Each SRI method includes a different set of smart-ready services, clustered in several domains (e.g., heating, cooling, domestic hot water, etc.). Which of these domains should be laid emphasis upon, in the Romanian context?”

- Heating (7 responses)
- Cooling (6 responses)
- Domestic hot water (5 responses)
- Ventilation (5 responses)
- Lighting (5 responses)
- Dynamic building envelope (4 responses)
- Electricity (6 responses)
- Electric vehicle charging (5 responses)
- Monitoring & control (5 responses)

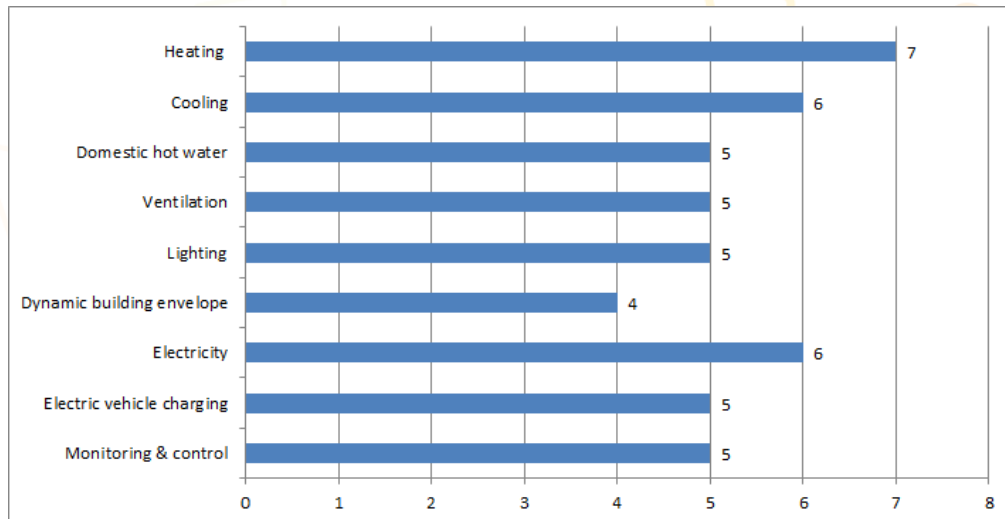


Figure 14 Romania - Answers on selection of technical domains for the pilot phase

During the discussion the experts agreed that all technical domains are important and should be considered in the pilot phase. However, the poll results indicated that heating was considered particularly important for evaluation through the SRI closely followed by cooling and electricity.

WEIGHTINGS

The next question focused on the adjustment of weightings. Figure 15 displays the outcomes of the poll.

Question 6:

“At what level do you think the tailoring of the weightings included in the methodological framework of the SRI calculation, should be carried out?”

- Climate zone - distinction by building type (residential, non-residential) (7 responses)
- Climate zone - no distinction by building type (residential, non-residential) (0 responses)
- Other (0 responses)

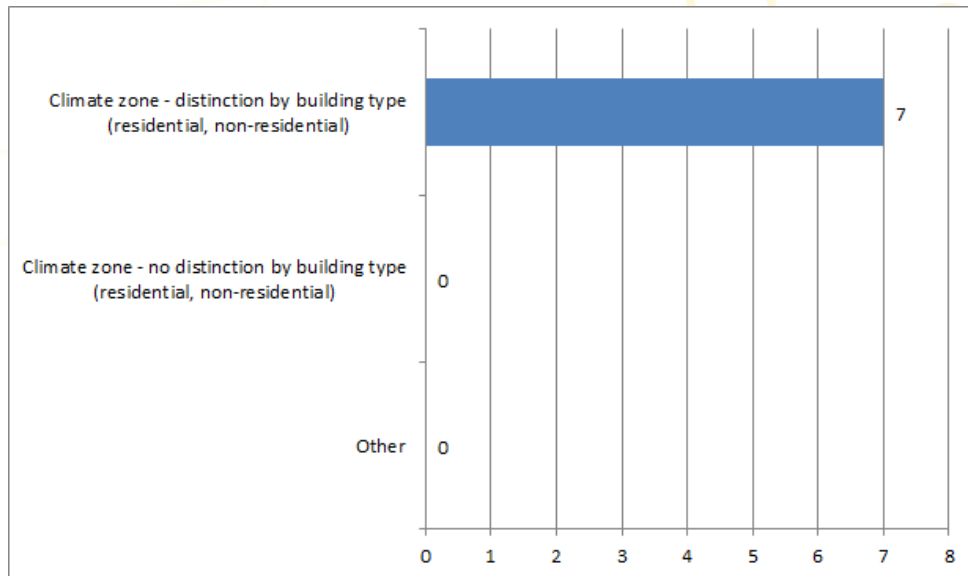


Figure 15 Romania - Answers on preference for weighting adjustment

The experts considered that adjusting the weightings according to both climate zones and building types should be used. However, they emphasized the need for further analysis and highlighted the importance of focusing on adjusting weightings using documented studies specifically conducted for different types of buildings within each specific climate zone.

BUILDING TYPES

Another question concerned the type of buildings that should be tested during the pilot phase. Figure 16 displays the outcomes of the poll. Participants had the freedom to select multiple answers.

Question 7:

“Which type of buildings do you consider most suitable to be used as pilots for the implementation of SRI in Romania?”

- Multi-family residential buildings (6 responses)
- Office buildings (6 responses)
- Educational buildings (7 responses)
- Public health buildings (6 responses)
- Commercial buildings, other than office buildings (4 responses)
- Hotels (4 responses)
- Single-family houses (4 responses)
- Other (1 response)

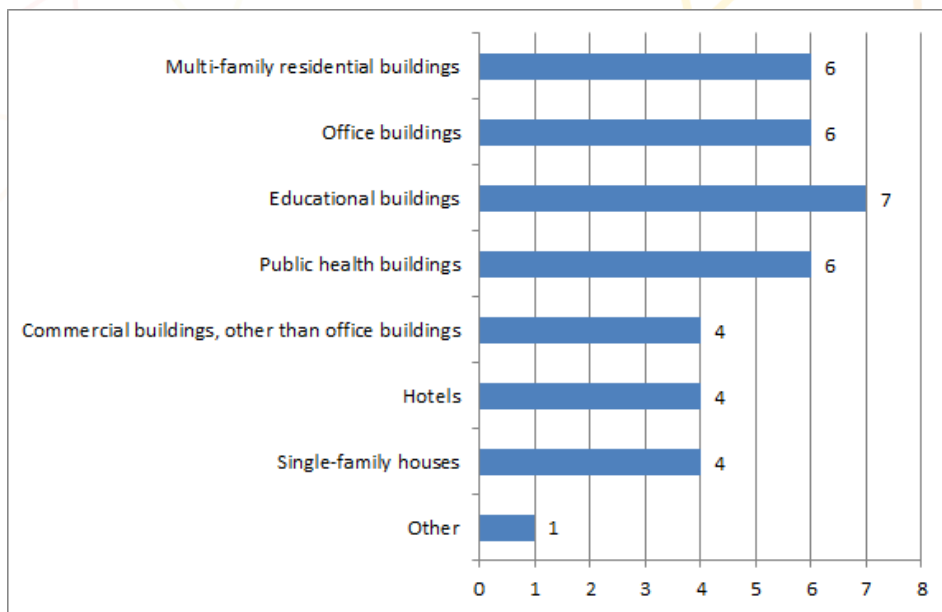


Figure 16 Romania - Answers on the selection of type of buildings for the pilot phase

Main comments on the results of the poll:

- All the buildings mentioned in the poll are deemed important and should be included in the pilot testing phase. However, having in mind that as of 2026 SRI is required for large non-residential buildings, it is advisable to prioritise the initial selection of public buildings for analysis. This approach prioritisation allows for valuable insights and learnings to be gained from these buildings before broader implementation takes place.
- The representatives of municipalities in the Liaison Group expressed strong support for the inclusion of hospitals and educational buildings in the selection process. This recommendation stems from the fact that more than 50% of a municipality's energy costs are allocated to these two sectors.
- The Technical Construction University of Bucharest (UTCB) was proposed as one of the buildings to be considered for the pilot testing phase.
- It was recommended that the selected buildings represent all five climatic zones of the country. This will allow for a more accurate assessment of the SRI's performance in different climate conditions.

The poll highlighted buildings in the education sector as the most suitable to be selected for the initial test phase, followed by office buildings, healthcare sector buildings, and residential buildings in a secondary phase.

SRI TRAINING

The eighth question regarded the profile of SRI assessors. Figure 17 displays the outcomes of the poll. Participants had the freedom to select multiple answers.

Question 8:

“Which type of professionals from the indicative list below do you consider to be the most suitable to become certified SRI experts?”

- Energy auditors for buildings (7 responses)
- Construction engineers (1 response)
- Installation engineers (3 responses)
- Power engineers (2 responses)
- Energy managers (3 responses)
- Local authorities (0 responses)
- Utilities (0 responses)
- ESCO (3 responses)
- Building owners/users (0 responses)
- Other qualified construction professionals (0 responses)
- Architects (0 response)
- Other (1 response)

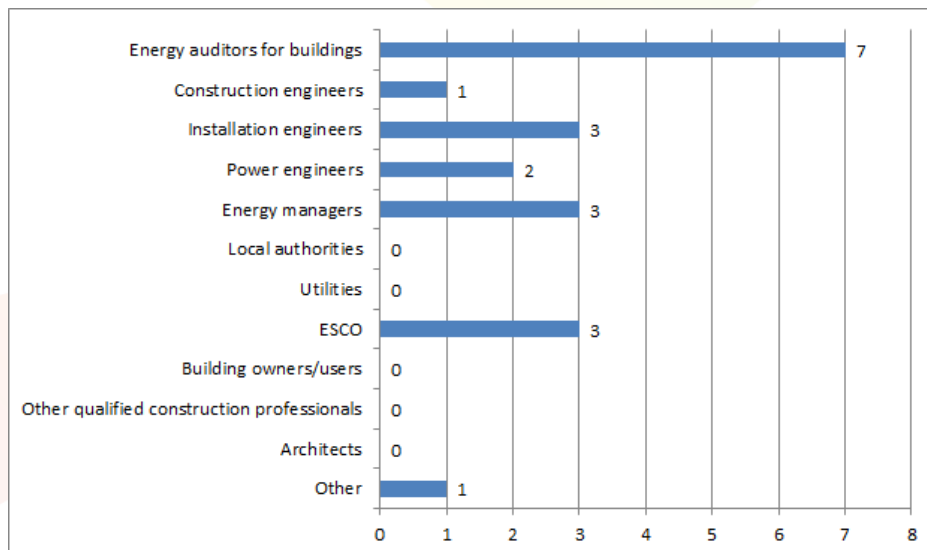


Figure 17 Romania - Answers on SRI Training

Main comments in the conversation:

- The professionals required can vary depending on the method employed. When utilising Method A, different types of professionals can perform evaluations after undergoing a brief training on the specific

method. An example of such professionals includes installation engineers or energy managers. For Method B, mostly energy auditors for buildings are suitable to become SRI experts.

- ESCO employees were also mentioned in the discussion. It's known that SRI provides a framework for evaluating and measuring the smart readiness of buildings, considering factors such as digitalisation, energy management systems, and renewable energy integration. Obtaining expertise in SRI could be important for ESCO because it can be useful when developing business models and making investment decisions related to energy efficiency and renewable energy integration projects.
- The management of the professional training courses in SRI should be overseen by Ministry of Development, Public Works and Administration. To ensure the effectiveness of the training, a professional training provider with expertise in the field should be selected to deliver the courses.
- The duration of the training can vary depending on the target audience. If the training is aimed at energy auditors or installation engineers, a short-term duration course of 10-12 hours may be sufficient to cover the essential concepts and practical applications of SRI. However, if the training is intended for other types of professionals, who only have a moderate level of relevant knowledge in this field, a longer duration, even at the university level or in the form of a Masters program, may be required to provide them with a more comprehensive understanding of SRI.

The conclusion was that energy auditors for buildings are the most suitable professionals who can be certified as SRI experts. These auditors have diverse backgrounds in fields such as construction and installations, which provide them with a comprehensive understanding of building systems and energy efficiency. Their specific training in energy auditing makes them well-qualified to assess the smart readiness of buildings. Their existing knowledge and expertise can serve as a solid foundation for additional training on SRI, allowing them to become proficient in evaluating the technological and digital aspects of buildings in relation to energy efficiency and sustainability.

FINANCING SCHEMES

Main comments in this context were:

- It is essential to establish a financing scheme aimed at fostering the implementation process of the SRI. This program should fully finance the evaluation of the SRI, as well as partially support the adoption of smart technologies.
- A successful implementation of the SRI requires a good promotional campaign right from the start. It is essential to raise awareness and emphasize the importance and significance of this process. Without widespread awareness and understanding, the implementation is unlikely to achieve its intended goals.

- With the decision to implement the SRI at the European level, it is anticipated that financing opportunities linked to the SRI assessment from the European Union will emerge.

4.4.4. Comparing the current SRI landscape in Romania with the insights of the stakeholder focus group

In this section the current landscape of the SRI in Romania as it was described in D2.1 based on literature review, is compared with the outcomes of the stakeholder discussions during the initial Romanian co-creation workshop. Table 10 briefly presents the alignment levels between the information provided in D2.1 and the stakeholders' opinions on the specific thematic areas. A number of interviews with more various stakeholders are planned to take place, which will lead to subsequently integrating an additional comparison level into this table.

With regard to the SRI implementation pathway, considering that in Romania EPCs are mandatory for all buildings that are constructed, sold, or leased, in D2.1 it was estimated that the best way to ensure widespread market adoption of the SRI would be to combine the SRI with the EPC, by creating a common assessment framework within the EPC. The rationale behind this idea was that the SRI will enhance the functionalities of the existing EPC system leading to costs reduction and providing complementary information. However, this is only partially aligned with the opinions of the stakeholders involved in the Liaison Group, which selected the linkage with the EPC as their second option. Their preferred option was linking the SRI to new buildings and major renovations. This was based on the belief that it is important to target a high SRI score for new buildings and ensure their energy efficiency right from the beginning and that this approach will have a higher level of acceptance.

When discussing about training SRI experts both the information contained in D2.1 and the stakeholders' opinion are aligned and lead to the conclusion that energy auditors for buildings are the most suitable professionals who can become certified SRI assessors.

A similar pattern of alignment was observed when discussing the evaluation method for the SRI and Method B has been identified as the most realistic solution.

Following the selection of SRI linked with EPC as the best implementation pathway, in D2.1 it was considered that SRI should be applied in all building types that are required to issue an EPC (e.g., new construction, major renovation, selling, renting, etc.). This is only partially aligned with the liaison group members' opinion as they were mostly interested in building from the education sector, followed by building from the public health sector, offices, and multi-family residential buildings on an equal footing.

As regards the last two thematic areas in Table 10, namely emphasised technical domains and weightings’ tailoring, D2.1 does not specifically address these discussion points. Therefore, no conclusion regarding the alignment of D2.1 with the Liaison group can be extracted. In this case, the most appropriate approach is to rely on the insights provided by the stakeholders involved in the liaison group as a guiding direction.

Table 10 Summary of the key differences between the current SRI landscape in Romania as presented in D2.1, and the insights drawn from the stakeholder focus group

Thematic area	Current landscape (D2.1)	Stakeholder engagement	Alignment
<i>SRI implementation pathway</i>	Linkage to the EPCs	1. Linkage to the construction of new buildings and major renovations of existing buildings 2. Linkage to the EPCs	Partial
<i>Trained SRI experts</i>	Energy auditors for buildings	Energy auditors for buildings	Total
<i>SRI evaluation method</i>	Method B	Method B	Total
<i>Pilot building types</i>	All building types that are required to issue an EPC	1. Education 2. Public health 3. Offices 4. Multi-family residential	Partial
<i>Emphasized technical domains</i>	Not discussed	1. Heating 2. Cooling 3. Electricity	N/A
<i>Weightings’ tailoring</i>	Not discussed	Per climate zone and per type of buildings (residential, non-residential)	N/A

4.4.5. Conclusions and next steps

The key conclusions resulted from the focus group discussions highlighted that SRI assessment should be used when constructing new buildings and for large renovations. Focus should be placed on non-residential buildings, especially public buildings. The topic of training and certifications needs further clarifications, and one possible framework could be based on the training process for energy auditors for buildings. Finally, without widespread awareness and understanding, the SRI implementation is unlikely to achieve its intended goals.

The next steps for the national stakeholder’s engagement include:

- Bilateral meetings with MDLPA to persuade them to officially support the implementation of SRI in the building sector
- Communication with the sister project SMART², for the support of the MDLPA, so Romania can participate in the pilot phase
- Continue the dialogue with the RO-LG members for the following meetings
- Structured interviews with key stakeholders to collect targeted input on the SRI adoption and adaptation in Romania.

4.5. Greece

4.5.1. Executive Summary

SingularLogic, in collaboration with the Decision Support Systems Laboratory (DSS) of the School of Electrical and Computer Engineering, NTUA, organised on May 4th at the Intercontinental Athenaeum Athens hotel, within the framework of the LIFE SRI-ENACT European project, a conference on the implementation of the Smart Readiness Indicator (SRI) within the building stock in Greece.

A group of 15 experts participated in the first section of the conference ("Stakeholder Liaison Group Session"), comprising representatives of the Ministry of Energy and Environment, the Technical Chamber of Greece, energy consultants and policymakers, representatives of construction companies, a network of municipalities, utilities, managers of relevant European projects, research centres and universities. The section started with a presentation of the SRI-ENACT's project research results on the existing framework and the conclusions of the SRI feasibility study that was conducted in Greece. Then, a focused discussion followed with the aim of co-creating a National Methodological Framework for the adoption of the Smart Readiness Indicator in Greece, as well as the selection of building types for its pilot application.

In the second section ("Stakeholder Liaison Group Launch Event"), which was open to the general public, the participants had the opportunity to network with other organisations related to the implementation of the SRI in Greece, but also to be informed about the conclusions of the discussion of the first section as well as for the four European projects of the SRI Cluster - SRI-ENACT, easySRI, SRI2MARKET and SMART² - which are financed by the LIFE Programme.

4.5.2. Presentations

During the first section, the following presentations took place:

- Welcome and Introduction (Dr. Stamatia Rizou, R&D Manager SingularLogic): Short presentation of the Stakeholder Liaison Group goals and agenda
- Presentation of the current SRI landscape in Greece (Apostolis Arsenopoulos, Researcher, DSS Lab, ICCS NTUA)
- Presentation of the SRI feasibility study in Greece (Dr. George Xexakis, Senior Researcher Holistic)

4.5.3. PART I – Stakeholder Focus Group (Interactive discussion)

PARTICIPANTS

After the presentations, a focused discussion followed, with the participation of 15 experts. The participants in the discussion were:

Table 11 Greek co-creation workshop participants

Nr	Participant	Organisation
1	Vasiliki Sita	Ministry of Energy and Environment
2	Alexandros Adam	Center for Renewable Energy Sources and Saving (CRES)
3	Haris Doukas	NTUA, TEE
4	George Xexakis	Holistic SA (Consulting services) - SRI ENACT Advisory Board
5	Niki Spyridaki	GIZ
6	George Stavrodimos	Board Member of "Association of Environmental Engineers"
7	Anastasia Spanou	LDK Consultants
8	Dimitrios Papaioannou	Ballian Techniki SA
9	Lampros Doulos	ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers in Greece)
10	Ioannis Georgizas	Cities Network "SUSTAINABLE CITY"
11	Dimitris Bibikas	ZENIT SA
12	Dimitris Athanasiou	IEECP (SRI2MARKET)
13	Dimos Ioannidis	CERTH (easySRI)

14	Aphrodite Zamanidou	IsZEB (SMART ²)
15	George Fakiridis	Sense One Technologies
16	Vangelis Marinakis	NTUA
17	Apostolis Arsenopoulos	NTUA (SRI-ENACT)
18	Dimitris Stratakos	NTUA (SRI-ENACT)
19	George Lagogiannis	SingularLogic (SRI-ENACT)
20	Nikos Nikoloudakis	SingularLogic (SRI-ENACT)
21	Stamatia Rizou	SingularLogic (SRI-ENACT)



Figure 18 Greek co-creation workshop picture

The discussion was structured around six predetermined questions. For each question, the discussion moderators presented one online poll through Slido digital platform, with the aim of directly collecting the opinion of all 15 participants. An interactive discussion followed based on the results of the poll. Below, we analyse each question separately and draw some conclusions:

IMPLEMENTATION PATHWAYS

The first question concerned the SRI implementation pathways and specifically the “trigger point” to calculate the SRI. Before the online poll, the pros and cons of each option were presented, as they were analysed in the feasibility study. The results of the poll are shown in Figure 19. Participants were allowed to select more than one answer.

Question:

“According to the EU SRI methodology, there are 5 potential implementation pathways. Which one(s) is/are considered to be the most suitable for the Greek context?”

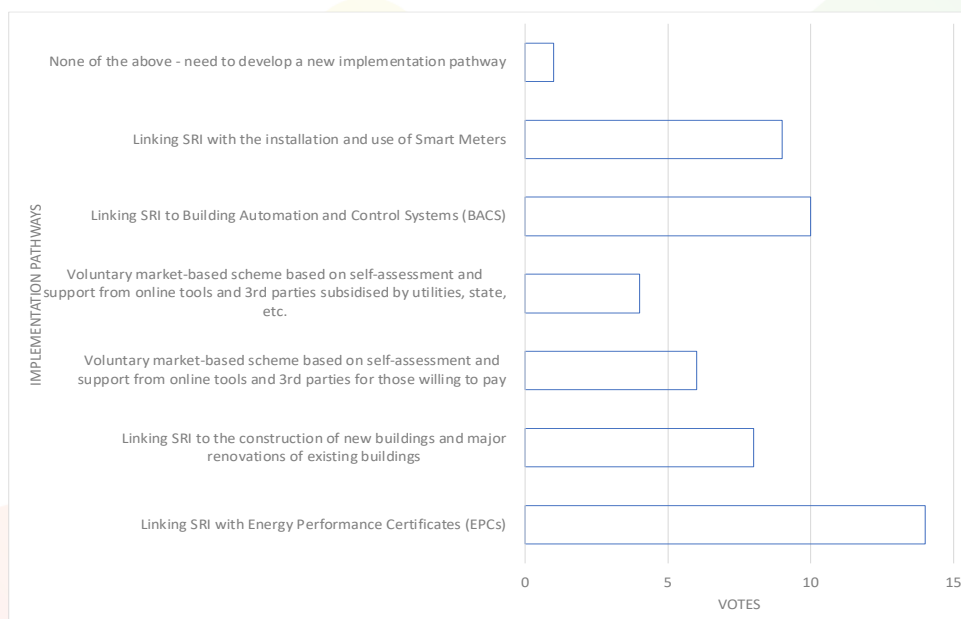


Figure 19 Greece - Answers on Implementation Pathways

The main comments in the conversation that followed were the following:

- SRI indicator should also be accompanied by a certification in the tertiary buildings, following a similar process that is applied for professional buildings. In this way, the SRI indicator could have a similar certification as the LEED, BREEAM, etc. schemes, and be updated on an annual basis.

- There are smart buildings of the tertiary sector whose users lack adequate knowledge and background on how to use them properly. SRI captures the ability of the building to adapt to the needs of the occupants and the grid, but it is important that the users of the buildings understand the use of automations. For this purpose, the calculation of the SRI should be accompanied (where necessary) by an information campaign for the users of the buildings on how they can take advantage of the smart readiness.
- There have been some concerns about the possibility of interlinking SRI with EPC, since the goals of SRI are different and mainly related to the well-being of the users and providing flexibility to the grid. During the discussion, it was clarified that the final option “Linking SRI with Energy Performance Certificates” does not refer to the merging of the two methodologies, but it is more related to the actual timing of SRI certificate issuance.

Some suggestions for the future version/use of SRI are:

- Proposal: A form of green invoice which certifies the utility for the existence of smartness in the building (residential).
- Proposal: Interfacing with the new, dynamic EPCs (proposed in the 2nd section of the workshop, during plenary).
- Suggestion: On a smaller scale, a pilot could be tested in a Living lab format, at houses with installed smart systems and in a way that will be based on an SRI utility-based mechanism. However, the interconnection with equipment, sensors, meters, etc. on a larger scale is almost impossible due to the problematic interoperability issues.

Conclusion

The option regarding EPC interface is the prevailing one. Some main reasons mentioned are the following:

- i) As it emerged from the feasibility study, this option involves more existing buildings than new buildings or renovations (second option).
- ii) There must be a control mechanism, for example all information should pass through a platform (as in the case of EPCs), so it would facilitate a trigger connection.
- iii) Self-assessment is not reliable in terms of results. In order to have reliability, assessments must be conducted by certified energy experts as in the case of EPCs.
- iv) The connection with control systems and meters is interesting, but so far it is not clear the framework for method C that will be able to use real data from sensors, so for now it is not among the priorities for the pilot phase.

TRAINING / CERTIFICATION

The second question concerned the profile of SRI assessors. The results of the poll are shown in Figure 20. Participants were allowed to select more than one answer.

Question

“Which type/s of organisations/professionals from the indicative list below do you consider to be the most suitable to be certified as SRI experts ?”

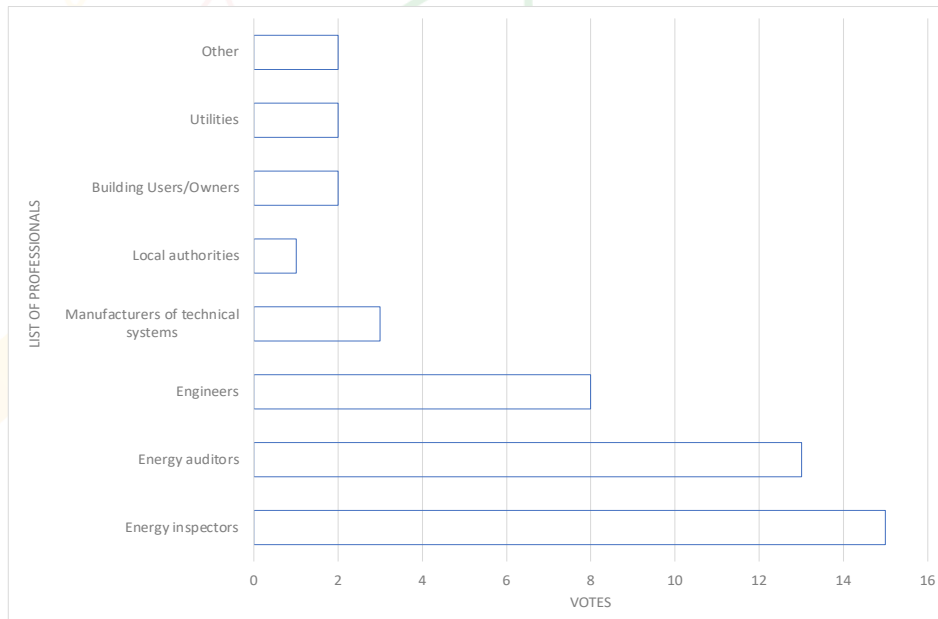


Figure 20 Greece - Answers on Training / Certification

The main comments in the conversation that followed were the following:

- The SRIs experts can be inspectors, auditors or engineers, who will receive training on SRI and some kind of certification.
- The engineers (potentially SRI experts) may be employees of Energy Service Companies (ESCOs) or utilities or even partners in real estate offices.
- A thought was expressed as to whether the group of potential SRI experts could be expanded, with energy efficiency experts, specialised in building simulations and energy, who, however, have not been educated in Technical University, and thus cannot become energy inspectors. However, as stated by a Technical Chamber’s representative at the open event, such an approach contradicts the country’s standard policy where engineers are responsible for the design of buildings.
- Regarding the organisation that will run the trainings, one proposal is for the Technical Chamber and Centres for Vocational Training (as is done with the inspectors). According to the comment of the representative of the Ministry of Energy and Environment, the Ministry is moving towards the logic of

energy audits with certifications through trainings (Train the Trainers) and the possibility for more than one organisation to get the certification and become SRI auditors. However, there is no decision at this stage and further consultation with the stakeholders is needed to decide on the training scheme.

Conclusion

The approach for training SRI experts can follow the logic of energy inspectors trainings. It would be useful to plan trainings for certified energy inspectors (once our country enters the pilot phase) to clarify the details of the training model for SRI experts.

METHODS

The third question concerned the method for calculating the SRI. The results of the poll are shown in Figure 21. Participants were allowed to select more than one answer.

Question

“According to the EU technical study, there are 3 potential SRI evaluation methods. Which one(s) do you consider most applicable in the Greek context?”

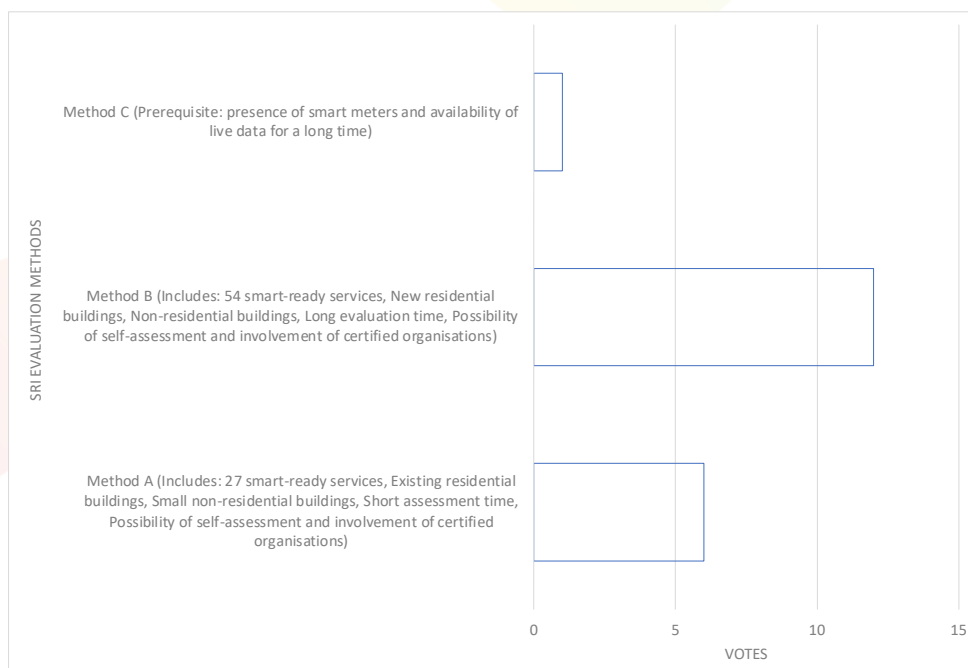


Figure 21 Greece - Answers on the Method for calculating the SRI

The main comments in the conversation that followed were the following:

- Method B is the most realistic method and is expected to have the most reliable results at this stage.
- Method C (Test phase with live data) is the vision, but there is currently no well-established methodology and it cannot be used practically, except as a research topic.
- A concern was expressed that since for large buildings the SRI assessment can last up to 0.5-1 day, the workload is increased for the energy inspectors, which in practice may raise some difficulties, especially if both SRI and EPC certifications are required by the energy inspector at the same time.

Conclusion

Method B is considered the most appropriate at this stage, in order to draw some conclusions from the initial evaluations of buildings in the country. However, because it is more time-consuming, data should be collected during the pilot phase, to clarify the estimated assessment time and workload for energy inspectors.

BUILDING TYPES

The fourth question was about the type of buildings that should be included during the pilot phase. The results of the poll are shown in Figure 22. Participants were allowed to select more than one answer.

Question

“Which building type(s) do you consider most suitable to be used as pilot(s) for the implementation of SRI in the Greek context?”

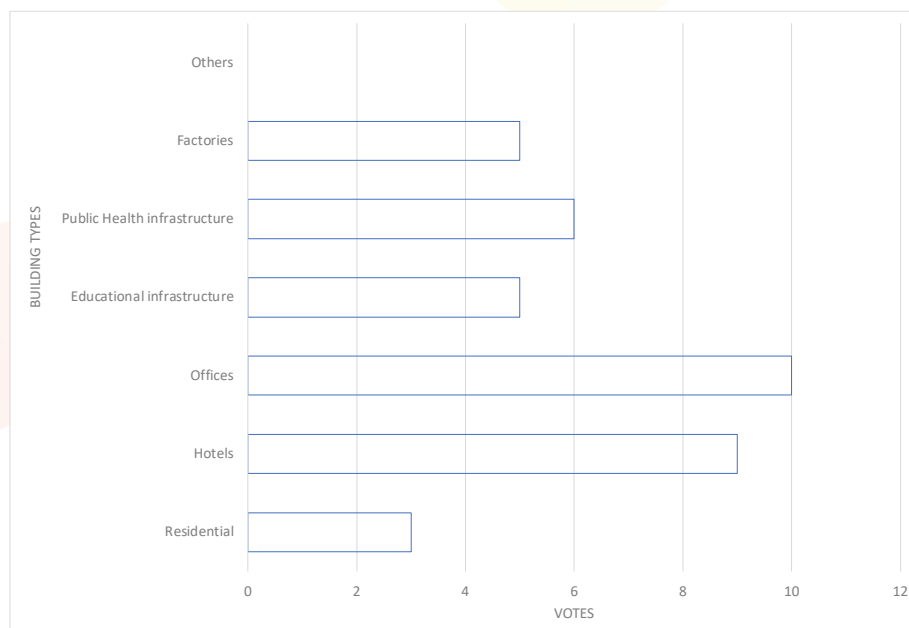


Figure 22 Greece - Selection of type of buildings for the pilot phase

The main comments in the conversation that followed were the following:

- Since the SRI Indicator is expected to become mandatory for large buildings in the tertiary sector from 2026, it makes sense to focus on large buildings, with the aim of having some first insights, and then continue to residential.
- However, a problem with large buildings is that the inspectors do not know which energy class they are in, as LEED, BREEAM, etc. certifications that usually take place in such buildings are more important than EPCs. EPC is usually issued for residential buildings. In commercial buildings, other systems and certifications are required, such as LEED, with silver, platinum etc. certifications. If this type of buildings is chosen as a priority, it will be useful to link these certifications with the SRI.
- An additional concern was raised regarding whether the SRI Indicator is useful in an old building that may be in poor condition. According to the project partners, old buildings could be smart ready or increase smart readiness, and therefore, it will be useful to include them in the pilot phase.

Conclusion

The pilot application could be targeted in the large buildings of the tertiary sector first and then, residential buildings could follow.

DOMAINS

The fifth question concerned the domains (based on the SRI methodology) where emphasis should be placed during the pilot implementation. The results of the poll are shown in Figure 23. Participants were allowed to select more than one answer.

Question

“Each SRI method includes a different set of smart-ready services, clustered in several domains (e.g., heating, cooling, domestic hot water, etc.). Which of these domains should be laid emphasis upon, in the Greek context?”

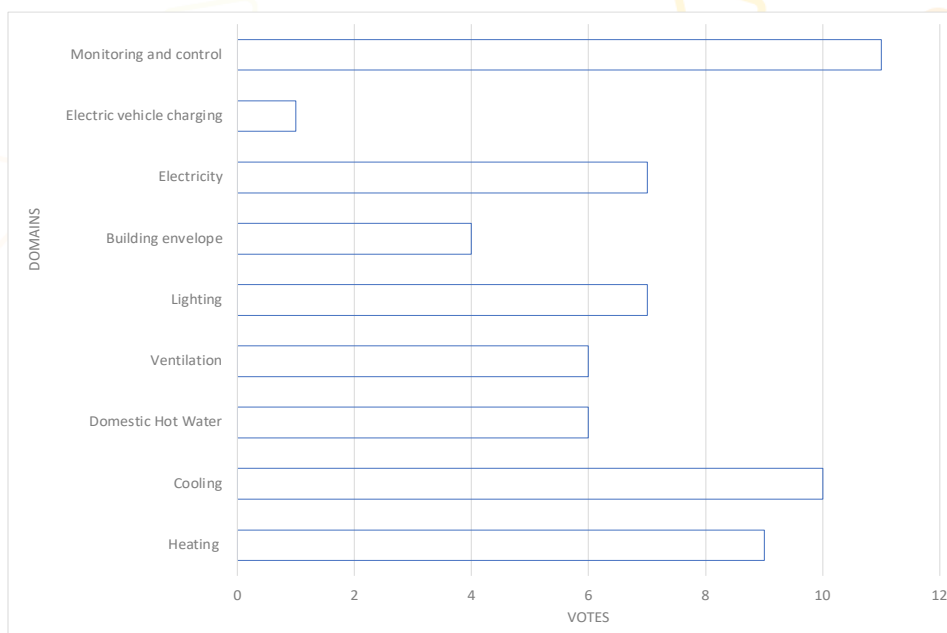


Figure 23 Greece – Selection of domains for the pilot phase

The main comments in the conversation that followed were the following:

- EPCs cover some domains to a certain extent, however the emphasis in SRI is on smart readiness and not energy efficiency.
- It was emphasised that Lighting is important as a field because it is related to efficiency and well-being of users as well as lighting spectrums. For example, as of 2017, there are relevant criteria and restrictions in hospitals regarding lighting.

Conclusion

The areas of cooling, heating and monitoring control are considered particularly important for their evaluation through the SRI Indicator. However, it is useful to emphasise other areas such as lighting that are important to users.

WEIGHTINGS

The sixth question concerned the adjustment of weightings based on the SRI methodology. The results of the poll are shown in Figure 24. Participants were allowed to select more than one answer.

Question

“At what level do you think the tailoring of the weightings included in the methodological framework of the SRI calculation, should be carried out?”

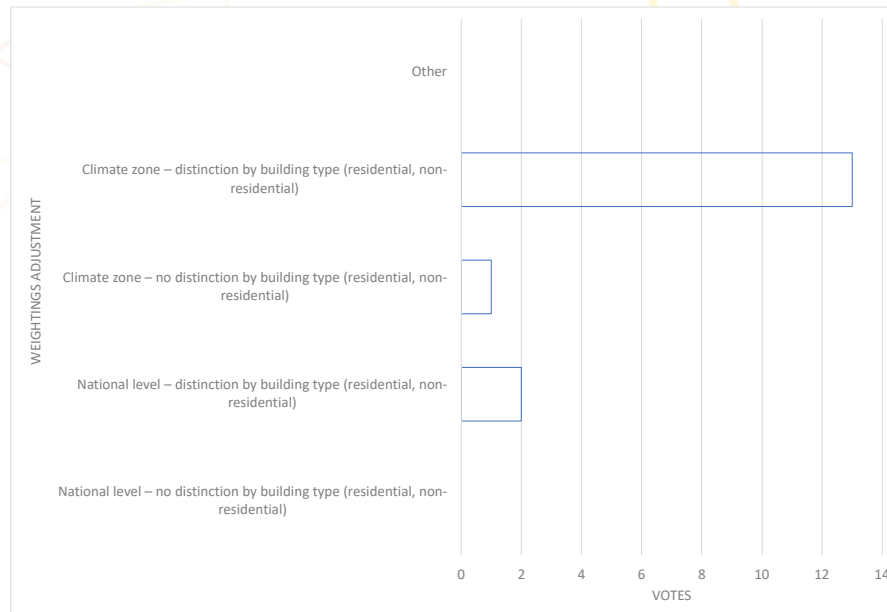


Figure 24 Greece - Preference for weighting adjustment

The main comment in the conversation that followed was the following:

- In general, it would be very useful to adjust the weightings by climate zone and type of building, as for EPCs. However, based on the feasibility study, there is not enough evidence to document the adjustment of weightings covering all building types and climate zones, so further analyses should be carried out in this direction.

Conclusion

Emphasis should be placed on further adjusting the weightings of the methodology based on documented studies for all types of buildings per climate zone.

POLICIES & FINANCING SCHEMES

After the focused discussion based on the six questions presented, there was a short discussion regarding the policies and financial instruments that may be related to the SRI Indicator.

The key comments in this context were as follows:

- It should be clear that the SRI Indicator is not directly proportional to the energy efficiency of a building, but it can be used to provide an incentive for the integration of smart technologies that in turn trigger energy savings.
- Resilience criteria for SRI were not covered by the Commission within their technical studies so far. European Commission is now issuing some resilience guidelines, which are among the criteria for funding.

- The relationship between vulnerability and Smart Readiness Indicator needs attention, especially in terms of management. We need realistic systems that are connected to reality. The problem of energy poverty should be also taken seriously into account.
- Potential funding schemes linked to the SRI assessment for a grant could be drawn up. However, a thorough documentation is needed as to the direction in which such a financial instrument will contribute, given that technological upgrading is not the main objective itself, but should be linked to potential energy savings.
- It is important to strengthen the role of banks in a potential financing program quite similar to this of the green loans, e.g., for the purchase of smart meters, etc.

4.5.4. PART II - Stakeholder Liaison Group Launch Event

The second section started with two keynote speeches from Mrs. Vasiliki Sita, Director of Energy Policy and Efficiency of the Greek Ministry of Energy and Environment and Mr. Nikolaos Milis, 1st Vice President of the Technical Chamber of Greece.



Figure 25 Greek Stakeholder Liaison Group meeting

Then, the following presentations from the SRI projects currently running as well in Greece, took place:

- SRI-ENACT project "Co-creating Tools and Services for Smart Readiness Indicator Uptake", Dr. Stamatia Rizou, R&D Manager SingularLogic
- SRI2MARKET Project "Paving the way for the adoption of the SRI into national regulation and market", Sotiris Papadelis, Director at HEBES Intelligence

- Smart² Project “Smart tools for smart buildings: Enhancing the intelligence of buildings in Europe”, Afroditi Zamanidou, EU Project Manager at IsZEB DIH
- easySRI Project “Improving & demonstrating the potential of SRI”, Dr. Dimosthenis Ioannidis, Senior Researcher at ITI CERTH

An open discussion with the attendees followed. Key comments have been incorporated in Chapter 4.5.3.

The workshop came to its closure with a networking event at the venue lobby, where participants had the opportunity to interact in a less formal manner and exchange their opinions and vision on the future of SRI in Greece.

4.5.5. Comparing the current SRI landscape in Greece with the insights of the stakeholder focus group

This section aims at comparing the current SRI landscape in Greece, as presented in D2.1 “SRI Current Landscape Report and Stakeholder Engagement Plan” based on literature review and argued estimations made by the Greek partners of the SRI-ENACT project, with the insights gained from the stakeholder focus group that took place with an eye to calibrating the original approach based on a more market-based view. Table 12 summarises the alignment levels between what is described in D2.1 and the stakeholder group that participated in the co-creation activity, broken down per thematic area. It should be pinpointed that this table will be further enhanced in the near future, to incorporate an additional layer of comparison in terms of alignment, following several rounds of interviews with a more diverse set of stakeholders, that are about to take place.

First and foremost, with regard to the SRI implementation pathway, things seem to be partially aligned between the approach described within D2.1 and the insights elicited from the stakeholder focus group. To specify, drawing from the deliverable D2.1, EPC is considered to be among the most well-established schemes in Europe, with high coverage rates both in the residential and in the tertiary sector. Given that in Greece it is practically mandatory to issue a new EPC in case of a new construction, major renovation, selling or renting of a building, there is no reason for the country to deviate from the aforementioned European figures as to the high coverage rate (also supported by available national figures on the topic). Having this as the main driver and a key argument in favour, an EPC-driven pathway in Greece has been proposed to accommodate the SRI scheme. This is in line with the perceived option of the engaged stakeholder group, when the respective question was put in the table, with the linkage of the SRI to the EPCs far outranking the second option. This is where the differentiations begin to emerge, since, based on the Greek partners of the SRI-ENACT project who were responsible for putting together the information on the current SRI landscape in Greece, a parallel market-driven scheme, based on self-assessments could be

worth-exploring as a complementary solution. Nevertheless, this argued estimation, also supported by the EC Technical Study (please refer to D2.1 for more details), appears to gain little attention among the participants of the stakeholder group, who, on the other hand, highlighted the significance of a potential linkage of the SRI scheme to the Building Automation and Control Systems of a building, in terms of an alternative solution.

As far as the trained experts bearing the burden of SRI assessments is concerned, both the respective description within D2.1 and the stakeholders involved in the co-creation activity seem to be in the exact same direction, since they converge to the conclusion that certified energy inspectors and auditors, qualified to perform EPC assessments, could be employed for carrying out SRI assessments as well. In both parts, this allegation was established upon the precondition that the EPC-related energy inspectors and auditors to be selected for driving the whole SRI assessment process, should undergo a necessary course of training sessions before being assigned the role of SRI assessors.

The same pattern in terms of alignment also applied when the SRI evaluation method was set in the spotlight, with the framework prescribed in Method B having been selected as the optimal solution.

Following the rationale that an EPC-driven SRI implementation pathway is qualified as the best option, D2.1 suggests the SRI practical application to follow the same rules as the EPC, being mandatory for all building categories that are required to issue an EPC according to the current Greek legislation (e.g., new construction, major renovation, selling, renting, etc.). This comes to a partial agreement with what the stakeholder group highlighted, since the latter provided specific building types that should be laid emphasis on, comprising offices and hotels, shifting the interest away from the residential building stock.

When the discussion revolves around the thematic areas that are focused on the technical domains of high significance in Greece and the level of weightings' tailoring, a solid conclusion regarding the alignment between the descriptions in D2.1 and the stakeholder group cannot be drawn, given that these particular discussion points have not been explored in D2.1 for the Greek case. As of this, the direction that should be followed, at least up to this point of the SRI-ENACT project, is based on the insights gained by the stakeholders.

Table 12 Summary of the key differences between the current SRI landscape in Greece, as presented in D2.1, and the insights drawn from the stakeholder focus group

Thematic area	Current landscape (D2.1)	Stakeholder engagement	Alignment
<i>SRI implementation pathway</i>	<ol style="list-style-type: none"> 1. Linkage to the EPCs 2. Market-based scheme based on self-assessment and 3rd party engagement for those willing to pay 	<ol style="list-style-type: none"> 1. Linkage to the EPCs 2. Linkage to BACS 	Partial

<i>Trained SRI experts</i>	1. Energy inspectors 2. Energy auditors	1. Energy inspectors 2. Energy auditors	Total
<i>SRI evaluation method</i>	Method B	Method B	Total
<i>Pilot building types</i>	All building types that are required to issue an EPC	1. Offices 2. Hotels	Partial
<i>Emphasised technical domains</i>	Not discussed	1. Monitoring & control 2. Cooling 3. Heating	N/A
<i>Weightings' tailoring</i>	Not discussed	Per climate zone and per type of buildings (residential, non-residential)	N/A

4.5.6. Conclusions and next steps

The focused discussion with the stakeholders on SRI in Greece highlighted the need to coordinate actions in relation to the pilot application of the SRI Indicator. According to the conclusions of the discussion, emphasis should be placed on large buildings of the tertiary sector. However, in this category of buildings it should be taken into account that other certifications (e.g., LEED, BREEAM, etc.) are more popular than EPC. In addition, the topics of training and certification of SRI experts should be clarified, setting as a possible framework the training process of energy inspectors. Finally, the adaptation of the methodology at climate zone level, requires further analysis for all types of buildings.

Next steps include:

- Coordination between SRI Cluster, for the support of the Ministry of Energy and Environment, so that Greece can participate in the pilot phase with the help of the 4 LIFE projects.
- Continue the dialogue with the Stakeholder Liaison Group, created within the framework of the SRI - ENACT project in collaboration with SRI Cluster, for the next meetings to follow.
- Attempt to coordinate the actions between those involved in the SRI Indicator, including the Ministry of Environment and Energy, for a joint strategy regarding the more general SRI methodology adapted to the Greek landscape, but also for the organisation of the upcoming training cycles.

4.6. Croatia

4.6.1. Executive Summary

The North-West Croatia Regional Energy and Climate Agency (REGEA) organised on May 22, 2023, a dedicated workshop on the implementation of the Smart Readiness Indicator (SRI) within the building stock in the Republic of Croatia. The co-creation workshop organised within the framework of LIFE SRI-ENACT project took place at the University of Zagreb, Faculty of Electrical Engineering and Computing in Zagreb.

A group of 15 experts, out of which 12 are members of the Stakeholder Liaison Group participated in the workshop, comprising representatives of the Ministry of Physical Planning, Construction and State Assets, Croatian Chamber of electric engineers, University of Zagreb (the Faculty of mechanical engineering and naval architecture, as well as the Faculty of electrical engineering and computing), representatives from the municipality of the capital city of Zagreb, a software/hardware company in field of indoor air quality – Smart Sense Ltd, a company in field of building automation and control systems (BACS) – Siemens, as well as a representative from the Energy Institute Hrvoje Požar, partner in the sister project (SRI2MARKET). Unfortunately, the following invited members of the Stakeholder Liaison Group could not attend due to various reasons: a company specialized in digital solutions for energy audits – Thorium Software Ltd, Croatian Chamber of civil engineers, Croatian Chambers of mechanical engineers, Croatian Chamber of Economy, representatives of REGEA’s founders (Krapina-Zagorje County, Zagreb County and Karlovac County), Croatian Green Building Council (also an SRI-ENACT’s advisory board member) and University of Zagreb – Faculty of civil engineering. These stakeholders will be in close collaboration with REGEA through individual interviews to provide their feedback on the topic of SRI in the Republic of Croatia.

The workshop was divided into two parts. The first part of the workshop started with a short introduction by REGEA where main goals of the workshop have been outlined after which a series of presentations were given:

- General introduction of the SRI-ENACT project.
- Overview of SRI methodology at EU level.
- SRI-ENACT’s project research results on the existing framework in the Republic of Croatia.
- A review of official SRI assessment tool (in excel version).
- An example of SRI assessment of an office building in ownership of the Energy Institute Hrvoje Požar.
- Introduction to the sister project SRI2MARKET.

The second part (focus group) was organised as an interactive discussion moderated by REGEA where stakeholders gave their feedback through pre-defined questions with the aim of co-creating a national methodological framework for the adoption of the SRI in the Republic of Croatia:

- Implementation pathways of SRI methodology.

- Outlook of barriers/challenges in implementation of SRI methodology.
- Adequate methods for SRI evaluation and impact of domains.
- Weighting factors and extent of adjustment of SRI methodology for the Croatian context.
- Organisation of SRI trainings within the scope of the SRI-ENACT project and related certification.
- Common rules for future pilot operation of the SRI-ENACT project.
- Identification of necessary changes in current legislation for the successful implementation of SRI.
- Potential financial schemes for supporting the SRI.

4.6.2. Introduction

AGENDA

Table 13 Croatian Stakeholder Liaison Group Session agenda

Time	Title	Presenter
10:00 – 10:05	Opening speech	Slavica Robić, REGEA
10:05 – 10:25	SRI-ENACT project – introduction	Marko Čavar, REGEA
10:25 – 10:45	Smart Readiness Indicator (SRI)	Marko Čavar, REGEA
10:45 – 11:05	Current SRI Landscape – Croatia	Marko Čavar, REGEA
11:05 – 11:20	Review of official (excel) methodology for SRI evaluation	Marko Čavar, REGEA
11:20 – 11:35	SRI2MARKET Example of SRI evaluation of a building	Marko Biščan, Energy Institute Hrvoje Požar
11:35 – 11:45	Coffee break	
11:45 – 13:00	Focus group (interactive discussion)	Moderator: Marko Čavar, REGEA
13:00 – 13:15	Q&A and conclusion	Marko Čavar, REGEA
13:15 -	Lunch and networking	

PRESENTATIONS

During the workshop, prepared presentation slides by organiser (REGEA) were used for all sections mentioned in the agenda. The figures below present a glimpse of the content of what was presented.



Figure 26 Croatia - SRI-ENACT project – introduction



Figure 27 Croatia - Smart Readiness Indicator



Figure 28 Croatia - Current SRI Landscape – Croatia



Figure 29 Croatia - Review of official (excel) methodology for SRI evaluation

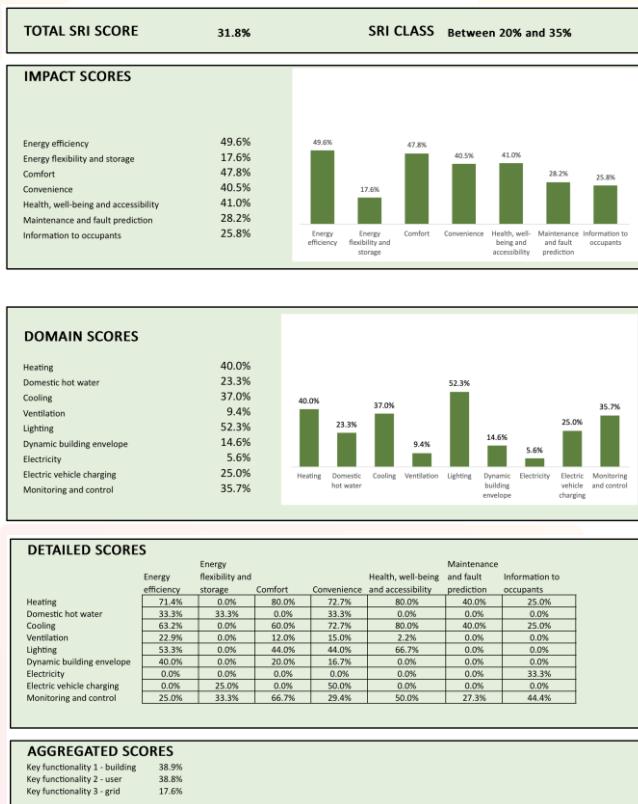


Figure 30 Croatia - Example of SRI evaluation of Energy Institut Hrvoje Požar's building (excel file)



Figure 31 Croatia - SRI2MARKET

Figure 32 Croatia - Focus group

4.6.3. Stakeholder Focus Group (Interactive discussion)

PARTICIPANTS

After the first part, an interactive discussion followed – Focus group, with the participation of 15 stakeholders. Full overview of participants is given in the table below.

Table 14 Croatian co-creation workshop participants

Nr	Participant	Organisation
1	Mario Jagar	Smart Sense Ltd
2	Zvonimir Anić	Smart Sense Ltd
3	Boris Njavro	Blueprint Energy
4	Filip Ćurko	City of Zagreb
5	Damir Dović	University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture
6	Marijana Butković Golub	Ministry of Physical Planning, Construction and State Assets
7	Grgo Žaper	Croatian Chamber of Electrical Engineers
8	Igor Balen	University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture
9	Ružica Jurjević	Energy Institute Hrvoje Požar
10	Petra Miljan	University of Zagreb, Faculty of Electrical Engineering and Computing
11	Marko Blščan	Energy Institute Hrvoje Požar
12	Damir Digula	Siemens Ltd
13	Marko Čavar	REGEA
14	Saša Bardak	REGEA
15	Slavica Robić	REGEA

The discussion was moderated by REGEA and structured around 13 predetermined questions that were adjusted by REGEA for the purposes of this co-creation workshop. Questions were answered directly in person, without the usage of any online/digital pool platform. Therefore, valuable feedback on following aspects was gathered:

IMPLEMENTATION PATHWAYS

A first pair of questions was focused on various possible implementation pathways that can be used in the Croatian case to trigger the implementation of SRI – more specifically – its assessment in the Croatian building stock, as well as on identification of additional barriers and challenges that could hinder the future implementation of SRI methodology in Croatian legislative framework. In the first part of the workshop, possible implementation

pathways were presented with pros and cons, as well as already identified barriers through creation of current SRI landscape in the Republic of Croatia.

Question #1

“According to the EU SRI methodology, there are 5 potential implementation pathways. Which one(s) is/are the most suitable for the Croatian context?”

1. Linking SRI with Energy Performance Certificates (EPCs)
2. Linking SRI to the construction of new buildings and major renovations of existing buildings
3. Voluntary market-based scheme based on self-assessment and support from online tools and 3rd parties (subsidised or non-subsidised)
4. Linking SRI to BACS
5. Linking SRI with the installation and use of Smart Meters

Main discussion points/conclusion:

- The highest level of success for the implementation of SRI, in the Croatian specific context, will be achieved if we link SRI with EPCs where SRI can be calculated as part of energy audits and whenever EPCs are published/renewed. However, apart from the straightforward SRI assessment, a big focus should also be put on measures for improvement of SRI score which could be connected to measures in EPCs.
- For buildings which already have EPCs that are valid for a longer period (i.e., 5 or more years), a momentum of the new EPBD should be used, which will dictate that regular inspections of 91 thermo-technical systems should be done every 2 years. That can be a very effective triggering point.
- SRI assessments should definitively be linked to the construction of new buildings and major renovations of existing buildings, as those are, especially when it comes to the public building stock, often subsidised through Croatian national programmes for energy renovation and can be perceived as an attempt to introduce new aspects in the building sector. The same has been done with the initial implementation of BACS and introduction of nZEB concept, which are now mandatory for any newly constructed buildings, as well as deeply refurbished buildings.
- Not many buildings, especially public ones, have implemented BACS. Also, linking it with BACS will maybe endanger the general opinion of owners/facilitators that SRI and BACS is the same thing, which can be very tricky since BACS does not cover all services that are inspected in SRI. However, if a building has BACS level A or B, it can be a great sign for a medium/high score SRI score as it directly reflects on possibility of a building to be digitally controlled.

- Smart meters are not very widespread in the Croatian building stock and therefore should not be perceived as a good triggering point for SRI assessment, especially since those are often connected to the method C of SRI assessment which is not still officially defined.
- After introducing EPCs as mandatory in Croatia, the government set, according to EPBD/EED, a financing mechanism for subsidising energy audits and issuing of EPCs. The similar approach can be taken once the SRI is implemented in the Croatian legal framework, but the concept of subsidies should be avoided since there are plenty of other options to perform SRI assessment as mentioned above.

Question #2

“Which are barriers/challenges in proper implementation of SRI methodology in the Republic of Croatia?”

Main discussion points/conclusion:

- One of the biggest challenges will be to properly adjust weighting factors used in SRI methodology which greatly influence on calculated SRI score, especially since Croatia is commonly divided into two regions: continental and coastal. Because of differences in climate, these two regions have a completely different heating and cooling demands in the building stock which should be carefully taken into consideration.
- Another significant challenge/barrier is on the EU level where each country has been granted with the free choice of adjusting weighting factors which will for sure create big differences in SRI scores across the EU – this should be properly addressed in all four LIFE programme EU projects, which deal with the topic of SRI to try to find a proper solution in time.
- One should not forget that often the failure in showing proper benefits of any newly introduced methodology, such as SRI, can be a great hindering factor in successful implementation, regardless of what the future legal framework will dictate. This was also the case when EPCs were introduced where owners/facilitators were often demotivated with lower scores, and especially when they saw the outlook of necessary measure that must be implemented to improve the score, mainly due to the required investments costs. However, this should not be the case in construction of new buildings and deep renovation of existing buildings where high share of costs will be attributed to construction works (i.e., in average advanced BACS are 3-5% of total costs so additional few percent will not play a major negative role).
- One barrier is also the current Croatian legal framework related to “grid flexibility” which hinders the proper implementation of this concept (energy communities and energy sharing in general). This will definitively be the case in SRI evaluation since most buildings cannot get any points in “grid flexibility” which means that the highest possible score for a building is 67%.

- Finally, a proper “social” marketing will be needed where the relevant Ministry will have to carefully design campaigns to motivate people to perform SRI assessments since that can also be a “hidden” barrier which needs to be properly addressed and solved in time.

METHODS AND DOMAINS

Question #3

“Currently, there are three available methods for SRI evaluation. Which one is the most suitable for the Croatian context?”

1. Method A – simplified method where 27 services are included, and it requires less amount of time
2. Method B – more complex method where 54 services are included, and it requires more time
3. Method C – a method connected with energy management systems, smart meters, and BACS in general

Main discussion points/conclusion:

- It is very certain that Method B will be selected as the required method in the future Croatian legal framework related to SRI evaluations.
- However, according to the new EBPD, regular inspections of thermo-technical systems should be carried out every 2 years. Additionally, an energy auditing process is already lengthy and complex enough. Given these factors, adding Method B (54 services) on top of the existing requirements raises concerns about the reliability of the final SRI score, the associated SRI evaluation costs and the overall commitment of auditors to perform a thorough assessment. So, it is still unclear how to proceed. Because of that, the piloting within SRI-ENACT should be used to give a realistic overview of estimated time and workload for future SRI auditors.
- Creation of various tools for SRI assessments, such as SRI-ENACT tool and SRI2MARKET tool, will definitively contribute to easier evaluations, regardless of the used method.
- Method C, in theory, is the best approach. However, its practical implementation is currently not possible as there is no officially established methodology for it. Once the European Commission elaborates on this method, it can be considered for future evaluations, but probably in second or third iteration of Croatian legal framework concerning SRI.

Question #4

“Each method includes different set of services, grouped in several domains (heating, cooling, domestic hot water...). In terms of the Croatian context, which services (and domains) should be put in focus?”

Main discussion points/conclusion:

- Relevance of each domain should be developed in parallel for the two regions in Croatia (continental and coastal) due to large differences in energy demand (for heating and cooling).
- Since SRI is focused on the ability of each building to be controlled and monitored, the BACS domain should be definitively put in focus in methodology for both regions.
- It is very hard to give a general answer for all buildings since the usage and significance of each domain differs across the building stock based on the typology of certain building (i.e., office building, educational buildings, hospitals, cultural buildings, commercial buildings, hotels, etc.).
- Therefore, maybe it might be beneficial to introduce an additional classification based on building typology. For example, educational buildings could be assigned a lower significance for domestic hot water, while hotels, on the other hand, cannot exclude its relevance.
- With the new updates of EBPD, the significance of heating and cooling will diminish as zero emission buildings (ZEB) will become more prevalent and heavily increase the building envelope quality, introduce of carbon neutral technologies, etc. However, the SRI does not evaluate the energy efficiency in itself, but rather the ability to control those systems/domains. Therefore, we should not make connection between energy performance and “smart” performance (or SRI in general).

WEIGHTINGS

Question #5

“At what level do you think the tailoring of the weightings included in the methodological framework of the SRI calculation, should be carried out?”

Main discussion points/conclusion:

- It was already addressed in previous questions/discussions that weighting factors should be adjusted according to climate zones (continental and coastal Croatia), as well as according to building type since these have different requirements. Even by having these two additional classifications based on which additional tailoring will be made, there are definitively several more aspects that should be considered:
 - Newly constructed or deeply renovated buildings vs old buildings
 - Small vs large buildings (in useful area)
 - Number of users

- Working regimes (number of shifts and working regime)
- Building typology (type of use)
 - Educational buildings
 - Office buildings
 - Large commercial buildings
 - Hospitals and/or other medical buildings/centers
 - Cultural buildings
 - Sports facilities
- An answer to these questions should be the biggest focus of the piloting in the SRI-ENACT project as around 1200 buildings will be assessed (on a project level), which creates a large database that can be used to give a proper answer and supporting arguments for development of various weighting factors.

TRAININGS

Question #6

“Which type/s of organisations/professionals from the indicative list below do you consider to be the most suitable to be certified as SRI experts?”

1. Energy auditors/inspectors
2. Engineers (mechanical, electrical, civil)
3. Manufacturers of technical systems/equipment
4. Local/regional authorities
5. Building owners
6. Utility companies

Main discussion points/conclusion:

- The SRI-ENACT project in the Republic of Croatia will aim to train existing energy auditors/inspectors to become SRI auditors. In that light, it is very likely that this will be one of the requirements for becoming an SRI auditor in a later phase when the Croatian legal framework is updated to include SRI.
- As an alternative, all members of the Croatian Chambers of Engineers: 1) mechanical, 2) electrical and 3) civil should be able to participate in trainings to become SRI auditors if they opt to do so. However, it is definitively necessary to reach a consensus on whether those interested engineers should also train themselves to become energy auditors/inspectors (before or in parallel).

- It is almost 100% sure that local/regional authorities and manufacturers of equipment should not be targeted for SRI auditors as they oversee different aspects in the building stock ecosystem. Even if manufacturers of equipment would be allowed to become SRI auditors, those employees should be either energy auditors/inspectors or official members of above-mentioned Chambers.
- Building owners can be educated through SRI-ENACT project to be able to perform self-assessments, but cannot get an official certificate if they do not comply with requirements stated in the previous bullets.

Question #7

“Which skills should be transferred to SRI Auditors for ensuring that the methodology is well understood?”

Main discussion points/conclusion:

- Understanding of all involved services and their impact on the building in general. This should be done by presenting real-life good practice examples through the training program.
- A skill to critically reflect on calculated SRI score in terms of possible deviations of results. This should be done by instructing SRI auditors to evaluate the same building during the training program.
- A level of impact of each service within Method A and B on energy efficiency. This aspect is relatively important and not hard to acquire if energy auditors/inspectors will be trained to become SRI auditors.
- If relevant, a skill to identify the measures to boost SRI score by applying different measures. Although this is not part of the SRI assessment (per official EU methodology), it will sooner or later play a very crucial role, especially if we opt out to integrate SRI in EPCs.

Question #8

“How should a capacity building programme for SRI Auditors be structured/organized?”

Main discussion points/conclusion:

- It is very likely that the Republic of Croatia will, through its legal framework, introduce separate ordinance for SRI, just as it was done for energy audits and related EPCs. This dedicated ordinance should provide detailed guidelines for interested stakeholders in becoming SRI auditors.
- Based on the criteria for determining who will be eligible to undergo training to become an SRI auditor, two possible pathways are identified:
 - Additional module (Module 4) on top of module 1 (energy audit/certification of simple buildings), module 2 (energy audit/certification of complex buildings) and module 3 (energy audits/certification of large industry buildings) for designers, which will be specifically designed for SRI. Prior to this, it must be agreed on whether someone should pass the first three modules before attending the fourth.

- Professional development course for energy auditors/inspectors which should be more concrete and shorter.
- It is very important that the SRI testing phase, in terms of prepared tailor-made training materials, conducted training programmes and lessons learnt from both LIFE programme (SRI-ENACT and SRI2MARKET), is taken into consideration when the official training materials will be developed.
- As the previously mentioned three modules are usually done online, it is expected that the fourth one (dedicated for SRI) should also be carried out online by SRI experts.
- Same as for other three modules, attendees of the fourth module will have to pass the exam to acquire the official certificate.

CERTIFICATES

Question #9

“Which outlook should SRI certificate have and which procedure should be introduced for receiving one?”

Main discussion points/conclusion:

- One of the ideas proposed is that the future SRI certificate is distinguished for simpler and more complex buildings (i.e., residential buildings, smaller public buildings such as educational buildings, larger public buildings such as hospitals and sport centres, and then also for large private buildings such as commercial buildings and industry). This is due to complexity that each building typology has and can be somehow related to different modules that are currently available for energy audits, especially if the Republic of Croatia opts for introducing different weighting factors for each building typology and each climate zone.
- SRI certificate within the timeframe of the project should definitively state that the SRI Auditor obtained it by evaluating X number of buildings throughout the SRI-ENACT project (and/or SRI2MARKET project) after successfully evaluating at least ten buildings and passing the exam.
- Once the testing phase is done and the Republic of Croatia is about to introduce the official procedure for obtaining the SRI certificate, the process should be similar to that for EPCs, and applicants should be required to enrol in either the separate module (module 4) or the professional development process. After, for example, 20-40 hours of training (depending how it will be defined), each applicant must pass the official exam in order to obtain the certificate.
- One additional request was suggested. At least in the early phase – each applicant, apart from the exam, must evaluate a number of buildings (analogy to SRI-ENACT capacity building programme), which will be

revised by official SRI experts. Based on the effectiveness of these “test” SRI evaluations, each applicant will then pass this part of the exam.

Question #10

“Similar to the register of energy auditors/inspectors, should the Republic of Croatia introduce the register for SRI Auditors?”

Main discussion points/conclusion:

- This highly depends on which type of professionals will be decided that are eligible to become the SRI Auditors.
- If only energy inspectors/auditors will be eligible to obtain the certificate, creating a separate/individual register of SRI auditors appears to be a low interest option that requires too much work. Instead, the existing register of energy auditors/inspectors, which is official and publicly available on websites of Croatian chamber of engineers, should be expanded to also show who can also perform SRI evaluations.
- If the Republic of Croatia opts for allowing a broader audience to become SRI Auditors, then a separate/individual register should be made.

PILOT OPERATION IN THE REPUBLIC OF CROATIA

Question #11

“Which building type(s) do you consider most suitable to be used as pilot(s) for the implementation of SRI in the Croatian context?”

- Residential buildings
- Large commercial buildings
- Hotels
- Office buildings
- Educational buildings
- Cultural buildings
- Sports facilities
- Hospitals and other medical centres
- Industry

Main discussion points/conclusion:

- In terms of pilot operation within the SRI-ENACT project, we should focus on the mandatory aspects that are brought at the table by the new EPBD. That means that first the large buildings will become mandatory and then the smaller ones, regardless of their typology. Therefore, we should first focus on buildings that have installed thermo-technical systems larger than 290 kW, then on buildings that have installed systems larger than 70 kW → hospitals, larger commercial buildings, sport facilities and larger educational buildings will definitively be in focus of the pilot operation.
- REGEA oversees the public building stock present in four counties (four founders of REGEA – city of Zagreb, Krapina-Zagorje County, Karlovac County, Zagreb County), and therefore, it is very likely that these buildings will be included in pilot process (SRI evaluation).
- Over the last decade, the Energy Institute Hrvoje Požar has performed numerous energy audits and certification process (for issuing EPCs), and therefore, these buildings will also be taken into consideration through a joint SRI evaluation process of both SRI-ENACT and SRI2MARKET.
- However, all new residential buildings (single and multi-apartment) will have the obligation to monitor their consumption starting from 2025 so we should also focus on these buildings. Since REGEA is not connected to this sector within their core business, REGEA will adjust the scope of the pilot operation to also include new and/or refurbished residential buildings through other channels.
- It is very unlikely that, at this point of pilot operation, industry building will be in focus, but instead, larger public and commercial buildings will be put in focus. However, that does not mean that those buildings will be excluded from the SRI evaluation given the possibility.

POLICIES & FINANCING SCHEMES

Question #12

“What policies are necessary to to create a regulatory context that supports the implementation of SRI in the Republic of Croatia?”

Main discussion points/conclusion:

- Following the idea that SRI will be implemented in a similar way as EPCs, it is expected that a series of ordinances will be introduced in the Croatian legal framework which will support the implementation of SRI.
- The main decision which has to be made is if the SRI evaluation will be mandatory and part of EPCs or it will be left out to be a free choice of interested stakeholder.

- In case that it will be mandatory, as previously said, the logic of introduction of EPCs will be followed where the Building Act will introduce the SRI concept and then state that all necessary aspects will be defined in ordinances such as:
 - Ordinance on the requirements and manner of issuing certificates to Croatian citizens and legal persons for realising the right to provide services of the regulated profession of energy certification and energy audits of buildings in the countries that are Parties to the Agreement on the European Economic Area.
 - Ordinance on energy audits of buildings and energy certification (OG 88/17, 90/20, 1/21).
 - Ordinance on the manner of performing building surveillance, the form, the requirements and manner of keeping the building logbook and the contents of the supervising engineer's final report.
 - Ordinance on the control of energy certificates and reports on regular inspections of heating systems and cooling or air-conditioning systems in buildings.
 - Ordinance on persons authorised for energy certification, energy audits of buildings and regular inspections of heating systems and cooling or air-conditioning systems in buildings.
 - Ordinance on requirements and manner of issuing certificates to persons from countries that are Parties to the Agreement on the European Economic Area for providing services of energy certification and energy audits of buildings in the Republic of Croatia and on the recognition of foreign professional qualifications for providing services of energy certification and energy audits of buildings.

Question #13

“What kind of financing schemes are necessary to facilitate the process of implementing SRI in the Republic of Croatia, and consequently increasing the SRI score in the building stock?”

Potential funding schemes linked to the SRI's assessment could be done similarly as for the EPCs when they were firstly introduced. The Environmental Protection and Energy Efficiency Fund (EPEEF, in Croatian: FZOEU) which is under the jurisdiction of the Ministry of Economy and Sustainable Development could open a separate financing line for SRI evaluations for different types of buildings. Financial funds that would be used would come directly from the Fund who is generating the funds through different taxes and compensations that are paid, but also other EU funds such as EBRD. Usually, the fund is securing co-financing, but also donations and low-rate grants. When it comes to increasing the SRI score, national programmes for refurbishment of different types of buildings could be used as those were evaluated as a very good option for energy renovation processes. However, prior to that, main objectives of such expanded calls should be defined as energy savings are not the crucial ones when it comes to SRI.

4.6.4. Photos



Figure 33 Croatian co-creation photos

4.6.5. Comparing the current SRI landscape in Croatia with the insights of the stakeholder focus group

The key insights presented above are in line with the current SRI Landscape for the Republic of Croatia, outlined in D2.1, for parts that were covered in the report. The following table presents a basic comparison between key insights and D2.1.

Table 15 Summary of the key differences between the current SRI landscape in Croatia, as presented in D2.1, and the insights drawn from the stakeholder focus group

Thematic area	Current landscape (D2.1)	Stakeholder engagement	Alignment
<i>SRI implementation pathway</i>	<ol style="list-style-type: none"> 1. Linkage to the EPCs 2. Linkage to BACS 	<ol style="list-style-type: none"> 1. Linkage to the EPCs 2. Linkage to BACS 	Total
<i>SRI evaluation method</i>	Method B	Method B Maybe method A in special cases	Total
<i>Emphasised technical domains</i>	<ol style="list-style-type: none"> 1. Heating 2. Cooling 	<ol style="list-style-type: none"> 1. Heating 2. Cooling 3. Monitoring & control 	Partial
<i>Weightings' tailoring</i>	Not described	Per climate zone, type of building, building typology, age, size, working regimes	N/A
<i>Trained SRI experts</i>	Not described	<ol style="list-style-type: none"> 1. Energy auditors/ inspectors 2. Members of technical chambers 	N/A
<i>Certificates</i>	Not described	<ol style="list-style-type: none"> 1. Energy inspectors 2. Energy auditors 	N/A
<i>Pilot building types</i>	<ol style="list-style-type: none"> 1. Large private and public buildings 2. REGEA founders' buildings 	<ol style="list-style-type: none"> 1. Large private and public buildings 2. REGEA founders' buildings 	Total
<i>Policies and financial schemes</i>	<ol style="list-style-type: none"> 1. National programmes for energy renovations 2. EU projects 3. Commercial banks 	<ol style="list-style-type: none"> 1. National programmes for energy renovations 	Partial

The Focus Group agreed that the SRI concept will likely be linked with the EPCs, as it was also outlined in the current SRI Landscape due to its high success of implementation in terms of legal framework. Therefore, it can be expected that the Republic of Croatia will follow the same methodology in terms of introducing a new aspect in the (public) building sector such as the SRI where similar bylaws and ordinances will be developed by the relevant Ministry (MPGI). Also, the Focus Group stated that the SRI, when implemented, should also become a mandatory part of all other aspects, such as European framework for sustainable buildings (Levels), Building Information Modelling (BIM), Building Renovation Passports (BRPs) and, the most importantly, the Digital Buildings Logbook (DBL). As stated in D2.1, main triggering points for SRI assessments can be found in construction new buildings or deep renovation of existing buildings, as well as performing energy audits (issuing EPCs) and inspections of HVAC systems.

Also, as identified in D2.1, the biggest challenge in the implementation of the SRI in the Croatian legal framework will be to properly adjust the SRI methodology, especially in terms of weighting factors, but also in motivating building owners to perform the SRI assessments by showing them all the benefits of the SRI. This can also be found in a general conclusion of the co-creation workshop where participants identified differences between continental and coastal parts of the Republic of Croatia, which directly influence on SRI score. In terms of emphasised technical domains, there is a partial alignment, as D2.1 did not focus on monitoring and control which was outlined as equally important as heating and cooling during the workshop. On the other hand, weightings' tailoring was not covered by D2.1, and therefore, remarks from the workshop present a great contribution to the current SRI Landscape.

As the SRI-ENACT project will develop its own SRI Assessment toolkit, there is no need to link the calculation of the SRI with existing tools in the Republic of Croatia. However, as stated in D2.1, there are several available tools which can be remodelled to fit the needs of SRI evaluations. Nevertheless, the Focus Group stated that Method B should be a standard for most of the cases which is completely in line with conclusions of the current SRI Landscape.

Regarding the SRI evaluations, the Focus Group elaborated more on the future organisation of trainings of SRI Auditors and related certification process which have not really been covered in D2.1, and therefore, these remarks/comments present a great contribution to the current SRI Landscape.

As for the pilot operation in the Republic Croatia, the Focus Group identified types of buildings for initial SRI assessments, which correlate to statistical data of the Croatian building stock presented in D2.1 where large buildings, both public and private, should have a priority in the SRI evaluation due to its energy consumption, CO₂ emissions and the general impact.

Lastly, when it comes to different financing options, the Focus Group outlined that different National Programmes for energy renovations should be used as a basis for improvement of SRI score in both public and private buildings which were also identified as the main financing schemes in the D2.1. These National Programmes could dictate the tempo and level of renovation of buildings for which, through different financial mechanisms (national and/or EU), certain share of the investment is covered via grants/subsidies. This seems to be the most effective approach in renovation of the building stock in the Republic of Croatia. Unfortunately, due to lack of remaining time in the co-creation workshop, the Focus Group did not have time to furtherly elaborate on other financing options such as EU funds, alternative models (ESCO, PPP), Green Loans, Green Bonds, and the involvement of the commercial banks. These aspects will definitively be covered during next meetings of the Stakeholder Liaison Group.

4.6.6. Conclusions and next steps

The co-creation workshop organised in the Republic of Croatia presents a first meeting on the topic of SRI which was used to give a general introduction in SRI and outline necessary aspects that will have to be further discussed into details to prepare the relevant national public authority (Ministry of Physical Planning, Construction and State Assets) for a clear and structured legal framework of SRI in the Republic of Croatia. In that light, members of the Stakeholder Liaison Group have started the co-creation process by sharing their valuable feedbacks, as follows:

- SRI concept and its implementation will likely be linked with Energy Performance Certificates (EPCs).
- SRI evaluations should be introduced for all new and deep renovated existing buildings, while energy audits/certifications present an ideal trigger point for SRI evaluation in other buildings.
- The biggest challenge regarding SRI will be to adjust the official methodology in terms of domains/weightings factors as those affect the SRI scores significantly.
- Method B should be a priority, however, method A is also considered for cases when energy audits and SRI assessments will be done together (in parallel) by one auditor.
- Heating should be in bigger focus for continental part, while cooling for coastal part of the Republic of Croatia; other domains are equally important for both regions.
- Weighting factors should be introduced not only for different climate zones (regions), but also for different building typologies. For this, pilot operations within SRI-ENACT/SRI2MARKET projects will play a crucial role.
- Energy auditors/inspectors and engineers (members of technical chambers) should be the key target group for becoming official SRI auditors.
- SRI-ENACT and SRI2MARKET capacity building programmes should be used as a basis for the future official training materials which will be used to train SRI Auditors.

- Large buildings (public and private) should be in focus of the pilot within the SRI-ENACT, while REGEA will also evaluate all buildings owned by its founders (4 counties).
- Regarding policies and implementation of SRI in the legislation, the same analogy of EPCs and their implementation in the Croatian legal framework should be followed.
- As for financing options, initial SRI assessments could be subsidized by the EPEEF, while the actual investments for increase of SRI score could be co-financed through regular calls within various national programmes for refurbishment of the building stock in the Republic of Croatia. However, more detailed elaboration of that is needed, especially since energy savings are not the crucial aspect of SRI.

Next steps of the Stakeholder Liaison Group in the Republic of Croatia include:

- Organisation of next meeting of the Stakeholder Liaison Group, this time by SRI2MARKET project where REGEA will present SRI Assessment Toolkit, SRI Decision Support Tool and outlook of training materials, as well as to present a plan for SRI Auditors trainings and pilot operation if possible. This is expected to take place during September 2023.
- Organise a series of individual physical/online meetings with members of the Stakeholder Liaison Group who could not attend the co-creation workshop to gather necessary valuable feedback from their side on questions asked during the focus group.
- Set up a coordination meeting between REGEA, Energy Institute Hrvoje Požar, the relevant Ministry and up to two more members of the Stakeholder Liaison Group to create a joint strategy for adaptation of the official SRI methodology to the Croatian landscape, especially in terms of weighting factors.
- Prepare a joint strategy between SRI-ENACT and SRI2MARKET projects on the upcoming capacity building program.

4.7. Spain

4.7.1. Executive Summary

Veolia, in collaboration with the National Centre for Renewable Energies (CENER) and SGS as partners in other LIFE sister projects, organized on June 21 at "La Matriz" communication agency, within the framework of the LIFE SRI-ENACT project, a conference on the implementation of the Smart Readiness Indicator (SRI) within the building stock in Spain.

A group of nine experts participated in the first section of the conference ("Stakeholder Liaison Group Session"), comprising energy consultants and policymakers, utilities, managers of relevant European projects, such as SRI2MARKET and EasySRI and research centres. The section started with an explanation of the SRI's framework, a

presentation of the research results obtained in the SRI-ENACT project and the other two sister projects, with the intervention of CENER who explained the roadmap and the current situation of the SRI in Spain. Then, a focused discussion followed having the aim of co-creating a National Methodological Framework for the adoption of the Smart Readiness Indicator in Spain.

The workshop was divided into two parts, with Veolia providing an introduction to outline the main goals, followed by a series of presentation regarding:

- General introduction of SRI's framework.
- A review of SRI LIFE Projects.
- Overview of the current SRI landscape in Spain.

The second part (focus group) was organized as an interactive discussion moderated by Veolia through predefined questions with the aim of co-creating a national methodological framework for the adoption of SRI in Spain. The following aspects have been discussed:

- Perspectives on Barriers/Challenges in implementing SRI Methodology.
- Appropriate methodology for evaluating SRI and impact domains.
- Weighting factors and extent of adaptation of the SRI method in the Spanish context.
- Conducting SRI training in the field of the SRI-ENACT project and related certifications.
- Opinion about the adjustment of weightings based on the SRI methodology.

At the end of the workshop, the next steps and conclusions were exposed and before leaving attendees were able to discuss various SRI-related issues in a less formal way over lunch.

4.7.2. Part I – Presentation on current SRI landscape, Policies and Financial Schemes

PRESENTATIONS

During the session, the following presentations took place:

- Welcome and Introduction (Javier Martín Sanz, Veolia): Short presentation of the goals of the meeting and agenda
- Explanation of SRI's framework (María Merino Hernández, Veolia)
- Presentation of the current SRI landscape in Spain (María Fernández Boneta, CENER)
- Presentations of the three projects under the LIFE call with representation in Spain
 - SRI2MARKET: CENER (María Fernández)

- EasySRI: SGS (Miguel Ángel Peromingo)
- SRI-ENACT: Veolia (María Merino)

In the first part of the meeting, there was a short presentation by the CENER representative about the current SRI landscape in Spain followed by a discussion regarding the policies and financial instruments that may be related to the SRI Indicator.

The key comments in this context were as follows:

- The current status of the current report standard (CRS) in Spain consists of the deployment of the official test phase.
- Based on the existing regulation, the ongoing European projects and the mandatory nature of the new regulation, an opportunity is created to propose the test phase of SRI in Spain to the ministry and thus make our country ready. Ministry for the Ecological Transition and the Demographic Challenge (MITECO) will be the body responsible for implementing the mandatory nature of SRI, so it was to whom the official test phase was proposed, and who saw it as an opportunity to be prepared.
- An official communication was made on the 26th of May 2023 and a provisional project scope and schedule was submitted to the Ministry (MITECO).
- The provisional scope that has been justified to the ministry and the commission will consist of assessing the training needs of experts in SRI evaluation, assessing the need for and usability of the tools needed to perform the evaluations, assessing the quality of the input data and the appropriateness of the methodology to the Spanish context.
- The stages being followed in the deployment process of the official test phase of the SRI in Spain will be:
 1. May-23: Official communication from Spanish Ministry (MITECO) to DG ENER
 2. Oct-23: Spain testing phase start of a non-committal testing phase in Spain (MITECO & CENER)
 3. April-24: Online workshop launch of the open testing phase through third parties and EPC assessors
 4. Oct-24: Introducing SRI certification including the analysis of different strategies to introduce SRI into national markets.
 5. April-25: Testing phase end and all case studies has been conducted and results gathered
 6. Jul-25: Report to the Commission about the test phase (max six months after it ended)



Figure 34 Spanish co-creation workshop picture

4.7.3. Part II – Stakeholder Focus Group (Interactive discussion)

PARTICIPANTS

After the presentations, a focused discussion followed, with the participation of eight experts. The participants in the discussion were:

Table 16 Spanish Stakeholder Liaison Group Session agenda

Nr	Participant	Organisation
1	Antonio Garrido Marijuan	Tecnia/ Project Manager
2	Miguel Ángel Sánchez Orgaz	SGS (Inspection, verification, testing and certification services)
3	Miguel Ángel Peromingo Fresneda	SGS (Inspection, verification, testing and certification services)
4	Susana Martín Toral	CARTIF (Research technology center)
5	Sofía Mulero Palencia	CARTIF (Research technology center)
6	Arturo Corts	AMI (Integrated Maintenance And Energy Services Companies Association)
7	Agustin Villar Pazos	ANESE (National Association of Energy Service Companies)

8	María Fernández Boneta	CENER (National Centre for Renewable Energies)
9	Javier Martín	Veolia (Energy Services Company)
10	Santiago Moral	Veolia (Energy Services Company)
11	María Merino	Veolia (Energy Services Company)

The discussion was structured around five predetermined questions. For each question, the discussion moderators presented one online poll through Slido digital platform, with the aim of directly collecting the opinion of all eight participants. An interactive discussion followed based on the results of the poll. Below, we analyse each question separately and draw some conclusions.

TRAINING / CERTIFICATION

The first question concerned the profile of SRIs assessors. The results of the poll are shown in Figure 35. Participants were allowed to select more than one answer.

Question

“Which type/s of organisations/professionals from the indicative list below do you consider to be the most suitable to be certified as SRI experts ?”

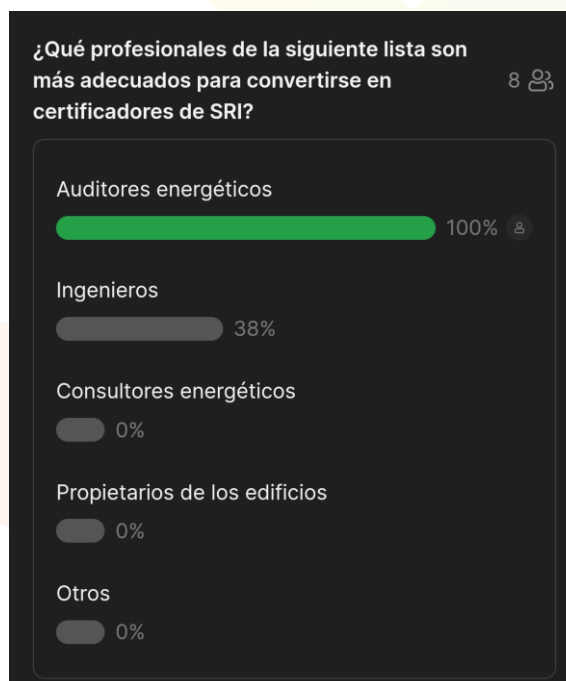


Figure 35 Spain - Answers on Training / Certification

The main comments in the conversation that followed were the following:

- There was a first discussion about the accreditation of the auditors. Some experts on the side of certification companies were afraid because they have encountered that some EPC certifiers do not have enough knowledge to perform the certification even after being accredited. And there is a possibility that this same issue could happen in the future of SRI, so the training must be rigorous, and trainees have to be aware of the responsibility that comes with it.
- The profile definition of the individual responsible for assessing the SRI will be highly influenced by the certification methodology carried out in the EPC.
- The experts agreed that it was essential to ensure that the three SRI auditor training guides that will be developed in Spain, one for each LIFE project, have the same main points in their content, and that the key words match in the three of them and are correctly translated in all of them.
- Experts believed that if the SRI auditors are engineers, they should have prior specialised knowledge in building or energy-related fields.
- The energy service company noted that it will be much easier to carry out the assessments if the building manager, who is knowledgeable about the installations, is willing to collaborate with the assessor. That would ensure that the collected information is correct and reliable, and would speed up assessment time.

Conclusion

The profile selected was energy auditors, but there is need for rigorous training and accreditation of assessors.

METHODS

The second question concerned the method for calculating the SRI. The results of the poll are shown in Figure 36. Participants were allowed to select more than one answer.

Question

“According to the EU technical study, there are 3 potential SRI evaluation methods. Which one(s) do you consider most applicable in the Spanish context?”

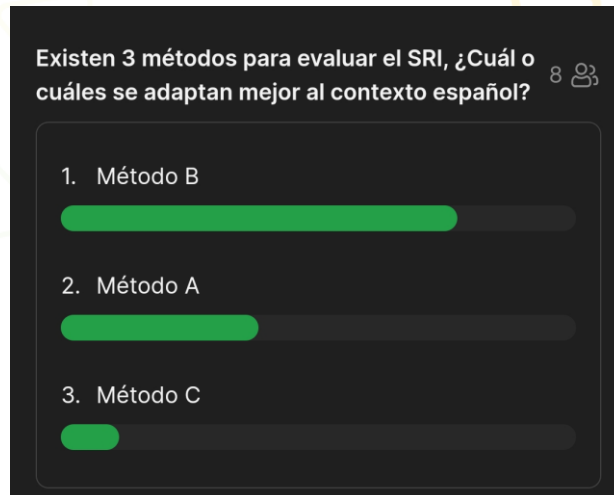


Figure 36 Spain - Answers on the Method for calculating the SRI

The main comments in the conversation that followed were the following:

- Method C has the potential to provide a comprehensive assessment of the real intelligence of buildings, as compared to Methods A and B which give us only a view about the “readiness” of the building for being intelligent rather than its actual intelligence. The fact is that C Method is not developed yet, and it is hard to collect long term data for analysis or automating functions right now. So for the moment Method C will be ruled out.
- As for Method B, 54 services do not seem excessive in the participants’ perception, since with the help of a technician, knowledgeable about the installations, the evaluation time for method B would be significantly shorter than one day.

Conclusion

Method B is considered the most appropriate at this stage, and do not require a big amount of time.

BUILDING TYPES

The third question was about the type of buildings that should be included during the pilot phase. The results of the poll are shown in Figure 37. Participants were allowed to select more than one answer.

Question

“Which building type(s) do you consider most suitable to be used as pilot(s) for the implementation of SRI in the Spanish context?”

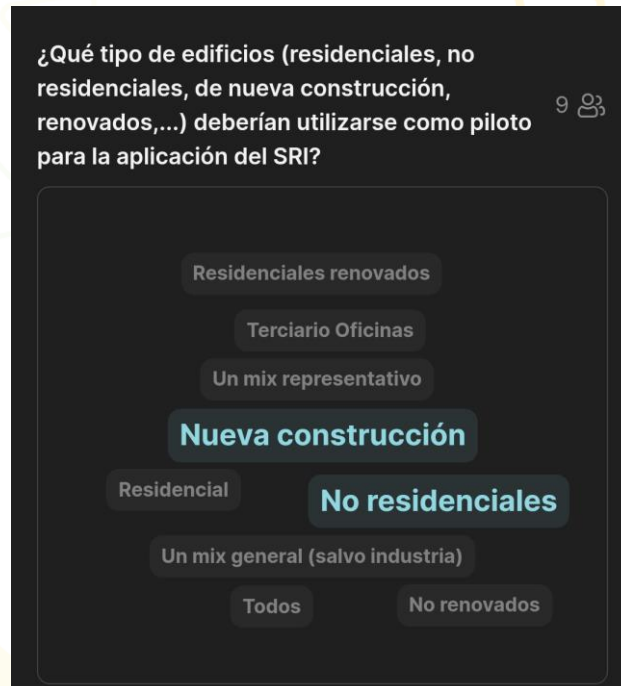


Figure 37 Spain - Selection of type of buildings for the pilot phase

The main comments in the conversation that followed were the following:

- Although the largest building stock is residential, the buildings of large consumers will be non-residential, so it is appropriate to consider a mix of all types of buildings with appropriate proportions.
- When considering the need for renovation, non-renovated buildings represent a majority of the Spanish building stock and this can give us a good indicator into identifying areas that require improvements of the different domains.
- Another point to bear in mind is that the mass of buildings today is not 100% smart. Right now, a building with these specifications is not cost-effective for the user because the market has not yet deployed certain functionalities of smart buildings, i.e., it is not yet ready to interact automatically and efficiently with the grid and the user.

Conclusion

It is highly important to include a mix of building types in the pilot phase reflecting the proportion related to buildings in Spain.

DOMAINS

The fourth question concerned the domains (according to SRI methodology) where emphasis should be placed during the pilot implementation. The results of the poll are shown in Figure 38. Participants were allowed to select more than one answer.

Question

“Each SRI method includes a different set of smart-ready services, clustered in several domains (e.g., heating, cooling, domestic hot water, etc.). Which of these domains should be laid emphasis upon, in the Spanish context?”

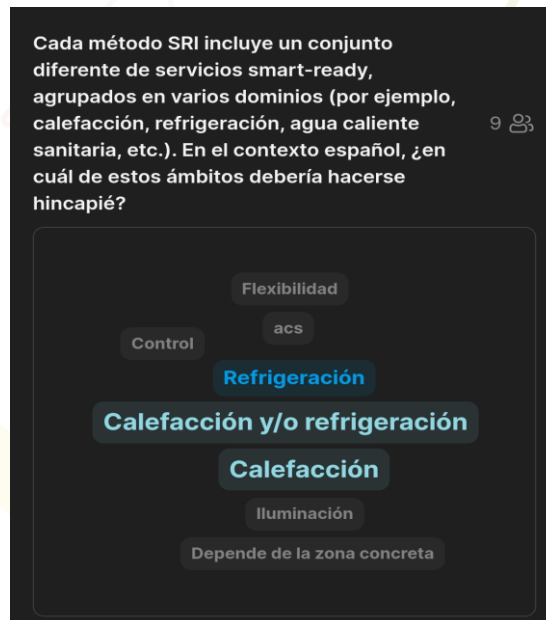


Figure 38 Spain - Selection of domains for the pilot phase

The main comments in the conversation that followed were the following:

- In the national context, ventilation and lighting seem beforehand less relevant than cooling and heating, although they have their derivatives within the domains as a whole.
- The concept of flexibility is seen as key for the coming years. As unlike the other domains that already have a certain track record, the capacity of buildings to store and manage energy taking into account the renewable energy generation expected in the coming years, will be a novel domain in terms of equipment and appliances and will have a strong impact on building renovations and construction.

Conclusion

Experts put emphasis on flexibility and energy storage in building domains but also other domains very common in our country such as cooling and heating.

WEIGHTINGS

The fifth question concerned the adjustment of weightings based on the SRI methodology. The results of the poll are shown in Figure 39. Participants were allowed to select more than one answer.

Question

“At what level do you think the tailoring of the weightings included in the methodological framework of the SRI calculation, should be carried out?”

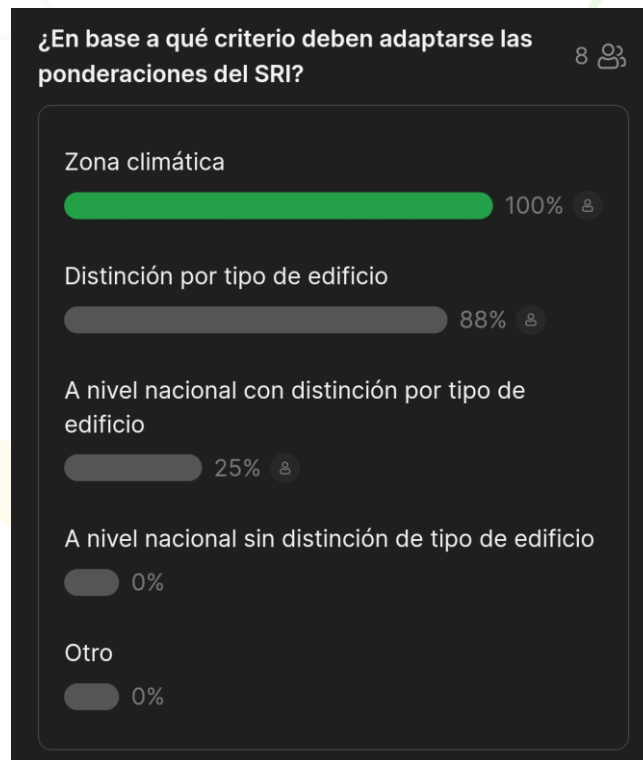


Figure 39 Spain - Preference for weighting adjustment

The main comment in the conversation that followed was the following:

- It is considered of great importance to differentiate the climatic zones, not only in the European area, but also to take into account the conditions in different parts of our country. And it is considered to adjust the weightings according to these conditions.

Conclusion

The experts considered that we should give careful attention to considering climatic variations when making weighting adjustments.

IMPLEMENTATION PATHWAYS

Regarding the question: “According to the EU SRI methodology, there are 5 potential implementation pathways. Which one(s) is/are considered to be the most suitable for the Spanish context?” Unfortunately, we did not have time to discuss it, because several topics for discussion emerged during the presentations that took place in the first part of the meeting. This issue will be addressed in future events or interviews with the stakeholders involved.

The participants had the opportunity to interact less formally and exchange their opinions and vision on the future of SRI in Spain during lunch at the end of the workshop.

4.7.4. Comparing the current SRI landscape in Spain with the insights of the stakeholder focus group

The purpose of this section is to compare the current status of the SRI landscape in Spain, as outlined in the "SRI Current Landscape Report and Stakeholder Engagement Plan" (D2.1). This report is based on a literature review and estimates provided by the Spanish partners of the SRI-ENACT project. The goal is to analyse this information in light of the insights gathered from the stakeholder focus group. The aim is to enhance the original approach by incorporating a perspective that is more market-oriented. Including stakeholder engagement in the process is essential as it allows for a range of perspectives and input from those with a vested interest or expertise in the subject matter. By integrating these insights, the implementation pathway can be refined and adjusted to better align with the stakeholders' needs and expectations.

It's important to continue assessing the degree of alignment and identifying any areas where further adjustments might be needed. Regular communication and feedback loops with stakeholders can help ensure that their perspectives are considered throughout the implementation process. This iterative approach promotes collaboration, transparency, and the development of a robust and inclusive SRI implementation pathway.

Table 17 provides a summary of the alignment levels between the information presented in D2.1 and the stakeholder group that participated in the co-creation activity, categorised by thematic area. It should be noted that this table will be further enriched in the near future as additional rounds of interviews are conducted with a more diverse range of stakeholders.

Table 17 Summary of the key differences between the current SRI landscape in Spain, as presented in D2.1, and the insights drawn from the stakeholder focus group

Thematic area	Current landscape (D2.1)	Stakeholder engagement	Alignment
BUILDING STOCK	The Spanish building stock is mainly composed of old buildings that have low energy ratings (class E), with 82% being energy inefficient	Non-renovated buildings make up the biggest share of buildings in Spain, and that could help identify which domains have the best improvement potential.	Total

LEGISLATION, POLICIES, AND MEASURES

There are currently no regulations regarding SRI but they are expected to be developed in the near future.

Spain is in a period of political transition with elections coming up in July => SRI legislations are expected to be postponed until 2024

Partial

OPTIONS FOR SRI ADOPTION

1. Energy audits and the issuing of EPCs are sometimes perceived as a bureaucratic burden and therefore SRI assessments are most likely to be seen as such.

1. The definition of the profile about the figure that will assess the SRI will be highly influenced by the certification methodology carried out in the EPC.

Partial

2. SRI assessments could be linked to building energy audits.

2. Energy auditors were identified as the most suitable group for becoming SRI auditors, but training should be more rigorous as to ensure accurate assessments.

Total

CHALLENGES

1. Smart solutions are currently not cost-effective and there lack a competitive market for them.

1. Because smart solutions are not yet sufficiently developed or are currently not cost-effective, very few buildings achieve a good SRI score.

Total

2. Few options available for collecting data during the construction, renovation or maintenance of buildings. BIM systems are not sufficiently accessible and too costly.

2. The difficulty to collect long-term data and analyse it is the reason why Method C was ruled out, even though it had been identified as the most relevant method.

Total

3. Willingness of state and municipal authorities to cooperate could pose a challenge.

3. MITECO (Spanish ministry for the energy transition and the demographic challenge) sees the test phase as an opportunity to prepare the country for future EU regulations on SRIs. The SRI implementation at the EU scale being seen as imminent has a positive impact on the Spanish administration.

Partial

4.7.5. Conclusions and next steps

The focused discussion with the stakeholders on SRI in Spain highlighted the need to coordinate actions in relation to the pilot application of the SRI Indicator.

When talking about the web-tool for the assessment of SRI, some participants found the development of various web tools, one for each project unnecessary. The three sister projects agreed that the development of the web-tool was not the main goal of any of the projects. Even if the functionalities of all the webtools were almost the same, the goal is that, with the training, auditors will be able to use any of the web applications to evaluate buildings, so this may end up being a positive advantage to reach a wider market segment.

Spanish Administration represents the official body that will support the development of the SRI in Spain, thanks to the action of CENER to lead the way in the presentation of this new technology for the evaluation of intelligent buildings and also thanks to the fact that the implementation of the SRI in the European context is seen as an imminent upcoming event that other EU countries have already started to adopt. This has positive influence, and therefore, the Administration is planning to be familiar with any progress on the national SRI.

An important point to bear in mind regarding the Spanish political framework is that we are in a period of political transition. General elections will be held on the 23rd of July, so the development and decision making regarding the SRI, as well as many other important matters such as the definition of the auditors' profiles, the methodology to be applied, etc., will be postponed until 2024.

Next steps include:

- The collaboration with the sister projects under the LIFE call, SRI2MARKET and EasySRI, during the test phase to jointly select and evaluate the most representative buildings for Spain. The selection of buildings will be done carefully by choosing a certain number of each type of building, as well as the evaluation, since the buildings that will be selected will be studied so that the indicator is adjusted as much as possible to the reality of the building.
- Continue the dialogue with the Stakeholder Liaison Group, created within the framework of the SRI - ENACT project in collaboration with the SRI Cluster, for the next meetings to follow.
- Among the actions to be carried out in the future is the main objective of this workshop. The creation of this liaison group aims to establish a network of contacts involved in the development of the SRI in Spain so that the three projects work in line with the same objectives and thus have more weight in the administration.

- Establish among the three projects, a closed liaison group with core members, presented by those who attended the workshop and other representatives who have not been able to attend but will participate in future events.
- Keep an ongoing active participation in the events organized by the other sister projects and encourage the attendance of the stakeholders who participated in ours.
- Establish a common space to share documentation on the evolution of the implementation of CRS in Spain.
- Interactions with cluster stakeholders will be requested on a regular basis for certain SRI issues
- Training of auditors.
- Proposal of buildings to carry out the first assessments.

4.8. Austria

4.8.1. Executive Summary

Blueprint Energy Solutions GmbH, as a project partner from Austria, organised on June 5th, at their offices based in Vienna (Am Gestade 3), within the framework of the LIFE SRI-ENACT project, a workshop on the implementation of the Smart Readiness Indicator (SRI) within the building stock in Austria.

A group of five experts participated in the first section of the conference ("Stakeholder Liaison Group Session"), comprising representatives of the project partners: SRI2Market, EasySRI, and of the Austrian Institute of Construction Engineering and the Institute for Sustainable Technologies. The event was followed by a hybrid mode focus group involving nine representatives of operators of private offices and residential buildings, representatives of digital innovation hubs and the energy community. Follow up interviews were also carried out after the workshop, with stakeholders who were not able to participate in person.

The first section started with a presentation of the SRI-ENACT project objectives and planned activities in Austria, which is already deeply in the pilot phase of the SRI implementation. Then, the focused discussion followed with the aim to cooperate with all sister-SRI projects and initiate some updates and changes on the current methodology in order to make it more usable for the Austrian national-specific requirements.

In the second section, the Focus Group discussion took place, where all participants also agreed on their joint participation at a national, central SRI event, organised in Austria on 11th October 2023.

4.8.2. Introduction

PRESENTATIONS

During the first section, the following presentations took place:

- Welcome and Introduction (Elena Boskov Kovacs)
- Presentation of the SRI Project (Elena Boskov Kovac, Boris Njavro)

A list of questions about SRI implementation was also presented. All answers are given at the end of this section of the document.

4.8.3. Stakeholder Focus Group (Interactive Discussion)

PARTICIPANTS

After the presentations, a focused discussion followed, with the participation of five experts. The participants in the discussion were:

Table 18 Austrian co-creation workshop participants

Nr	Participant	Organisation
1	Armin Knotzer	AEE Intec - INSTITUTE FOR SUSTAINABLE TECHNOLOGIES
2	Susanne Geissler	Sera Global - SERA — Institute for Sustainable Energy and Resources Availability
3	Wolfgang Thoma	OIB - Austrian Institute of Construction Engineering
4	Robert Stadler	OIB - Austrian Institute of Construction Engineering
5	Johannes Fechner	17und4
6	Elena Boskov Kovacs	BPE
7	Boris Njavro	BPE

The following people participated in the Stakeholder focus group hybrid meetings and interviews:

Table 19 Austrian co-creation workshop participants (hybrid meeting and interviews)

Nr	Participant	Organisation
1	Doris Oesterreicher	BOKU - University of Natural Resources and Life Sciences

2	Andrea Zirkl	AEE Intec – INSTITUTE FOR SUSTAINABLE TECHNOLOGIES
3	Andreas Tuerk	Joanneum Institute ¹
4	Camilla Neumann	Joanneum Institute
5	Clemens Mayer	Joanneum Institute
6	Vitaliy Krivorychko	Green Point – smart building operator
7	Ulfert Höhne	Board of Directors – OurPower Energy Cooperative
8	Miriam Fechner	ÖGUT - Austrian Society for Environment and Technology
9	Anna Katharina Beyer	INNOVATE – Digital Innovation Hub

During the introduction, all participants explained their role in the SRI implementation in Austria and their involvement in the different SRI projects: SRI2MARKET (AEE and OIB), easySRI (Sera Global) and SRI ENACT (BPE).

The current position about SRI implementation is neutral, but in case it should become obligatory (2026/2), serious changes in the methodology must be done in order for the projects to be able to support it in Austria.

IMPLEMENTATION PATHWAYS

By the moment the three sister projects on SRI (SRI-ENACT, SRI2MARKET and easySRI) were initiated, Austria entered in its SRI implementation pilot phase. The first Austrian Co-Creation workshop was a great opportunity to level everyone’s knowledge and information and to closely involve every partner in the future of SRI implementation in Austria.

The following are the main information, facts and standpoints provided during workshop, but also during hybrid meetings and interviews.

In previous projects (starting from 2018) and during the official pilot phase in Austria, colleagues from sister projects indicated that the SRI methodology has possibly two main flaws:

- Does not sufficiently differentiate between old and new buildings, and

¹ Joanneum Institute is involved in EXCESS Horizon 2020 project, also dealing with SRI topic

² It is considered that SRI becoming obligatory in 2026 is not realistic since its implementation will be based on the results of the pilots, which are not very positive, and on the revision of the Directive, which includes broad topics for the energy performance of the buildings, with lots of discussion ongoing.

- Does not correctly describe the need and incorporation of smart building flexibility services, which are in particular focus in Austria in view of the new policy changes associated with market development.

Substantial previous work has been performed to analyse options for SRI methodology changes and adjustments, followed by efforts in organising a new nation-wide stakeholder event in October, where latest proposed changes on the next steps of the official implementation will be presented to the Ministry. In terms of the Austrian national SRI pilot phase, it is currently done more as a research for investigating potential improvement of methodology via simulation, with only eight buildings included at this phase, and without placing focus on the SRI assessment, which is where SRI ENACT will provide valuable bottom up results and inputs.

Since the implementation of SRI is evident for the EU, the Austrian SRI framework is planned to be tailored further to its national context and all three sister projects with their key stakeholders should participate and contribute to it.

SRI PROJECTS COORDINATION

After presentation of the SRI-ENACT project, its objectives and planned outcomes, it was concluded that sister projects are complimentary on the SRI-ENACT's objectives to engage stakeholders in a co-creation process, to replicate the SRI pilot and develop policy recommendations. Two other projects also have as an objective to develop a web-based tool kit for the SRI assessment. Their main difference is that SRI-ENACT focuses more on the training of SRI auditors, exploring and developing concepts for the financing of building smartness upgrades, while demonstrating as well the potential market value of smart readiness of buildings. That was found very interesting for the Austrian case as well, since no previous project was focused on the financial benefits of SRI.

Since all projects are developing different toolkits with partially shared scope and design, it makes sense to coordinate actions and exchange knowledge and ideas, even exchange findings and reports, in order to avoid overlapping.

Also, all projects are working with the same government stakeholders, agreeing to try to avoid sporadic and uncoordinated focus group activities and approach the stakeholders by leveraging existing communication network channels. SRI-ENACT Austrian partner BPE, during the establishment of the Liaison group, identified an extended group of stakeholders that they will engage separately on a more frequent basis.

Since the Austrian pilot is being co-developed as a joint endeavor involving key stakeholders and policy makers together with SRI2MARKET and easySRI projects, it was decided that all communication activities will go through one communication channel. Furthermore, it will include other EU funded projects dealing with SRI as well (e.g.,

EXCESS project managed by Joanneum Institute or DEDALUS project managed by BPE), as well as stakeholders from the commercial and real estate sectors. In other words, it was clear that involving SRI ENACT with its key stakeholders (e.g., energy communities (i.e., OurPower), flexibility providers and aggregators (i.e., Green Point building operator), would be highly beneficial for the Austrian SRI implementation.

STAKEHOLDER LIAISON GROUP

At this phase, participants agreed for the future activities to share information about stakeholders, and to facilitate the upcoming processes of finding a pool of buildings, especially during assessment phase of the SRI-ENACT project.

Regarding stakeholders, it was announced that a large, central, event will take place on the 11th of October 2023, with a preparation meeting on 29th June. BPE was invited for that preparatory meeting, as part of the SRI cluster. On that meeting all parties involved will exchange information on SRI implementation and the status of their projects. Several discussions will be also held, focusing on flexibility services for buildings, energy savings potential and auditing process.

As part of other SRI related activities, a survey with stakeholders was conducted to find out their preferences regarding the features that propose to be included in the future SRI tool.

SRI METHODOLOGY IN NATIONAL CONTEXT

Regarding the process of analyzing the SRI methodology, Austrian partners are looking for ways to change it and further contextualise it nationally. They are aiming to optimise Method B, proposed by the EU commission, to be more appropriately linked to providing flexibility services. Austrian partners see this as one of the most important aspects to be addressed during the next steps. Several technical papers have been published on that topic, i.e., “Supporting the Smart Readiness Indicator—A Methodology to Integrate A Quantitative Assessment of the Load Shifting Potential of Smart Buildings”, by Thomas Märzinger and Doris Österreicher, as the result of the SRI study done in 2019-2020.

During the pilot phase in Austria, two new methods have been investigated, named SRI Austria and SRI BOKU³ where BPE partner from SRI ENACT project will also contribute with KPIs for flexibility services of smart buildings.

While SRI EC and SRI BOKU approaches are merely quantitative, SRI Austria is approached both qualitatively and quantitatively.

Comparison of key parameters in the three methodologies

Parameter	SRI EC	SRI Austria	SRI BOKU
Storage	x	x	x
Load	x	x	-
Total energy demand	-	-	-
Grid interaction	-	x	x
Heating	x	x	x
Cooling	x	x	x
Ventilation	x	x	x
Hot water	x	x	x
On-site energy generation	x	x	x
Dynamic building skin	x	x	x
Monitoring and Building Management System (BMS)	x	x	x
User Integration	-	x	-

Figure 40 Austria - Comparison of key parameters in the three methodologies

Comparison of the results has been indicated in the following graph:

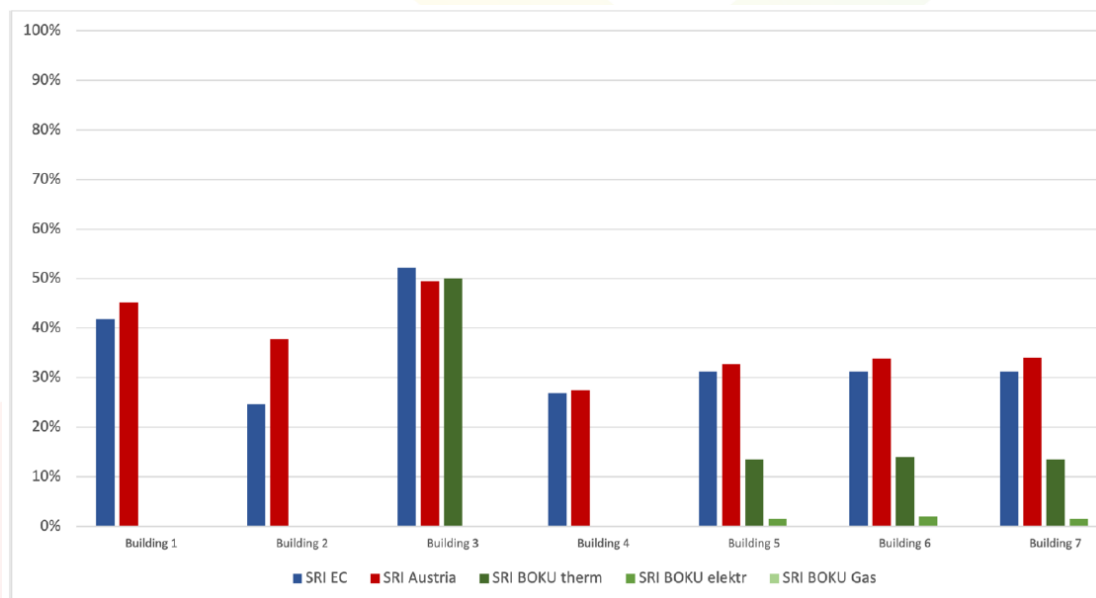


Figure 41 Austria - Comparison of key parameters in the three methodologies (2)

³ University of Natural Resources and Life Sciences

The conclusion from these tests have been listed as:

A **qualitative (subjective) approach** leads to a **series of assumptions** and thus different results by different users. A purely qualitative approach is thus **highly assessor-dependant**.

A purely objective and data-driven approach can be limited in terms of a very comprehensive result. The results will highly depend on the **quality and availability of the data** at the time of the assessment (e.g. at the design stage).

The **time and data-availability factor** needs to be taken into account.

More case-studies need to be analysed to draw more comprehensive conclusions.

There is no best methodology, as it depends on what the key driver should be...

Figure 42 Austria - Comparison of key parameters in the three methodologies (3)

Without changes to the methodology, they will not advise SRI implementation in Austria.

To support that decision, Danish pilot was put as an example. It was mentioned that its final results came in only 6 months which was not useful for them, since no stakeholder saw value in its implementation.

In general, other options are being searched to make SRI attractive and useful for the stakeholders in increasing the value of the buildings or providing other technical and commercial benefits, i.e., to be the mark of the building excellence.



Figure 43 Austrian co-creation workshop picture

ADAPTATION OF THE SRI METHODOLOGY TO NATIONAL CONTEXT

Question #1

According to the EU SRI methodology, there are 5 possible ways of implementation. Which of them is considered more appropriate for the Austrian context and if none, is there a need to create a new methodology?

Answer #1

YES – for the energy efficiency SRI pillar with qualitative measurements; NO – for the Flexibility pillar with quantitative measurements. Linkage to BACS

Question #2

Are there obstacles/challenges to the implementation of SRI?

Answer #2

Yes. Main obstacle is that methodology is not appropriate for the Austrian context. No stakeholder sees current methodology as useful or sufficient for any further actions

Question #3

There are 3 methods to estimate SRI. Which of them fits the Austrian context better?

Answer #3

B Methodology, adopted in the Austrian context.

Question #4

Each SRI method includes a different set of services, grouped into several domains (e.g., heating, cooling, domestic hot water, etc.). Which of these areas should be emphasized in the Austrian context?

Answer #4

Energy flexibility and storage is seen as the main services that must be more emphasised in the new methodology.

Question #5

At what level should the SRI weighting be adjusted (eg climate zone, new buildings, renovated buildings, building area, etc.)?

Answer #5

In all areas, especially in Flexibility.

SRI TRAINING

Question #6

Which experts are most suitable for additional education to become certified SRI experts?

Answer #6

There is no clear distinction for the future SRI experts in Austria. It should be on a voluntary basis.

Question #7

What skills should SRI experts acquire?

Answer #7

N/A

Question #8

What should be the training/education process for obtaining an SRI certificate?

Answer #8

No preferences. Perhaps short courses (online).

Question #9

What form could the SRI certificate take and what should be the procedure for its acquisition?

Answer #9

Digital form certificate after successfully finishing the course. No official exam is required.

Question #10

Will it be necessary to have a registry for certified SRI experts?

Answer #10

No.

PILOTING AND EVALUATION OF SRI PROGRAM

Question #11

What type of buildings (residential, non-residential, new construction, renovated building, etc.) should be used as a pilot for the implementation of SRI?

Answer #11

Pilot is already ongoing. Various types of buildings are used. See the table below.

Table 20 Types of buildings and data as part of SRI pilot project in Austria

	Building 1	Building 2	Building 3	Building 4	Building 5	Building 6	Building 7
Building type	office	residential	office	university / office	multi-family residential	multi-family residential	multi-family residential
Year of construction	2012	2004	2008	2020	2017	refurbished 2017	refurbished 2017
Gross floor area [m²]	8820	417	9430	4080	743-1080	227	665

LEGISLATIVE FRAMEWORK OF SRI

Question #12

What policies do we need in order to create a regulatory context that supports the implementation of SRI in the Austria?

Answer #12

Adjustment to the SRI methodology and alignment with other EU policy directives (e.g., related to market, flexibility and data)

FINANCIAL FRAMEWORK

Question #13

What kind of funding schemes do we need to facilitate the process of implementing SRI in the Austria?

Answer #13

Funding scheme that would stimulate SRI improvements in order to give additional value to the building owners and tenants. SRI could be an additional grade of the buildings, as well as an addition to the energy performance certificate.

4.8.4. Comparing the current SRI landscape in Austria with the insights of the stakeholder focus group

Table 21 Summary of the key differences between the current SRI landscape in Austria, as presented in D2.1, and the insights drawn from the stakeholder focus group

Thematic area	Current landscape (D2.1)	Stakeholder engagement	Alignment
<i>SRI implementation pathway</i>	<ol style="list-style-type: none"> 1. Linkage to the EPCs 2. Market-based scheme based on self-assessment and 3rd party engagement for those willing to pay 	<ol style="list-style-type: none"> 1. YES – for the energy efficiency SRI pillar with qualitative measurements; NO – for the Flexibility pillar with quantitative measurements 	Partial

		2. Linkage to BACS	
<i>Trained SRI experts</i>	Engineering consultants registered in the national register	Engineering consultants registered in the national register	Total
<i>SRI evaluation method</i>	Method B	SRI Austria 2.0 method – Energy efficiency pillar comparable to Method B	Partial
<i>Pilot building types</i>	All building types that are required to issue an EPC	Focus is on residential, office, educational and healthcare buildings	Total
<i>Emphasised technical domains</i>	Flexibility and Load shedding possibility	Flexibility and Load shedding possibility	Total
<i>Weightings' tailoring</i>	Specific weighting for Flexibility options	Specific weighting for Flexibility options	N/A

4.8.5. Conclusions and next steps

During the stakeholder’s discussions, the main reason for the development of the specific SRI Austria methodology was that the assessment methodology proposed currently only assesses the equipment with technologies and services, but provides no further information about their performance when operated in the building. It does not focus on the increasing energy flexibility when evaluating the services, which many stakeholders have criticized nationally and internationally.

The SRI AUSTRIA proposal is based on the integration of the process of issuing energy certification. The present project conceived an Austrian-specific Smart Readiness Indicator as a rating scheme for intelligent buildings, taking into account the EU-VITO study (see [here](#)) but with an independent focus on three specific pillars:

1. Flexibility, load shifting - Indicators/assessment for loads, flexibility and grid efficiency → In the interest of CO₂ reduction and energy suppliers.
2. Energy-efficient operation incl. Renewable Energy – Evaluation of intelligent equipment features,

such as technologies and services → In the interest of the economy.

3. User needs – Evaluation of comfort, health, ease of use, privacy, security. → In the interest of the user/resident.

The total of seven impact areas (impact criteria) from the VITO-EU proposal have been condensed to four impact areas and are always placed as target impacts above the three pillars of SRI Austria. These are as follows:

- Sustainability of the overall system (in terms of CO₂ emissions and primary energy demand)
- Energy flexibility / grid efficiency
- Health, well-being and comfort
- Information, maintenance, error warning, user-friendliness, intervention options

With dynamic methods, the first three areas could be evaluated with sufficient precision, while the four impact area can be evaluated at least semi-quantitatively. Overlaps in the assessment within the individual components of the three pillars of the SRI Austria were deliberately accepted in order to significantly increase operationalization or practicability and coherence with the EU proposal.

The SRI should, at least, be able to quantitatively identify demand response potential and good comfort conditions, for example through simulations that can make quantitative statements on this.

The specification of the SRI in the Energy Performance Certificate (EPC) is comprehensible to most of the stakeholders interviewed in Austria and is also viewed positively in all SRI project consortiums, because it ensures that both the energy efficiency (heating demand and final energy demand) and the renewable energy supply for buildings will remain. However, these values are usefully supplemented by the SRI as a "dynamic" pillar in a highly volatile, future renewable, CO₂-neutral energy system. SRI could be integrated in the energy performance certificate in terms of process - the importance attached to the SRI is, of course, relevant here: The authors advocate a similar as primary energy demand, but even more important should remain the heating demand and CO₂ emissions in the energy certificate.

The energy performance certificate currently represents and evaluates the energy efficiency of buildings and the possible supply of renewable energy. For the calculation, stationary methods are used, which are defined in a number of standard packages (e.g., thermal envelope ÖNORM B 8110-6, building services and energy supply in H5055ff). These two areas, energy efficiency and renewable energy, are to be complemented by a third area, SRI Austria, which evaluates the dynamic behavior of buildings, their control and the interaction with the users in relation to the defined target values (e.g., CO₂ emissions, comfort) as potential.

The decision that SRI should be introduced and that Austria should take an active role in its development is clear from surveys and interviews in the SRI Austria project; also, that the SRI, if adopted, should preferably be evident

in the energy certificate.

The methodology for calculating an SRI should be further developed - in line with the results of the stakeholder process – on the basis of the project results available hereafter.

The services specified by the EU and VITO are currently – like the entire EPBD – generally focused on a single building. However, the challenges of the future can only be met in a building network or at the settlement or neighborhood level, especially when it comes to energy flexibility and balancing energy generation and consumption. However, the third objective on SRI from the EPBD 2018 addresses this aspect indirectly. Therefore, services that also consider this aspect would be important in the longer term. Of course, impact areas and domains would also have to be adapted to this end.

The additional evaluation of the buildings by an SRI in the energy certificate according to the proposed method requires, at least in the 2nd pillar, persons with a special competence, e.g., knowledge of standards, and would in any case make the preparation of the energy certificate more expensive. The VITO consortium estimates with about one hour, but other stakeholders EU – far more – this has to be considered. A concentration of domains and services on a few important points that are particularly relevant for intelligent operation in a sustainable energy system, would also be necessary for this reason.

Summary points:

- The goals for the introduction of the SRI for buildings are formulated in the EPBD 2018.
- The intelligent adaptation of buildings to a decarbonized energy system that will be powered by renewable energy sources in the future is an overarching goal of the SRI Austria.
- The SRI is intended to stand on three pillars, of which quantifiable flexibility or load shifting is the most important at present.
- The impact of technologies and services should be quantified, as far as possible, in terms of the four areas of impact that are essential for achieving the goal.
- The weighting of the services is based on the overriding targets (CO₂ reduction, PE reduction) and long-life usage options.
- In a first step, the calculation of the SRI Austria should be possible with a few additional entries in the energy certificate.
- In the future, the SRI can be used as a correction factor for the results of the energy performance certificate (EEB, PEB, CO₂).

After the co-creation workshop in Austria and additional meetings and interviews, BPE established the required

connections with all relevant stakeholders in Austria. Some of the Austrian workshop experiences should be presented to the partners in SRI-ENACT project to gather more information and suggestions.

New information acquired allows BPE, to objectively analyse the SRI Austria approach and prepare proposals for the faster and easier implementation, all based on the relevant and useful information from other project partners.

Next steps:

At the end of the discussion, it was concluded to closely cooperate between projects and to facilitate BPE in their activities for:

- Get in contact with major stakeholders in Austria (prepare meeting on the 29th of June and Stakeholders meeting on the 11th of October).
- Gather the potential SRI auditors for the training purposes.
- Pick the required buildings for the assessment (STRABAG, Green Point operator, City of Vienna...).

In return, BPE will engage additional stakeholders for the Austrian groups with specific relevance in the flexibility market and services. Like energy communities, flexibility providers and aggregators.

Also, colleagues will provide the materials describing in more details their proposals for the change of the methodology and what they consider to be crucial for the future SRI implementation in Austria.

5. Co-creation workshops cross-country comparative tables

Table 22 Cross-country comparison of SRI co-creation workshops

	Austria	Bulgaria	Croatia	Czechia	Greece	Latvia	Romania	Spain
Total members of liaison group	5	11	12	10	20	15	9	9
Number of co-creation workshop participants	9	11	15	9	35	17	12	11
Date of co-creation workshop	5.6.2023	18.5.2023	22.5.2023	31.5.2023	4.5.2023	9.5.2023	30.5.2023	21.6.2023
Other LIFE projects present in country	SRI2Market, EasySRI	SMART ²	SRI2Market	None	EasySRI, SMART ² , SRI2Market	None	SMART ²	SRI2Market, EasySRI
General attitude towards SRI	Neutral, need of national modifications	Positive, support of SRI indicator	Positive, linkage to EPC	Neutral, market-based tool especially in the first years	Positive	Positive-neutral	Neutral	Neutral
General comments	Preferably own or modified SRI methodology	Need to cover variety of buildings, need of obligatory scheme	Need of two country climate zones: coastal and continental	Expected challenging implementation, low interest in smart solutions, emphasis on non-residentials	Emphasis should be placed on large buildings of the tertiary sector	Mainly use for commercial and public buildings	Expected challenging implementation, low awareness, emphasis on new buildings and large renovations, non-residential	Need of sufficient testing phase

Table 23 Cross-country comparison of SRI tailoring topics

	Austria	Bulgaria	Croatia	Czechia	Greece	Latvia	Romania	Spain
SRI implementation pathway	A - linkage to EPC (modified) and E - linkage to the BACS	A - linkage to EPC, obligatory for non-residential buildings	A - linkage to EPC; E - linkage to BACS	C - market-based tool	A - linkage to EPC; E - linkage to BACS	A - linkage to EPC	B - Linkage to the construction of new buildings and major renovations of existing buildings; A - linkage to EPC	<i>Will be addressed in the future</i>
SRI experts	Registered engineering consultants	Certified energy auditors	Energy auditors; members of technical chambers	Registered energy experts	Energy inspectors and auditors	Energy inspectors and auditors	Energy auditors	Energy auditors
SRI method	Specific SRI Austrian methodology	Inconclusive	Method B; method A for special cases	Method B	Method B	Method B	Method B	Method B

Pilot building types	residential, office, educational, healthcare	Obligatory for non-residential, selected 11 types of buildings	Large private and public buildings; new buildings and major renovations	Mainly non-residential, need of sufficient number of buildings (100 and more)	Offices, hotels	Commercial, public	Educational, public health, offices, multi-family houses	Mix of buildings
Technical domains	Emphasis to quantifiable flexibility and load shifting	Differentiate type of buildings	Emphasis on heating, cooling, monitoring and control	No specific modification	Emphasis on monitoring and control, cooling, heating	Heating, hot water, ventilation, cooling	Heating, cooling, electricity	Emphasis on flexibility and energy storage
Weight factors	Specific weighting for Flexibility options	Per type of buildings (as not set in SRI methodology) and 3 per climate zones (neither in SRI methodology)	Per climate zone (2 types for Croatia: coastal, continental), type of building, building typology	No specific modification, type of buildings distinction needed	Per climate zone and per type of buildings (residential, non-residential)	<i>n/a</i>	Per climate zone and per type of buildings	Climate zone within the country
Financing	Stimulation to support SRI	Need of financial support at least during the first year	National programme for energy renovations	Financing would be good, but expected none	<i>n/a</i>	To be evaluated	Needed for successful implementation	<i>n/a</i>
Legislative framework	<i>n/a</i>	Need to national legislative adoption	<i>n/a</i>	None or only required changes	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>

6. Conclusion

The D2.2 SRI-ENACT Methodology with national adaptations (1st Release) is the first comprehensive overview of SRI national tailoring adaptations. This version is based mainly on national co-creation workshops and first Stakeholder Liaison Group meetings. In comparison to the SRI national landscape (D2.1), the presented overview and feedback in D2.2 is significantly more accurate and corresponds to the real national needs and contexts. The second version of national adaptations (D2.3) will be mainly amended by results and feedback gained from another round of stakeholder focus groups that will be focused on interviews.

As the co-creation workshops in pilot partners' countries had sufficient participation representing key national stakeholders, authors expect that some tailoring aspects and thoughts will be even more accurate in D2.3, but the majority of each national tailoring feedback is assumed to remain similar to this overview.

Some tailoring topics have exceptional uniformity across pilot partners countries. For example, regarding the SRI implementation pathway, nearly all countries agree on linking SRI to EPC (at least as the second option). There are two exceptions: Czech Republic prefers SRI as market-based tool and Spain will address this issue in upcoming months. All countries agree on SRI method B to be employed as the primary method for assessing buildings (exception: Austria needs its own SRI methodology adaptations and Bulgaria will address this issue in the upcoming months). Furthermore, all pilot countries agree on some kind of national registered energy experts who will be able to proceed with SRI evaluations.

Regarding pilot building types, pilot partner countries have various visions. Mainly, the non-residential buildings were highlighted as appropriate for pilot assessing. Also, opinions of having a mix of types of buildings, sufficient number of buildings and mainly new and renovated buildings to be used during the SRI test phase were mentioned several times. Regarding technical domains and weighting factors modifications, the gained feedback differs a lot. Some countries stressed that climate zone should be distinguished even within the country (Croatia, Spain) and should be different for each building types (Croatia, Greece, Romania and partly Czech Republic).

For more details, below you can find the cross-country comparison matrix (Annex 1).

Annex - Stakeholder Focus Group indicative structure

Introductory (optional) Question:

What can we (/would like to) achieve as a country by adopting SRI?

Other (optional) questions:

What should be the timeframe for the SRI implementation in Greece?

GUIDING QUESTIONS

1) Tailoring SRI Methodology

PPT with 5 implementation pathways

Q1: According to EU SRI Methodology there are 5 implementation pathways. Which one(s) is/are considered more suitable for the Greek context and if none, is there a need to create a new methodology?

Q2: Are there any barriers/challenges for implementing SRI in?

2) SRI Training

Show list of professions (engineers, energy consultants, energy auditors, energy inspectors, ESCOs, etc.) (more than 1 option)

Q3: Which professionals from the list below are more suitable to become certified SRI experts?

Then, boost the conversation with the following sub-questions

- **What skills do SRI experts need to acquire? (e.g legislative, financial, lack of awareness)?**
- **What should be the training process to acquire an SRI certificate?**
- **What form an SRI certificate could take and what should be the process to acquire it?**
- **Will it be necessary to have a registry for the certified SRI experts?**

3) Tailoring SRI Methodology

PPT with 3 methods

Q4: There are 3 methods for assessing SRI. Which one(s) suit(s) better to the Greek context?

PPT with sets of domains (services)

Q5: Each SRI method includes a different set of smart-ready services, clustered in several domains (e.g., heating, cooling, domestic hot water, etc.). On which of these domains should be laid emphasis upon, in the Greek context?

4) SRI pilot phase

PPT with list of types of buildings

Q6: Which type of buildings (residential, non-residential, new constructions, renovated buildings, etc.) should be used as pilots for the SRI implementation?

5) Tailoring SRI Methodology

PPT on default EU weightings/adjustments

Q7: At what level the tailoring of the SRI weightings should be carried out (e.g., climate zone, new buildings, renovated buildings, area of buildings, etc.)?

6) SRI Policies

PPT with established EU initiatives to foster the SRI uptake (e.g., Building logbooks, Level(s), Renovation passport, etc.)

Q8: What policies do we need in order to create a supportive regulatory context for the SRI implementation in Greece?

(e.g. Need to (i) amend the legislative framework, including KENAK and TOTEE (ii) identify trigger points for the SRI implementation and (iii) make a link with other tools (e.g. EPC, renovation passports, energy audits, etc.)

7) SRI Financing Tools

Q9: What type of financing schemes do we need in order to facilitate the SRI implementation process in Greece?

KEY INSIGHTS

LIAISON GROUP' S NEXT STEPS