

Smart Readiness Indicator for buildings – 2nd Technical study
1st stakeholder meeting, 26 March 2019
Albert Borschette Congress Center, Rue Froissart 36, Brussels

(The meeting invite was sent to all registered stakeholders of the SRI study. The meeting was live-streamed online)

Opening of the meeting by Claudia Canevari – European Commission, DG Energy

The meeting was opened by Ms. Claudia Canevari, head of the Unit Energy Efficiency at DG Energy. Ms. Canevari firstly introduced the energy policy context of the European Union, mentioning that the Commission adopted a communication on the Energy Union in 2015 and the Clean Energy for All European Package in 2016, which includes a consistent set of ambitious proposals for revising the policy framework the EU energy sector.

Ms. Canevari underlined the importance of energy efficiency and energy flexibility and highlighted that digitalization of energy is a key component in the policy framework. She emphasized that buildings have a key role to play in digitalization and enhancing energy efficiency and that the Smart Readiness Indicator (SRI) under the EPBD would help to achieve these targets. The SRI is particularly illustrative of the stronger focus on smart buildings in EU energy efficiency policies. The aim of this indicator is to ensure the smartness of the buildings can be rated with the aim to express the value added of digitalization to building owners and occupants, so they can take that value into account in their investment choices. The SRI must address three key aspects:

- The ability of a building to adapt its operation mode in response to the needs of the occupant paying due attention to the availability of user-friendliness, maintaining healthy indoor climate conditions and ability to report on energy use;
- The ability of a building to maintain energy efficiency performance and operation through the adaptation of energy consumption, for example, through use of energy from renewable sources;
- The flexibility of a building's overall electricity demand, including its ability to enable participation in active and passive as well as implicit and explicit demand-response, in relation to the grid, for example through flexibility and load shifting capacities.

Lastly, Ms. Canevari stressed that the development of the SRI would follow an open and transparent process, and that the contributions of stakeholders - both during the stakeholder meeting and other interactions – are well appreciated.

Brief introduction by Stijn Verbeke – EnergyVille/VITO

Mr. Stijn Verbeke (EnergyVille/VITO) welcomed all stakeholders on behalf of the study team and introduced the team, which was represented by Paul Waide (Waide Strategic Efficiency Europe), Dorien Aerts (EnergyVille/VITO), Glenn Reynders (EnergyVille/VITO) and Yixiao Ma (EnergyVille/VITO). An overview of the meeting agenda was presented.

Policy making process by Sylvain Robert – Policy Officer, European Commission, DG Energy

Mr. Robert started by expressing his appreciation for the large number of stakeholders and their interest in the study. He emphasized how the input from stakeholders is of key importance in the open and transparent process that is followed in the development of the SRI.

Mr. Robert clarified the policy making process to which the SRI will be subject. According to Art. 8 of the EPBD, the SRI is an instrument that has to be established by two legal acts. The first legal act covers the definition and calculation methodology of the indicator; the second legal act covers the implementation arrangements of the scheme. The legal acts will be prepared and adopted by the Commission, and the policymaking process means the preparation and adoption of these acts. Mr. Robert explained that one of the reasons for the SRI not being defined in the directive itself is due to its inherent technical complexity.

Mr. Robert also stressed that Article 8 and Annex Ia of the EPBD provide a clear legal framework for the SRI. It was explained how the two legal acts will be prepared via two inter-related processes. Firstly, a technical process – informed by this technical study – which feeds the policy making process. Secondly, the policymaking process itself, which aim is to prepare the adoption of the SRI legal acts. The Commission is responsible for the policymaking process, while the study team lead the technical study under the supervision of the Commission. The results of the technical study will provide technical inputs to the policymaking process.

Mr. Robert highlighted that a first technical study was completed in August 2018, and that this made the first proposal for the SRI's calculation framework. The second study will give recommendations for consolidating the proposed calculation framework and to investigate the possible implementation pathways of the scheme. The second study is supposed to support the policymaking process until the adoption of the SRI legal acts. Policy supporting consultation will begin in a subsequent step. Mr. Robert underlined that technical consultations are widely open to stakeholders and that Member States are also invited to participate.

Mr. Robert presented the schedule of this process and indicated that the aim is to have the SRI acts adopted by mid-2020.

Presentations by the study team

Brief outcomes of the first SRI study

Mr. Stijn Verbeke presented a brief summary of the outcomes of the first technical study on the SRI. Mr. Verbeke referred to the full report and the executive summary that are available on the project website. In his summary, Mr. Verbeke emphasized the three aspects to smartness as defined in the EPBD (see “Opening” section of these minutes).

Additionally, Mr. Verbeke introduced the proposed calculation methodology, together with the services, domains, and impact categories introduced in the first technical study. The example of the EnergyVille office building was given, describing the process for on-site assessment by the assessor as well as the triage process used to identify relevant services in the building. With the proposed methodology, the SRI score is expressed as a percentage (e.g. the EnergyVille example building got 77%). Mr. Verbeke stressed that there might be other ways to communicate the resulting score to the occupants and facility managers, e.g. by an alphabetical smart readiness class. He also clarified that the score obtained by the EnergyVille building was very high given this example constitutes a modern and very well-equipped office building. Reaching an SRI score of 100% will hence be extremely ambitious and should normally not be achievable for current buildings, in order for the SRI to be future-proof.

Work plan and task descriptions of the second SRI study

Mr. Paul Waide (Waide Strategic Efficiency Europe) and Mr. Glenn Reynders (EnergyVille/VITO) further presented the work plan on different tasks, including the objectives, activities, approaches and methodologies of each task:

- Task 1: Technical support for the consolidation of the definition and the calculation methodology of the SRI;
- Task 2: Investigation of SRI implementation pathways and of the format of the SRI;
- Task 3: Guidance for effective SRI implementation;
- Task 4: Quantitative modelling and analysis of the impact of the SRI at EU Level;
- Task 5: Stakeholder consultation and study website;
- Task 6: Support to the policy making process.

Overview of main questions guiding the study

Mr. Paul Waide presented 8 guiding questions that have been formulated in order to assess the progress throughout the study. These questions were:

- Is the consolidated SRI scheme complementary to relevant existing initiatives and schemes, e.g. Energy Performance Certificates (EPCs)?
- Does the SRI provide a fair and well-balanced representation of smart technologies while remaining technology neutral?

- Is the SRI framework applicable to different building contexts and typologies?
- Is the SRI scheme practically applicable in an efficient and cost-effective manner?
- Is the format of the SRI appropriate?
- Does the SRI adequately address interoperability, interconnectivity and cybersecurity?
- Are the implementation pathway(s) and associated activities and processes proposed by the study adequate to ensure optimal establishment and implementation of the SRI scheme with maximum impact?
- Is the process for consolidating/updating the SRI, scores or presentational format adequate?

Process for stakeholder interactions

Ms. Dorien Aerts (EnergyVille/VITO) presented the stakeholder consultation process that will be a key part of this study and is linked to all other tasks of the project.

There are 7 different ways for the stakeholders to interact with the study team, as follows:

1. Stakeholder consultation meetings planned throughout the project: the second stakeholder meeting is tentatively planned on 9 October 2019, while the third one will be in mid-March 2020, and the exact days of these two meetings will be further confirmed and communicated via the project website and update emails. A total of 140 stakeholders registered for this first meeting, which goal was to present the ongoing work and have an open discussion with stakeholders regarding the work. Prior to the first stakeholder meeting, a questionnaire was circulated, whose results were also presented during the meeting (see below).
2. Two topical groups: the aim of topical groups is to lead in-depth discussions within a compact group of experts and on a more focused scope. Two topical groups have been set up. The first one (topical group A) focuses on the SRI value proposition and implementation; The second one (topical group B) focuses on the SRI calculation methodology. The topical groups consist each of 20-25 experts representing different and complementary European business sector organizations and experts from some Member States.
3. Testing the SRI and providing feedback on the format of the SRI and assessment guidelines. The testing period is foreseen to start in September 2019.
4. Consumer focus groups will be organized to test the understanding of the SRI by end-users. Distinction is being made between end users in the residential sector which will be targeted in the focus groups (which are about to start) and end users in the non-residential sector, e.g. facility and property managers. Given the technical background of non-residential end-users, their views will be surveyed thanks to questionnaires and/or interviews.
5. Stakeholders will have the opportunity to submit written comments on draft deliverables.
6. Expert feedback: the study team welcomes stakeholders to contribute with their expertise. Stakeholders are invited to contact the study team in case they wish to give more detailed feedback on specific topics.

7. The project website will be updated regularly to keep stakeholders informed on the progress of the study, as well as on upcoming events.

Overview of working assumptions

Mr. Stijn Verbeke gave an overview of the current working assumptions. The main points were presented as follows:

- The overall concept of the service catalogue seems to be generally well supported though the study team received comments on adding new services/domains and will evaluate their inclusion. Thereby the study team will devise a technical process for the consolidation of new services / domains in the service catalogue, using example services and/or domains (e.g. lifts) as test cases for this process.
- The 8 impact categories defined in the first technical study need to be reevaluated. As an alternative, using the 3 EPBD impact categories could be an interesting option. The weighting of impact categories should also be evaluated as in the first technical study, the 8 impact categories were implicitly weighted equally – which was a simplifying assumption. Inputs from the stakeholders will be key not only in identifying and evaluating alternatives to this assumption but also in defining a consolidation framework for setting these weightings. Mr. Verbeke stressed that the weighting factors will not be decided by individual assessors but will be given by the SRI scheme (though the consortium is open to explore approaches. Nonetheless, the weighting scheme might need to be adapted based on context, such as climate zone and building type.
- Preconditions/prerequisites to issuing an SRI were mentioned in the stakeholder comments. For example, stakeholders would be supportive of mandating a minimum level of energy efficiency to allow for an SRI to be issued. The consortium clarified that such questions were more relevant for implementation than for the SRI calculation methodology itself, which was agnostic in this regard.
- The effort, time and cost needed to assess the SRI and the added value of the SRI need to be balanced. Greater assessment effort should equate to a higher value of the SRI, but also requires more evaluation time and higher cost. This balance would probably differ based on the building type, i.e. individual homes, large hospitals and offices.
- Three potential assessment ways were proposed for consideration: a simplified online assessment (A), an (on-site) assessment by an expert third-party (B), an in-use building performance-based self-assessment (C). For a first version of the SRI, the study consortium intends to focus on options A and B, but also plans to investigate option C for future evolutions of the SRI.

Overview of the stakeholder questionnaire results

Ms. Dorien Aerts presented the results of the stakeholder questionnaire which was circulated prior to the stakeholder meeting. In total, 81 respondents from different countries answered the questionnaire (which will remain open after the meeting for further consultation). The majority of the respondents represented large business organizations and research institutes. The outcomes were discussed in relation to the working assumptions of the study team. The main conclusions, based on the answers received at the time of the meeting, were as follows:

- In both residential and non-residential sectors, information to occupants (and facility managers) is considered an important goal. Relevant feedback includes information on available smart ready services, additional services that could be deployed and insights on smart readiness upgrading.
- In both residential and non-residential sectors, design phase guidance on building smart readiness is an important goal for both new built and renovation.
- Comparison between buildings (benchmarking) is considered to be more important for non-residential buildings than for residential buildings.
- Contribution of smart readiness to building market positioning seems to be a lower priority.
- Grid operator insights become more relevant for non-residential buildings.
- The majority of respondents agree that the provision of recommendations is needed together with the SRI: either personalized or generic recommendations.
- A majority of the respondents support the distinction between a light version of the SRI (considering only a limited set of services) and a more detailed version.
- Most of the respondents support the working assumption of SRI self-assessment for the light version and a 3rd party assessment for the detailed version.
- With respect to the assessment time, the majority of respondents estimated that half a day to one day would be an acceptable time to assess the SRI for a non-residential building of approximately 1000m².
- The majority of respondents would prefer both a single overall score and sub-scores for each impact category. Others generally preferred just having scores per impact category. Only very few respondents prefer only having a single overall score.
- The majority saw the need to adapt the calculation method to specific conditions, such as making a distinction between residential and non-residential buildings and adapting it to the climate. Besides these, there were other proposals such as size, age and type of the building.
- The majority of respondents think that the SRI should apply distinct weightings or include additional services for different non-residential building types (e.g. offices, health care, educational buildings, etc.).
- Answers suggest that a possible ranking of the importance of non-residential building types in the SRI development process is: offices come first, healthcare and educational buildings are also a high priority.

When comparing the results of the stakeholder questionnaire to the working assumptions, the following conclusions can be made:

- Both a single weighted score and a score for each impact category are considered relevant. This indicates that both the definition of the impact criteria and the weightings needed to obtain a single score are a priority for the study team.
- The study team will further investigate tailoring the methodology to local context and building usage. This includes the definition of weighting factors and the possibility to add services for certain building usages (e.g. healthcare, educational buildings, etc.).
- Further analysis is needed to balance end user expectations (e.g. personalized recommendations) with assessment effort.
- The general concept of having a simplified online quick-scan as well as an expert SRI assessment is well supported.

Feedback from stakeholders on the consultation process

Clarification on the topical groups

One stakeholder asked for more information about the members of the topical groups. The study team clarified that they firstly needed the consent from the topical group members on sharing this information, and that afterwards this information would be available on the project website.

Note: most of the topical group members have consented to share their information on the project website. A list of topical group members is attached at the end of this document.

Suggestion for a collaborative tool to support stakeholder consultation

One stakeholder asked if there could be a tool for collaborating and sharing contributions among stakeholders, e.g. wiki. The study team answered they would look into the possibility of organizing this and find the best possible platform for this process. One possibility could be to publish stakeholder contributions on the project website under a dedicated item.

Comment on adding new service and impact category

One stakeholder asked about a possible smart ready domain for elevators to be included in the catalogue and about the treatment of impacts on comfort and convenience. The stakeholder mentioned as an example waiting time at the entrance, which can be an interesting proxy for measuring convenience. The study team replied that such services were not part of the service catalogue proposed by the first SRI study. The study team will now revise this service list and, together with stakeholders, discuss possible approaches to update the service catalogue during and after the project. The study team imagines that updating will be necessary to deal with fast evolving and disruptive technologies on the market.

In a second comment, the stakeholder questioned how comfort and convenience were to be measured in the SRI scheme. The study team replied that some of the impacts (e.g. energy efficiency) are directly quantifiable, while e.g. convenience and information provision are not well suited for a quantitative analysis. Therefore, the study team will work together with experts, the Commission and the Member States to identify and consolidate metrics to express these types of impacts in the most appropriate way.

Clarification on SRI testing

One stakeholder asked whether his understanding that only 20 buildings would be considered to test the SRI methodology was right. The study team replied that the number of buildings involved in the testing phase would not be limited, and that all stakeholders were encouraged to join the testing phase on a voluntary basis.

Clarification on the scope of the SRI in relation to other certification schemes

One stakeholder asked if the purpose of the SRI is to build a certification on the smartness of the building in a similar manner as is already been done by BREAAAM (on energy efficiency) and WELL (on wellbeing). The study team clarified that the scopes of BREAAAM and WELL are broader than what is envisioned for the SRI and that the term “certification” might even be too restrictive to apply to the SRI, since the option of a self-assessment (quick-scan) could also be considered. The study team emphasized that all these issues are to be assessed as part of the 2nd technical study and will be investigated in the coming months.

Clarification on consumer focus groups

A stakeholder asked for the possibility to include some of their members in the consumer focus group. The study team answered that, considering the limited budget, there would be three consumer groups in three different locations: the first consumer focus group will be organized to primarily probe the key concepts and provide guidance for the graphic design process. The outcomes of these will provide input to the formatting process and in particular, the graphical designer will come up with options on formatting, which will be taken further to be tested in the two final groups. Given the restrictions, rather than adding additional members to the focus groups, the study team is open to receive input from members of the associations with regards to similar topics.

Comments on the questionnaire

A stakeholder commented that the questionnaire was sent late and more time would have been needed in order to reach out to the relevant members. The stakeholder also stressed that some of the questions in the questionnaire were targeted to users (e.g. residential occupants) that may not be well represented in the SRI stakeholder community. The consortium replied that the questionnaire will remain open and further input will be welcome, in particular from organisations that represent potential SRI end users.

Open discussion

Clarification of the preconditions (specifically on accessibility)

One stakeholder asked for more clarification on the initial building level before labelling the building as smart. The example of accessibility was used to introduce the notion that a building might only be labeled smart if it was accessible also to the elderly, the young and the impaired. The study team clarified that the approach of the study team is that the pre-conditions are not per-se methodological issues, but rather are an implementation issue, since the calculation methodology or assessment method would not vary depending on this. Hence, this discussion is left for the policymaking process. The study team can note preferences from stakeholders but will not express a view on this matter.

Clarification on the weighting factors

One stakeholder expressed his concern that the SRI score would not reflect individual user behavior and hence the actual performance of the building. Consequently, the SRI might miss its effect as it might not resonate with end users because of its theoretical character.

The study team emphasized that the SRI framework proposed by the study does not aim at evaluating the actual performance of the building, but that it is designed to measure the (smart) readiness of the building based on available functionalities. This will not lead to score whether occupants actually use these functionalities. The proposed option C (self-assessment based on system / building data), to be investigated in a forward-looking perspective, might be a first step towards including measured performance within the SRI scheme, as this option is envisioned to calculate the SRI based on in-use measurements.

Connections with the other studies (smart appliances and smart grids)

The Commission is also working on other very important subjects, such as smart appliances and smart grids. One stakeholder asked whether there would be connection or cooperation between the SRI process and these aforementioned study groups.

The policy officer confirmed that technical investigations in the scope of Ecodesign and energy labeling were ongoing, in particular targeting energy smart appliances and building automation and control systems (BACS). DG ENER makes connections between the SRI and these studies through regular exchanges.

Question on the methodology and standards used in the study

EN15232 is an important source for the methodology part proposed in the first technical study. One stakeholder asked if there are any other standards for residential buildings, as in his view EN15232 is focusing on non-residential buildings.

The consortium answered that EN15232 is one of the standards. However, some services are not included in EN15232, especially for services and impacts that are not related to energy and hence other sources are investigated as well. The consortium is aware of the fact that EN15232 is mainly – but not uniquely – targeting non-residential buildings, and the consortium invites the stakeholder community to come up with additional suggestions (including data sources and standards).

Clarification on interoperability, interconnectivity and cyber-security.

One stakeholder was interested in having more details on the working assumptions for these issues. The study team acknowledges these are important and complex topics. Firstly, there are different angles regarding interoperability, e.g. connection to the grid or between building systems. The study aims to address to some extent all these angles. Secondly, these issues are highly related to software capabilities, which can be difficult to assess and not directly within the scope of the SRI assessment. In that context, and as this is a highly active field, the study team will look into other approaches (labels, open codes) to potentially score interoperability, interconnectivity and cyber-security. Interactions with stakeholders are needed to come to a practical methodology to integrate these aspects within the SRI framework.

Clarification on the interaction of the SRI with other indicators, e.g. Level(s)

One stakeholder asked if there is a working process to align with other initiatives from the Commission (e.g. Level(s)).

DG ENER is aware of the ongoing work on Level(s) led by DG ENV, which is currently in the testing phase. The scope of both initiatives is different and complementary: Level(s) is a reporting framework for sustainability, and the SRI is scoped by the EPBD to address the smart readiness capabilities of buildings and systems. Possible connections have already been investigated, in particular in relation to Indoor Air Quality (IAQ). In addition, one of the objectives of this study is to investigate linkages between the SRI and other initiatives. This could for example include testing the SRI in combination with schemes (e.g. Level(s)) on common buildings.

Comments on the voluntary scheme

One stakeholder commented that it is key for the success of this voluntary scheme to emphasize the dialogue with end users and those who will pay for it.

The study team agreed with the importance of talking to end consumers, and additional insights on how to best address this issue are welcome.

Comments on “option C”

One stakeholder pointed out that option C (SRI assessment based on measured data from systems / building) is bracketed at the moment but that the current study could nevertheless look into the definition of an open standard that could support a “measured” SRI (Option C). The market could then come up with innovative ways of making use of the SRI.

The study team agreed that an open standard framework is one of the current bottlenecks that needs to be solved in order to make option C operational. It is not feasible for the study team to develop

these within the project timeframe, but the study team can indeed look into providing some recommendations on this matter and interact with stakeholders to see if there is a common understanding on how this could be taken forward. The policy officer further added that there could be a lot of potential in option C, but the current technical barriers should also be taken into account. Therefore, it could be more appropriate to focus on other options for the first version of the SRI version – while continuing to investigate option C for the future.

Comments on the interaction with EPCs

A stakeholder commented that the issue of interactions between EPCs and the SRI was not yet addressed, but was important, in particular if one of the targets of the SRI is to steer the European real estate market towards properties that are beneficial for the energy system as a whole.

The policy officer stressed that the relation between EPCs and the SRI is a very important implementation aspect with the Member States, and that Member States are familiar with their national EPC schemes, and related constraints. The next plenary meeting of the CA EPBD will be held early June, and there will be a dedicated session on the SRI, in which this topic will most likely be addressed.

Clarification on the contention of complexity

One stakeholder expressed a concern that the way the evaluation is currently set up might give the impression that complexity would be rewarded. Nonetheless, complex technologies and control are currently known to be the first things to fail in buildings. Thus, the stakeholder asked how the SRI would avoid rewarding unnecessary complexity?

The study team confirmed that complexity should not be rewarded and the issue raised could indeed be a concern. One option that is being investigated is to add additional services (not necessarily additional hardware) that explicitly reward services that enable communication and interoperability, as already partly implemented in the methodology suggested by the first study.

Clarification on the operational performance

One stakeholder asked how realistic it is to evaluate building smartness without doing an assessment of building operational performance, and links this to the potential for remote commissioning and energy performance contracting. The market needs a clear trajectory on this, even if option C is not yet clearly developed.

The study team replied that in the current methodology, there are additional services on information to occupants and maintenance needs, which is not the same as in option C, but still address part of the issue raised. Option C would assess the SRI of the building based on measured data – but this option is probably more relevant for future evolutions of the SRI, though it can already be investigated to some extent as part of this study.

Comments on building operation, complexity, “Option C” and SRI

One stakeholder commented on the earlier discussion on regarding complexity and operational performance. The stakeholder states that the complexity of the construction process should not be

confused with the complexity of the technical building systems itself. The issue of assuring correct installation and finetuning of the TBS after completion of the installation should be assessed through commissioning, not through the SRI. The SRI assessment takes place after completion of the building.

The study team further added that metered data in option C has the downside of only being available at the end of the construction cycle. In the questionnaire, respondents indicated that they are mostly interested in using the SRI as a design tool, thus having insights in the early stage of the design process. An in-use evaluation of the SRI would not be suitable to meet this need. There might be room to have an indicator for improvement the building performance in the operational phase, but currently it's not envisioned as the scope and outcome of this study.

Comments on EN15232

One stakeholder stressed that EN15232 can be applicable to both residential and non-residential buildings. The industry applies this standard mostly in non-residential buildings.

Comment on the information communicated to the users

One stakeholder pointed out that it is good to have a synthetic indicator, but more information is required for end-users. The end user might want to have more detailed information about smart readiness (i.e. Electric Vehicle (EV)-ready, grid interaction-ready) rather than only the final score. The study team agreed that the level of information that should be communicated to users is a critical issue. From the stakeholder questionnaire, there seems to be a lot of interest in communicating more information through the SRI. The question is about how far down to go practically: this can be probed in the consumer focus groups.

Comments on the impact assessment

There are good expectations based on the impact assessment from the first study, and given the voluntary scheme, the stakeholder asked about the accessibility to the scheme in the event that some Member States might not implement it.

The project officer commented that the scheme is optional and some Member States could choose not to implement it. The Commission's intention is to investigate ways to ensure the schemes is available in some form even in those Member States, but the priority will be given to the Member States that are willing to endorse the scheme and implement it.

Comment on interoperability

One stakeholder commented that it is key to ensure interoperability at all levels, from appliance to the grids (SAREF ontology). An ontology was already mapped by ETSI.

The study team is aware of the SAREF ontology and how it is implemented in smart appliances. One specific concern is that, although it is applicable for some sets of services within the building, there are other services (ventilation, shading) which do not fully fit into that ontology. The study team will look into it for new applications, however, at the same time the SRI should also be applicable to the existing building stock and equipment. Further suggestions are welcome.

Clarification on options used in the design phase

One stakeholder asked for clarification on the proposed options for the SRI assessment. He indicated that information during the design phase will be needed as well, and demanded whether a SRI simulator or calculator could be developed as well, so that a services provider can calculate SRI impacts during the design phase.

The study team clarified that it would be possible, based on the methodology, to assess the SRI in the design phase as suggested – but that the scope of the study did not include the delivery of calculation / simulation engine.

Clarification on circular economy

One stakeholder asked about the connection with the circular economy.

The policy officer answered that the scope should comply with the text in the directive, which is clearly focused on the operation phase and to how buildings can adapt, e.g. to the needs of the grid. Considering that there are other initiatives targeting the issue of circular economy (e.g. Level(s)), then assuring there is complementarity between the SRI and these other initiatives could be the most effective approach.

Comments on the credibility of the SRI

One stakeholder commented that one of the most important aspects for the SRI is to build a trustworthy process from the beginning. He commented that EPCs are an example which have been shown not to be highly trustworthy in some countries. Thus, option C should not be postponed too much. Furthermore, the stakeholder asked if there is measurement equipment that could already deliver a performance-based approach for certain aspects of the SRI.

The study team pointed out that method C is not discarded. The study team will set out a vision for a potential evolution of the SRI to an option C assessment. Also, in method A and B, it can be envisioned that automated data collection aids the assessment.

Closing remarks

Mr. Sylvain Robert closed the meeting by expressing his appreciation for the stakeholders participation in this stakeholder meeting, and all the stakeholders' comments. The stakeholders are encouraged to continuously contribute to the study. The feedback on the study and the stakeholder consultation process are highly welcome.

Next steps

A first consolidated methodology will be ready by the summer. The testing phase will start after the summer. Most of the technical work is planned to be completed by the end of this year.

Next meeting

The next stakeholder meeting is planned for October 2019. Tentatively the date of 9 October is envisaged, but this will need to be confirmed in due course via the project website and mailings.

Participant list: plenary stakeholder meeting

	First Name	Last Name	Organisation
1	Adrian	Joyce	EuroACE
2	Aitor	Dominguez Martin	Spanish Ministry for the Ecological Transition
3	Alain	Kergoat	SBA (Smart Buildings Alliance for Smart Cities)
4	Alan	McGibney	Cork Institute of Technology
5	Alexander	Dauensteiner	Vaillant Group
6	Alice	FRANZ	CEDEC
7	Allan	Hansen	Denmark
8	Andrei Vladimir	Litiu	KTH Royal Institute of Technology
9	Anita	Derjanecz	REHVA
10	Ann-Cathrin	Roensch	European Builders Confederation
11	Anne-Sophie	PERRISSIN-FABERT	ALLIANCE HQE-GBC
12	Antonio	SANCHEZ-APARICIO	EUROPEAN COMMISSION
13	Arnaud	Collard	SPW - Energie
14	Benedetta	Di Costanzo	COGEN Europe
15	Benjamin	Kroupa	ZDH
16	Bernd	Gruner	EUEW - European Union of Electrical Wholesalers
17	Bernhard	Doerstel	ABB - Busch-Jaeger
18	Bonnie	Brook	Siemens
19	Brigitte	Jacquemont	Ministry for the Ecological and Inclusive Transiti
20	Celine	Carre	Saint-Gobain
21	Charlotte	van de Water	Agoria
22	Claire	Grossmann	ESMIG
23	Clemens	Schickel	btga
24	Dan	Napar	President eu.bac
25	David	Jenei	EMI
26	Diedert	Debusscher	European Copper Institute
27	Dominik	Flikweert	LightingEurope
28	Dorien	Aerts	VITO
29	Dries	Van Eeckhoutte	Daikin Europe NV
30	Eerika	Janhunen	Aalto University
31	Emilie	Stumpf	Panasonic Europe BV
32	Emmanuelle	Causse	Union Internationale de la Propriété Immobilière
33	Faber	Michael	TECHEM
34	Falko	Weidelt	HEA / BDEW
35	Femke	de Jong	Eurima
36	Florian	Chapalain	ABB
37	Florian	Matzka	VÖWG Association of public services and enterprises Austria
38	Frank	Hovorka	UEPC
39	Geert	De Cock	EHI
40	Gilda	Amorosi	Eurelectric
41	Giorgia	Concas	AIE - EU Electrical Contractors Association
42	Glenn	Reynders	Vito
43	Hanna	Uusitalo	KONE Corporation
44	Henning	Ellermann	DENEFF e. V.
45	HENROTTE	Wandrille	SOMFY ACTIVITES SA

46	Ingo	Mauser	EnBW / Eurelectric
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48	IOANNA	ZYMARA	Ministry of Energy, Commerce and Industry
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