Smart Readiness Indicator of Buildings
Third Stakeholder Meeting, 28 May 2018
Albert Borschette Congress Center, Rue Froissart 36, Brussels

(The meeting was non-public and upon invitation only, and this meeting was recorded)

Opening of the workshop by Paula Rey García – Team leader Building Unit Energy Efficiency, EC DG ENERGY

Mrs Rey García welcomes the stakeholders and reminds them about the reason and importance of this study. There are currently important challenges ahead for the building sector to achieve the commitments of Paris agreements and the 2030 EU objectives on energy efficiency and renewables. A fundamental change is necessary to achieve higher renovation rates, a highly efficient and decarbonized building stock and to accelerate the market uptake of smart technologies.

Thus all tools available would need to be used towards resilient and adaptable buildings. The combined use of smart technologies, energy efficiency, and renewable measures is key to face the challenges ahead. It is important to underline it. Our analysis underlying the 2030 objectives and legal proposals shows that an ambitious policy is necessary: from the investment gap, one third should be invested into buildings. SRI is one of the tools that are necessary to incentivize the building sector.

Regarding the policy process: last year's agreement on the revised EPBD has been formalized by the European Parliament on 17 April and by Council on 14 May. It was signed on 30 May and publication should take place in June, giving the legal basis for the next phase.

The next steps on the development of the SRI are as follows:
- This study ends in August;
- The work with the MS will be initiated as part of an EPBD Committee meeting on 12 June;
- A new technical contract to support the next phase (1-2 years of work) will become operational probably in October;
- In parallel, bilateral, in-depth discussions with some smaller groups of stakeholders will take place until the end of the year. This will be continued to bring everybody on board;
- A new complete stakeholder meeting should happen before the end of the year under the framework of the next contract.

Mrs Rey García emphasized that the process is still at the technical phase and that many questions still need to be answered. All inputs are therefore necessary from all the stakeholders.

Presentations from the study team

Sarah Bogaert (EnergyVille/VITO) presented the agenda of the workshop, and recalled the overall objectives of this study.

Stijn Verbeke (EnergyVille/VITO) and Paul Waide (WSE) presented the proposed methodology for calculating the SRI and illustrated it with two case study buildings – an office building and a single family house. The steps of the methodology are:

- Step 1: select the services relevant for the building
- Step 2: assess the functionality level of each relevant service
- Step 3: Calculation: count impact scores and apply weightings
- Step 4: Calculation of the maximum obtainable score
- Step 5: Calculation of the SRI score.

The last three steps are done automatically by a simple excel-based tool that was developed for the case studies. The office building (EnergyVille I) is a newly constructed show-cased building. It scored 70% and required a 65min inspection. The single family house is a building built in 1902 with a size of $250m^2$ highly insulated. It scored 45% and required a 35min inspection. The practical issues arising from the case studies were also summarized.

Paul Waide (WSE) and Stijn Verbeke (EnergyVille/VITO) further presented the changes on the SRI catalogue and calculation methodology, which result from the feedback received from stakeholders. Most of the comments from stakeholders were taken into account and according changes made. Most impacted the catalogue, services and functionality levels. Some comments were directed to the implementation of the methodology.

Paul Waide (WSE) and Stijn Verbeke (EnergyVille/VITO) launched a discussion session to collect feedback from the stakeholders on how to setup a process to implement SRI updates (once the SRI is adopted and in place). The list of services and impacts would need to be reviewed in time since we are in a rapid changing environment. For some services, higher functionality levels might need to be included in order to take into account technological progress and innovation.

The questions addressed to the stakeholders were:
- Should the methodology rely on standards, or would the process be too slow?
- What procedures and quality checks should be used to update impact scores (for all impact categories, including those which are not easily quantified, such as "convenience", "information to occupants", etc.)?
- How should a proper balance be stricken between the level of assessment effort required and the number and impact of services to be included in the SRI?
- How should a reasonable balance be maintained between services and domains?
- At what level should the SRI update process be organized?
- How often should revisions be considered?

Other issues to address in the future of the SRI:
- Suggestions for remote and real-time assessment of certain services?
- Suggestions for facilitating assessment by adoption of an agreed set of service functionality classifications and associated communication tools e.g. markings, QR codes, links to data sheets, etc., to enable rapid classification?
- Other suggestions?

Kjell Bettgenhäuser (Ecofys) presented the intermediate results of the initial evaluation of the impacts of the SRI across the EU. This evaluation differentiates between three different scenarios that reflect different levels of uptake of smart ready technologies:

1. BAU, most likely uptake, no SRI introduced;
2. Moderate implementation scenario, SRI is voluntary with moderate accompanying measures in MS;

3. High implementation scenario, SRI is still voluntary with strong accompanying measures in MS.

The approach to the differentiates between different type of buildings. Some preliminary results are as follows: between BAU and high uptake, 153 TWh/a and 428 TWh/a energy can be saved by 2050. For electricity and thermal energy, savings are quite different. The evaluation of energy savings is mainly based on EN 15232 European standard, and the cost assumptions are based on recent studies.

Discussion

Positive comments on the SRI in general
One stakeholder pointed out that the lack of instrumentation in buildings could be one of the barriers to the implementation of the SRI. This issue is not related to the methodology itself, which is adequate. However, considering systems that are scarcely in buildings could lead to low SRI scoring, which might not be understood by users and owners. Building automation focus on comfort, health and other domains while using as little energy as possible. Expanding the scope (of the SRI) to DSM, electrical car charging and flexibility of the building goes beyond the traditional focus of the building automation sector.

The smart readiness of buildings is based on a combination of several technologies and therefore it is important that the SRI is technology neutral. It should also be interdisciplinary, involving technical building system manufacturers, utilities, ICT technology. Typically three aspects should be taken into account in building smart readiness: control accuracy (example on/off thermostat); functionalities that can be controlled; strategies to put in place, e.g. auto-consumption. This stakeholder stated that the aim should be to optimize these three aspects, targeting comfort, health and productivity of the building, in order to fulfil the goal of the buildings.

Clarification on the selection of services and domains in a SRI assessment
A stakeholder stated that if only a few services are present at the building with a high functionality level, the score could be high. While in a building where there are a lot of services with an average score, the SRI score might be lower.

The consortium clarified that the reasons for excluding some services from the SRI assessment are mainly that, in some situations, some services simply cannot be made available or the services can be not relevant for the building. For some of the domains and services, the discussion on whether to include them or not may require a policy decision or could be based on technical judgement. In the latter case, the assessor capabilities have an influence. The consortium also stressed that the proposed SRI methodology calculates a total score but sub-scores can also be reported at domain level. There needs to be a discussion about what is the most meaningful information to be presented to the household.

Clarification on district heating in relation to demand-side management
A stakeholder asked whether district heating was taken into account in assessing the capabilities of buildings in the area of demand-side management.

The consortium clarified that in the initial study, there was a strong focus on district. A significant number of services have been altered based on the feedback from stakeholders in

the demand-side management domain and heat pumps and other services from district heating are taken into account in the calculation of the SRI score.

Clarification on the services and their economic value
A stakeholder pointed out that from their experience, users want to understand how changes in the smart services present would affect the economic value of the property. There should be a way to convert the SRI score to an economic impact. A method is being working out by this stakeholder. It is also mentioned that CO_2 footprint of the building could be of interest to many people, and could be impacted by changes in the smart services.

Clarification on the interoperability
The study team explained that when making anything smart, we have to look into technologies rather than systems. Ideally, an indicator on interoperability should be defined and be integrated in the SRI calculation. However, if the objective is to limit the time needed for the SRI assessment, it will not be practical to assess interoperability of systems and appliances as part of the SRI. However, interoperability is implicitly considered in the SRI as some services require interoperability, for instance, to avoid simultaneous cooling and heating, for presence detection, etc.

Clarification on changes on domain-level weightings
The study team clarified that the weighting factors proposed in the study reports are only initial estimations, mainly given to enable the application of the methodology. The intention was not to give precise and final weightings and these could be adapted depending on relevant factors (for instance type of building). The methodology remains open on how to fine-tune and apply weightings. There will be more explanation in the next version of the report on how to define and adapt those weighting factors.

Clarification on real time information reporting to the occupant
The study team clarified that there is no definition of what 'real-time' means when it comes to giving information to occupants. All suggestions from stakeholders are welcome.

When presenting the SRI result to the customer, a stakeholder pointed out that it a follow up will be necessary to have an impact on the uptake of smart-ready technologies. This also relates to the discussion about possibly linking the SRI with EPCs (see paragraph below).

Clarification on passive house and SRI score
Following the comment from a stakeholder suggesting that passive houses could not be rated properly with the SRI, the study team mentioned that a passive house can be (and generally is) very smart. It is conceivable that many of the passive houses would have a relatively high SRI score because often much consideration has been given to the design and control of its equipment, e.g. related to controlling the ventilation.

Clarification on the implementation of the SRI
It is clarified that the implementation phase of the SRI will be addressed in the following technical study.

Clarification on the functionalities delivered by smart meters
On the question about how to use smart meters for indicating functionalities, it was clarified that some of the smart meter functionalities feed in directly in the (smart-ready services)

functionalities. It would be interesting to identify in more details all services that can be related to smart metering.

Discussion on standards
A stakeholder mentioned that standards can help facilitate but that the SRI should not rely only on standards, as they often change: e.g. in the building automation sector, standards are regularly updated, but these updates are generally pushed by industries. The time needed to update the standard should also be taken into account.

Furthermore, as an alternative, it would be good to set up a (SRI) technical committee, where experts sit together to discuss on the need of update and impacts.

Discussion on the impact assessment assumptions and calculation
The preliminary impact assessment calculations presented by the study team refer to cumulated numbers from today to 2030. The difference between BAU and high uptake scenario is the yearly implementation rates (of smart-ready technologies), which are different each year. Detailed assumptions are clarified in the report. Non-energy benefits as comfort, health, etc. will be addressed in a qualitative way when the focus of quantitative assessment is on the energy impact. At this moment, assumptions are basic and for the whole of Europe. It is also assumed the SRI will be implemented on a voluntary basis and will apply uniformly to all types of building.

Discussion on the link with EPC
SRI will be voluntary at Member States level. Whether to link it to the EPC and how is a decision at MS level. It is explained that the relation between EPC with SRI is part of the requirements from the legal text (SRI shall not 'negatively affect' EPC). The best approach to this issue is still to be discussed.

Clarification on the cost and payback time
About payback time and costs of the SRI, the study team mentioned that the general assumption is that the indicator should not cost more than 20-100 EUR. The assessment on payback times is ongoing.

Closing of the workshop by Sylvain Robert – Policy Officer in the buildings team of Energy Efficiency unit at EC DG ENERGY
Sylvain Robert firstly addressed the importance of the participation and feedback from the stakeholders. Mr. Robert then highlighted the importance of smart-ready technologies as one of the main pillars of the revision of the EPBD support and uptake.

Mr. Robert explained that the second technical study (tentatively starting in October) would address any required revision and updates of the SRI methodology proposed by this study. The second study will also investigate the implementation of the indicator, which was not in the scope of this first study. The next stakeholder meeting will take place at the end of this year, or at the very latest beginning of 2019 under the framework of the second technical study. In the meantime, exchanges with stakeholders will continue.

Mr. Robert is aware that some participants could feel frustrated because some important issues have not yet been addressed sufficiently e.g. benefits for users and owners and possible approaches for the implementation of the SRI. But Mr. Robert also emphasized that the policy

making process is developing step-by-step and the EC services will make sure that all important issues are duly addressed.

Next steps
The draft second progress report of the study will be shared by mid-June. The final report is due by 26 August.

Feedback from the stakeholders on the second progress report is welcome by the end of June. Regarding the policy process towards the establishment of the SRI, it will starts when the revision of EPBD enters into force; both SRI acts shall be adopted by the end 2019.

Next meeting
The next stakeholder meeting will be end of this year, or at the very latest beginning of 2019 under the framework of the second technical study.

List of participating organizations

Eurima
Eurelectric
IALD
Federal Office for Economic Affairs and Export Control
Siemens Building Technologies
ECTP
University College London
International Union of Property Owners
EFIEES
Vaillant Group
EHI - association of the European Heating Industry
BPIE
LightingEurope
INIVE-QUALICHeCK
ENEA
Centrica
AVERE
GdW
EHI
IFMA - International Facility Management Association
ESMIG
LightingEurope
Panasonic
CENER - National Renewable Energy Centre of Spain
LightingEurope
EuroWindoor AISBL
ADENE
Cembureau
APPLiA
AREA
SolarPower Europe
Somfy
ista International GmbH
Ministry of Construction and Physical Planning
Ministry of Territorial Cohesion, France
President eu.bac
EuroACE ASBL
Ministry of the Environment
BDH - Federation of German Heating industry
Urban practices
OIB
Smart Buildings Alliance
EVIA
Orgalime
KTH
Belgian Building Research Institute (BBRI-CSTC-WTCB)
smartEn (Smart Energy Europe)

Swedish National Board of Housing, Building and Planning
Seai
Architects' Council of Europe (ACE)
Citizens Advice
EUROPEAN COMMISSION
tiko Energy Solutions
CAREL Industries SpA
Flemish Energy Agency
Tecnolec vzw
Eco standard
ista International GmbH
Bticino
Siemens Building Technologies
Agoria
ES-SO, European Solar Shading Organization
Niko NV
Daikin Europe NV
EASME
Capiel and Cecapi
Euroheat & Power
E.V.V.E.
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