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SEP. 28 – OCT. 1, 2021 ROME, ITALY

*Hybrid workshop*

# Building Energy Performance Certificates (EPCs): The enabler Smart Readiness Indicator (SRI)

29 September 2021, 09h00 – 12h30 CEST

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iBRoad2EPC



TIMEPAC



U-CERT  
User-Centred Energy Performance Assessment and Certification



EPC RECCAST  
ENERGY PERFORMANCE CERTIFICATE RECCAST



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Hybrid workshop

# Building EPCs: The enabler SRI

29 September 2021, 09h00 – 10h30 CEST

## Welcome and introduction



Andrei Lițiu, chair SRI TGC



Bonnie Brook, co-chair SRI TGC



## Policy keynote SRI



← Sylvain Robert, Project Manager

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EPC RECAST  
ENERGY PERFORMANCE CERTIFICATE RECAST



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Hybrid workshop

# Building EPCs: The enabler SRI

29 September 2021, 09h00 – 10h30 CEST

## Setting the scene keynote 1

← Alain Zarli



→ Alexis David



European Construction  
Technology Platform (ECTP)

## Setting the scene keynote 2

← Stijn Verbeke, Senior researcher EPB



EC's SRI Support Team

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# Hybrid workshop

## Building EPCs: The enabler SRI

29 September 2021, 09h00 – 10h30 CEST

### SRI national testing & outlook

← Robert Stadler, Austria



Allan Hansen, Denmark →



### SRI national testing & outlook

← Nicolas Cabassud, France



Biagio Di Pietra, Italy →

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Hybrid workshop

# Building EPCs: The enabler SRI

29 September 2021, 11h00 – 12h30 CEST

Panellists Next Gen EP Certificates H2020 cluster  
*(3 coordination and support actions started in 2019)*



Maike  
Venjakob



Andrei  
Lițiu



Maarten  
De Groote



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Christiana  
Panteli



29 September 2021, 11h00 – 12h30 CEST

## Panellists Next Gen EP Certificates H2020 cluster *(4 innovation actions started in 2020)*



Michał  
Zbigniew  
Pomianowski



María  
Fernández  
Boneta



Sylvain  
Kubicki



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RECAST  
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coming soon



**David  
Jenkins**



**Peter  
Gyuris**



**Alexander  
Deliyannis**



**Boris  
Sučić**

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**TIMEPAC**

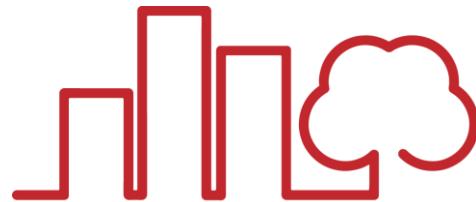


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**EPC  
RECAST**  
ENERGY PERFORMANCE CERTIFICATE RECAST

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**SUSTAINABLE  
PLACES 2021**

## General introduction



- This 180-minute hybrid workshop, as integral part of the [\*\*Sustainable Places 2021 conference\*\*](#), is set against the backdrop of the [\*\*ongoing Smart Readiness Indicator \(SRI\) implementation and further development \(future-proofing\)\*\*](#) at both EU and national levels (more details in this [\*\*REHVA Journal article\*\*](#)).
- The members of the [\*\*Next Gen EPCerts H2020 cluster\*\*](#) join forces with the [\*\*SmartBuilt4EU team\*\*](#) with the main scope of providing support to the [\*\*European Commission\*\*](#) services (& contractors) and the [\*\*EU's Member States\*\*](#) in the upcoming SRI national testing and the ongoing development of the SRI method C (in-use smart performance – quantitative assessment), and possibly other (e.g. ensure an [\*\*energy performance of buildings \(EPB\) coherence framework\*\*](#) for all instruments to flawlessly work together [\*\*energy performance certificates \(EPCs\)\*\*](#), [\*\*Digital Building Logbooks\*\*](#), [\*\*Renovation Roadmaps & Passports\*\*](#), [\*\*Level\(s\)...\)\*\*](#)).
- The main goal is to ensure an open co-creation process maximizing quality, relevance, utility and effectiveness while avoiding reinventing the wheel and ensure a [\*\*coordinated and convergent approach\*\*](#). Such an approach would greatly support the [\*\*digital transformation\*\*](#) of the EU's building stock which in turn will enable and facilitate to [\*\*arrive by 2050 at healthy, safe, efficient, flexible and sustainable\*\*](#) (carbon neutral) [\*\*buildings for the people\*\*](#).

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**D<sub>2</sub>EPC**



**ePANACEA**  
Smart European Energy Performance Assessment & Certification

**EPC RECAST**  
ENERGY PERFORMANCE CERTIFICATE RECAST



European Commission | English | Search

European Commission > Energy > Topics > Energy efficiency > Energy efficient buildings > Smart readiness indicator

Energy

Home Topics Data and analysis Funding Studies Publications Consultations Events News

### Smart readiness indicator

Smart technologies in buildings SRI methodology SRI Implementation

Cost effective means for creating healthy, energy efficient and comfortable buildings. The smart readiness indicator rating depends on a building's capacity to accommodate smart ready services.

Events, newsletter and news SRI explained Connecting stakeholders

Latest events, news and newsletters on the SRI. Questions and answers about the SRI in general, its implementation and methodology. This platform is a multi-stakeholder forum for discussion and experience sharing on the SRI implementation by the EU.

### SRI Topical Group C (SRI TGC)

- 1<sup>st</sup> recommendations report – (developed during January – May 2020)

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# General introduction

Transition

**Build forward together**  
“Go far, go together”

Business as usual

**Build back better**  
“Go fast, go alone”



**Technology**, the application of scientific knowledge to the **practical aims of human life** or, as it is sometimes phrased, to the **change and manipulation of the human environment**. (*Britannica*)



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**EPC RECAST**  
ENERGY PERFORMANCE CERTIFICATE RECAST



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User-Centred Energy Performance Assessment and Certification



ENERGY PERFORMANCE CERTIFICATE RECAST



Hybrid workshop

09h05-09h10

# Building EPCs: The enabler SRI

29 September 2021, 09h00 – 10h30 CEST



Introduction by Bonnie Brook  
co-chair SRI Topical Group C



**smartEn**  
Smart Energy Europe



EUROPEAN ALLIANCE TO  
**SAVE ENERGY**  
*Creating an Energy-Efficient Europe*

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Hybrid workshop

09h10-09h20

# Building EPCs: The enabler SRI

29 September 2021, 09h00 – 10h30 CEST



Policy keynote SRI by **Sylvain Robert**

Project Manager, European Climate, Infrastructure and Environment Executive Agency (CINEA), European Commission



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# Smart Readiness Indicator

state-of-play and some short-term perspectives

Sylvain ROBERT (CINEA C2 - Horizon Europe Energy)

Brigitte Jacquemont (ENER B3 - Buildings and Products)

# European Green Deal & Renovation Wave

- With the **European Green Deal** and the **Renovation Wave**, the European Union promotes the renovation of buildings, to help people cut their energy bills and energy use
- The **2018 revision of the European Energy Performance of Buildings Directive** (EPBD) heavily emphasised the potential of smart technologies in the building sector, to improve both energy efficiency and the well-being of people

# The EPBD – 2018 revision

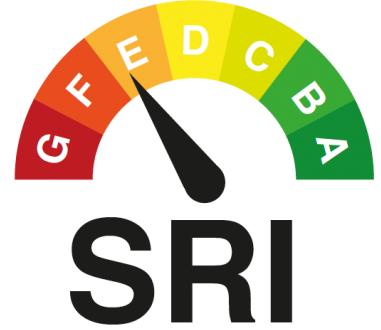


- Initiated with the Clean Energy for all Europeans package (2016)
- Two focus points: renovation and smart buildings
- Directive (EU) 2018/844 - highlights:
  - National long-term renovation strategies
  - Electric vehicles recharging points
  - **Smart readiness indicator** for buildings



“Energy efficiency first!”

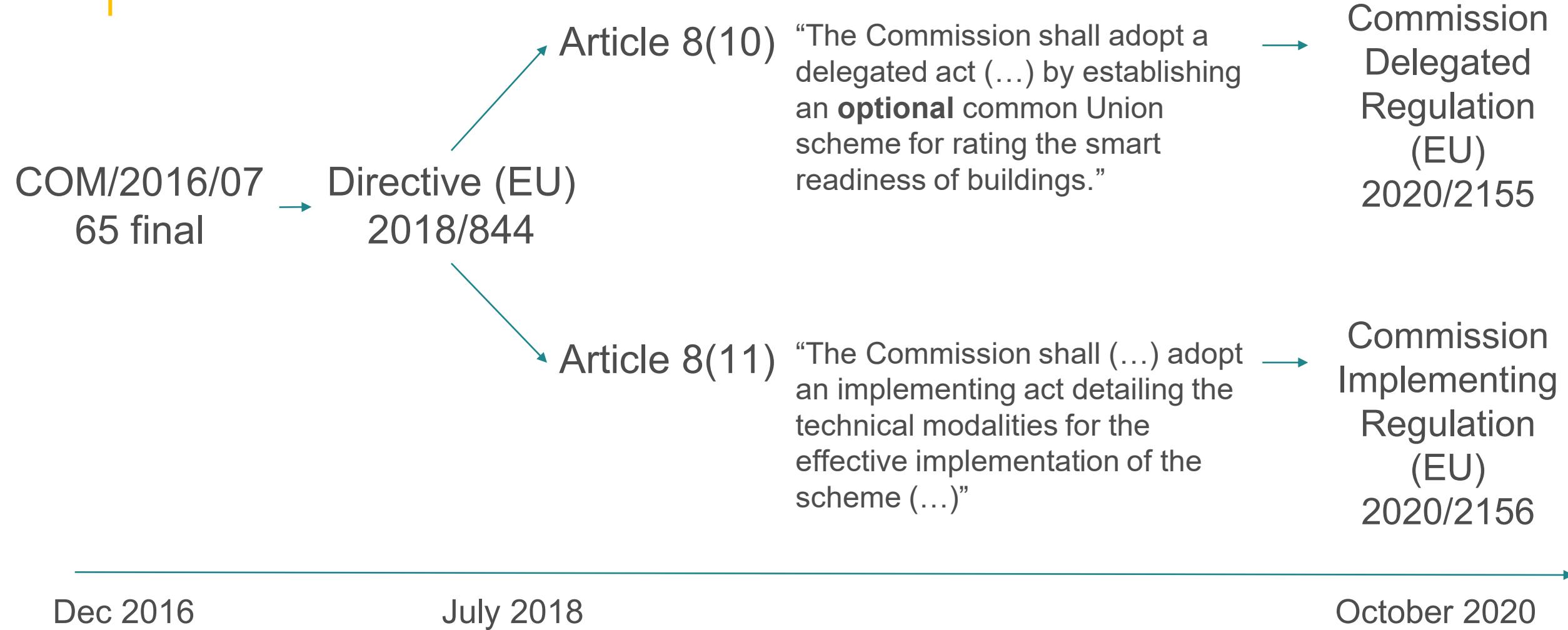
# SRI – motivation and scope



- Smart-ready technologies in buildings are beneficial (energy performance, comfort and convenience, smart grids)
- Rating smart readiness to inform building owners and users and, promote smart technologies in buildings
- 3 smart readiness aspects:
  1. Ability to adapt its operation mode in response to the needs of the occupant,
  2. Ability to maintain energy efficiency performance and operation of the building,
  3. Energy flexibility / adapting to signals from the grid



# SRI – Policy making



# SRI – Delegated Act

## Art. 1 Subject matter and scope

Art. 3 Smart Readiness Indicator

Art. 5 Smart readiness rating

Art. 7 Smart Readiness Indicator Certificate

Annex VIII and IX

Scope,  
How rating (smart readiness class) is derived from scores,  
Contents of SRI certificates

## Art. 2 Definitions

Art. 4 Methodology for calculating the smart readiness indicator

Annexes I to VI

Calculation of smart readiness scores on the basis of services provided by building systems (from services to scores in %)

Art. 6 Optionality

Art. 8 Smart readiness indicator experts

Art. 9 Control System

Interpretation of optionality,  
Accredited or qualified experts,  
Control system

# SRI – Implementing Act

## Art. 1 Subject matter and scope

Art. 4 Issue of the SRI certificate and terms and conditions of its use

Art. 6 Self-assessment

SRI certificates only issued by experts – content in line with the DA's requirements

Self-assessment possible but does not lead to certificate

## Art. 2 Definitions

Art. 3 Accreditation and qualification of SRI experts

Art. 5 Coupling with EPC and inspection schemes

Information obligation about expert qualification

Coupling with EPBD-related schemes is possible, including for experts and control system

Art. 6 Monitoring and promotion of the smart readiness indicator scheme

Art. 7 Testing of the SRI

Annex

Reporting and monitoring, Testing phase at national level

# SRI - Regulations in force

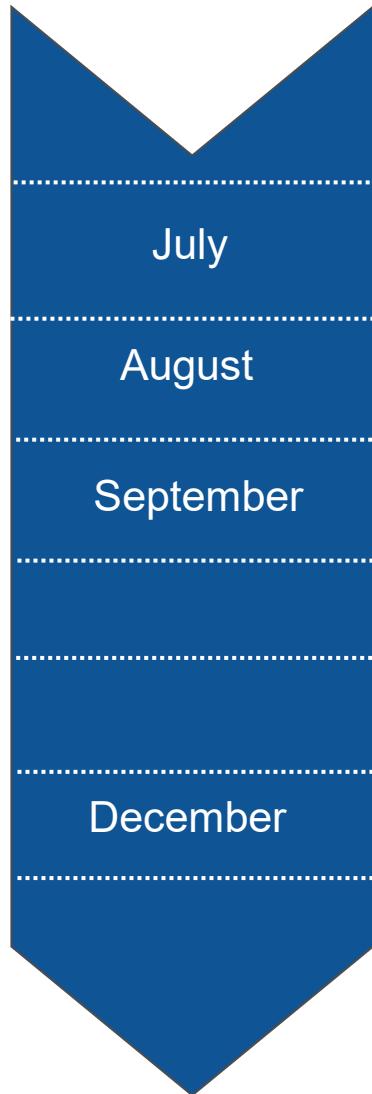
Regulations published on 21 December 2020 in [Eur-Lex](#) and  
**entered into force on 10 January 2021:**

- Regulation (EU) [2020/2155](#) for the **Delegated Act** – establishing an optional common European scheme (definition and calculation methodology)
  - Regulation (EU) [2020/2156](#) for the **Implementing Act** – detailing the different technical implementation modalities
- Testing and implementation in Member States can start

# SRI – Support contract for the implementation

- Main objectives
  - ✓ Ongoing support for testing and implementing the SRI
  - ✓ Support for establishment of an SRI platform
  - ✓ Technical assistance on EU guidance
  - ✓ Additional support
  - ✓ Awareness raising and dissemination
- Flexible support to Member States (helpdesk)
- Future steps of the SRI
- Material: Web resources, SRI assessment package, etc.

# Next steps



## Indicative timeline

July

- Steady expansion of Website and Helpdesk

August

- Newsletter

September

- Training package & assessment package available

- SRI training webinars

- Call for interest on adapted support for SRI pilot testing

December

- SRI Platform launching event

# In case of interest

- DG ENER's **SRI webpages** (includes info / resources related to implementation)  
[https://ec.europa.eu/energy/topics/energy-efficiency/energy-efficient-buildings/smart-readiness-indicator\\_en](https://ec.europa.eu/energy/topics/energy-efficiency/energy-efficient-buildings/smart-readiness-indicator_en)
- Topic **LIFE-2021-CET-SMARTREADY** “creating the conditions for a global improvement of smart readiness of European buildings”
  - Opened since 13 July 2021, deadline 12 January 2022
  - Budget: EUR 6 million (up to EUR 2 million per project)
  - Contribute to successful implementation / uptake of the SRI
  - See [the funding portal](#).

# Thank you!



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Hybrid workshop

09h20-09h40

# Building EPCs: The enabler SRI

29 September 2021, 09h00 – 10h30 CEST

## Setting the scene keynote 1

← Alain Zarli

Secretary General



Alexis David →

Policy & Project Officer



European Construction  
Technology Platform



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# The Smart Building Innovation Community

Building EPCs: The Enabler for the SRI  
Sustainable Places 2021, 29/09/2021, Rome



*The Smart Buildings community*

**Smart Buildings context**

# Context - Smartness in the construction sector (1/2)

## Buildings & Construction sector

- Key enablers for achieving low carbon economy goals for 2050
- 40% of Europe's energy consumption & 36% of GHG emissions
- 97% energy inefficient housing stock

## Needs

- From passive isolated elements to smart-grid ready buildings
- Buildings acting as active nodes, integrated to the energy grids & other infrastructures
- Buildings answering occupants needs (comfort, safety, etc.)

## Initiatives and plans

- Europe climate neutrality by 2050
- Green Deal – Renovation wave
- EU's EPBD\* promotes:
  - Use of ICT and smart technology in buildings
  - Zero-emission building stock target by 2050
  - Smart Readiness Indicator (SRI)
  - Rollout of e-mobility infrastructure
  - Mobilisation of public & private financing for renovation to tackle energy poverty
  - Improve the way energy is used in buildings

# Context - Smartness in the construction sector (2/2)

## R&I

- Most of the technical barriers have been or are being tackled (*R&I projects, national initiatives, EU funded projects ...*)
- Developing and demonstrating innovative solutions:
  - Can improve the smartness & performance of the EU building stock
  - Many topics covered: *active building envelope, smart heating/cooling systems, performant electrical/electronical appliances, optimisation of consumption, local storage, etc.*
  - Smart technologies play an essential role

## Main challenge

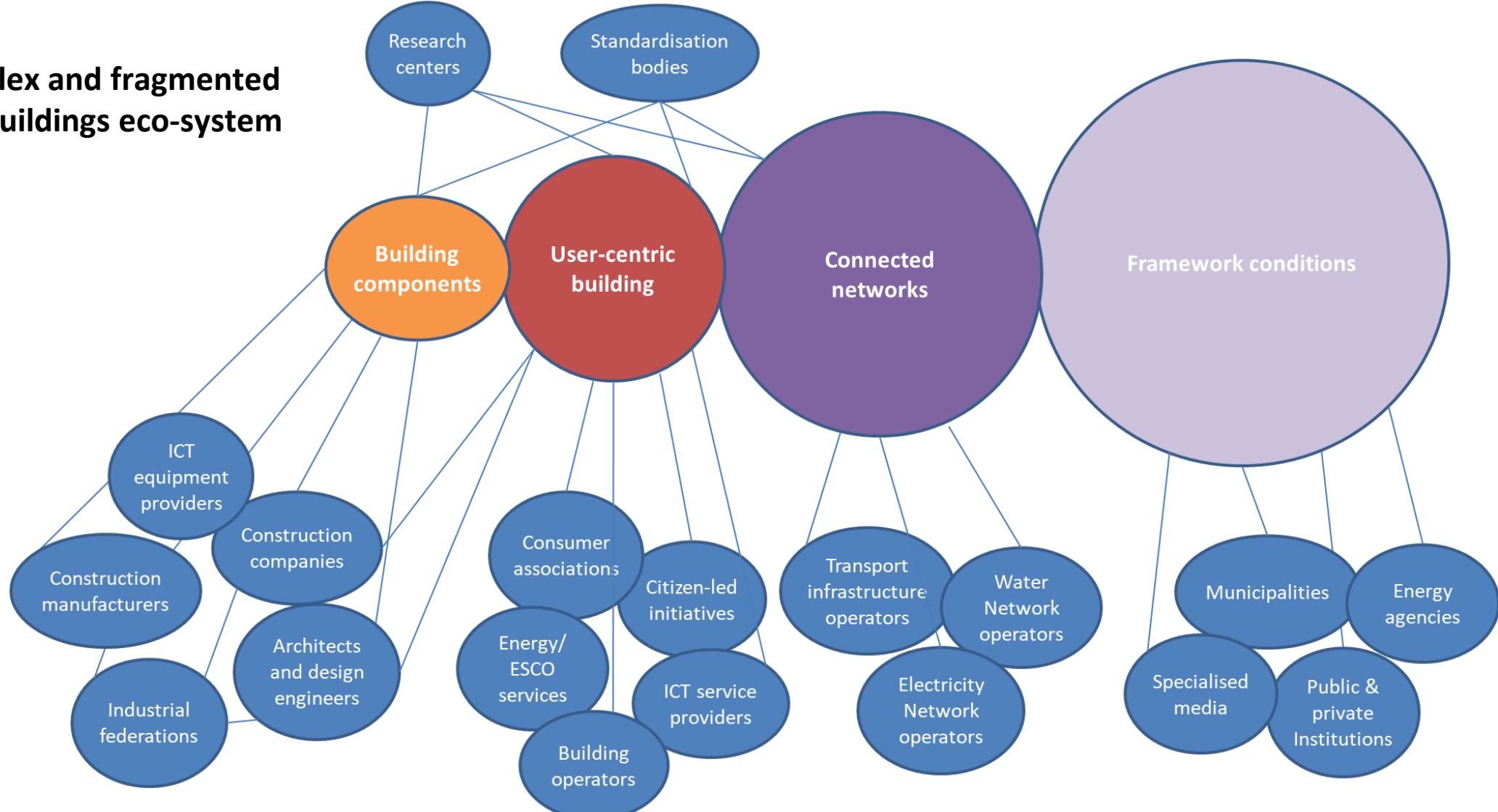
- Slow market uptake & wide-scale roll-out of these solutions

## Targets

- Connect & manage various devices and systems
- Engage building occupants
- Achieve optimal building operation
- Integrate buildings to energy markets
- Break silos
- Share information
- Bridge the gaps between innovation, markets and policy.
- **Remove the last barriers slowing down the improvement of the energy performance of buildings**

# Smart Building ecosystem

**A complex and fragmented smart buildings eco-system**





*The Smart Buildings community*

Introduction to the  
SmartBuilt4EU project

# General information

---

- Call: H2020-LC-SC3-EE-2020-1 → Building a low-carbon, climate resilient future: secure, clean and efficient energy
- Topic: LC-SC3-B4E-9-2020 → Support to the coordination of European smart buildings innovation community
- Starting date: 01/10/2020
- Duration: 30 months

## Partners



## ECTP's LTPs



LUXEMBOURG  
INSTITUTE OF SCIENCE  
AND TECHNOLOGY



# Main objectives & activities



# Examples of promotion activities

- Webinars** – in particular with Build UP
- Workshops** – Back to back with large events
- Projects and technology brochures**: promotion of Smart Building (EU-funded) projects & their outcomes

Sep 29 3:30PM–5:30PM  
**“Smart Buildings: Defining R&I Priorities”**  
 Hybrid workshop



The brochure is divided into three main sections:

- domOS**: Operating System for Smart Services in Buildings. It defines guidelines for an open, secure, privacy-enabled, multi-service IoT ecosystem for smart buildings. It highlights the project's focus on interoperability standards (e.g. W3C) and common nomenclatures (e.g. SAREF). Compliant services for energy efficiency, consumers feedback and flexibility are developed and demonstrated.
- InterConnect**: Interoperable Solutions Connecting Smart Homes, Buildings and Grids. It describes the project as gathering 51 European entities to develop and demonstrate advanced solutions for connecting and converging digital homes and buildings with the electricity sector. The main goal is bringing efficient energy management within reach of the end-users by interoperable Solutions Connecting Smart Homes, Buildings and Grids.
- Project Details**:
  - domOS**: Start date Sep 2020, Duration 36 months, Status In Progress, Total budget 4.9 ME.
  - InterConnect**: Start date Oct 2019, Duration 48 months, Status In Progress, Total budget 36 ME.

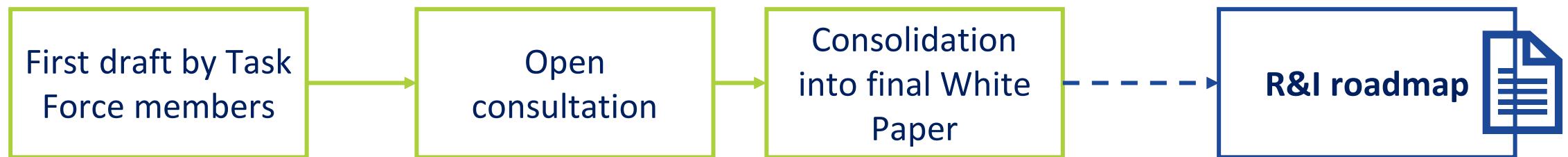
1<sup>st</sup> projects brochure available [here](#).

[Link](#) to be part of the next edition.

# SmartBuilt4EU Task Forces



*Each task force produces a White Paper every 6 months:*



# Topics addressed by the Task Forces in the last semester

|         | Task Force 1:<br>Interactions with users   | Task Force 2:<br>Efficient building operation                                   | Task Force 3: Interactions with<br>the external environment   | Task Force 4 : Crosscutting<br>issues   |
|---------|--|---|---|---|
| TOPIC A | <b>End user acceptance and attractiveness</b><br>Strategies to improve end-user awareness and acceptance of smart building functionalities | <b>Interoperability</b><br>Interoperability among building components & systems | <b>Providing flexibility to power grids</b><br>Data interoperability to provide flexibility to the electricity grid | <b>Financing and business models</b><br>New services, financing & business models (incl. Building as a Service), integration of new technologies (Blockchain) |

*Each task force produces a White Paper every 6 months:*

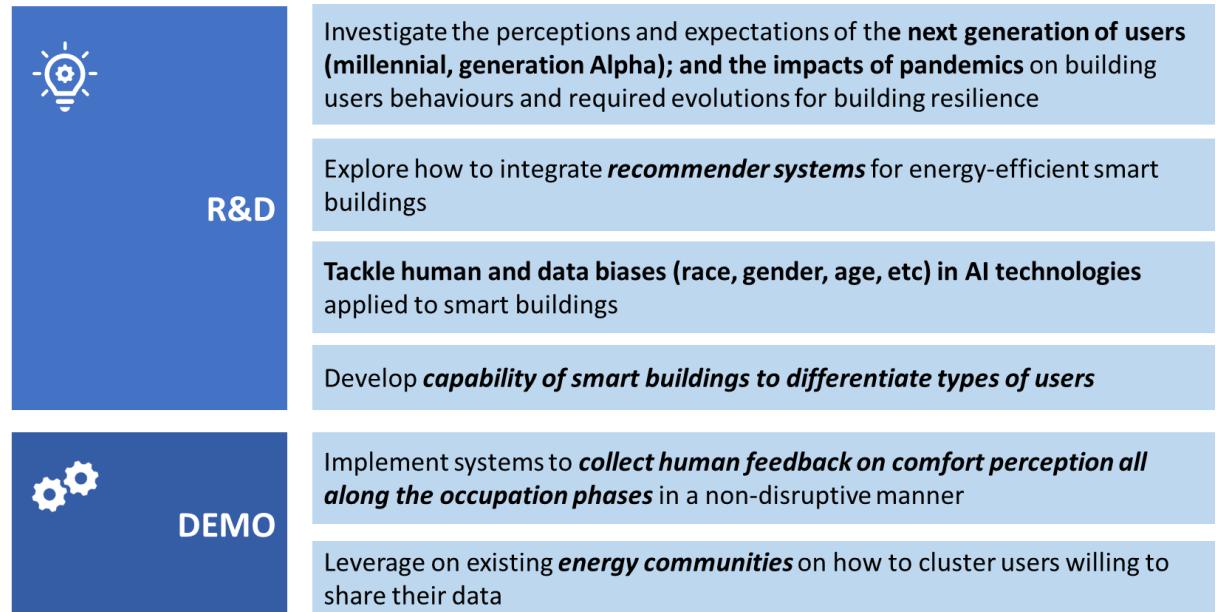


|         | Task Force 1:<br>Interactions with users   | Task Force 2:<br>Efficient building operation   | Task Force 3: Interactions with<br>the external environment  | Task Force 4 : Crosscutting<br>issues                                    |
|---------|--|---|--|--|
| TOPIC B | <b>User-centric building</b><br>Integrating smart solutions for enhanced well-being, inclusiveness and health of occupants | <b>Optimised building costs</b><br>Integrating tools for optimised costs over full life cycle (incl. BIM, digital twin, predictive maintenance, AI, weather forecast, predictive control) | <b>Smart building as enabler of new energy practices and communities</b><br>Smart buildings & electromobility; Local Energy communities, Energy efficiency | <b>Security and privacy</b><br>Cyber-security; Data privacy & protection |

# Key components of a White Paper

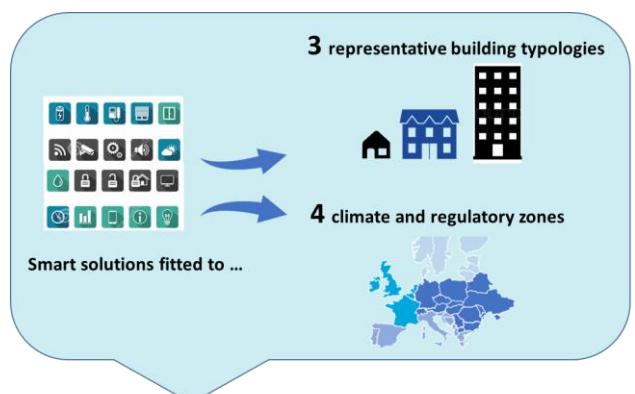
| BARRIERS   |   |
|--|---|
|    | TECHNICAL   |
|  | Weak adaptability of buildings to different end-users' profiles and to their different life phases in the building (e.g. moving in, getting used to the equipment...) |
|    | ECONOMIC  |
|  | Economic concerns for end-user, occupant, private investor and owner: affordability/short term, compared to benefits (medium to long-term)                            |
|    | SOCIAL  |
|  | Fears related to lack of data privacy and lack of control on smart solutions  |
|  | Unknown, different perceptions of comfort for different end-users wrt smart building use  |
|    | VALUE CHAIN   |
|  | Lock-in effect: how the smart solutions will evolve in the future, requirements for updates, upgrades   |
|  | Difficulties to implemented successful co-design processes with end-users in order to develop more user-centered products   |
| DRIVERS  |   |
|    | VALUE CHAIN   |
|  | Implementation and capitalisation on new approaches for collaborative design, such as design thinking, co-creation processes, mental models considerations            |
|  | Best-practices in current projects related to gerontechnology and ageing in homes   |
|  | SOCIAL  |
|  | Increasing knowledge of building user behaviours and requirements on specific segments (elderly people at home, students in university buildings)                     |
|  | Leverage on specific groups of people with most interest in providing feedback on SB solutions, like elderly people wishing to age in place                           |
|  | TECHNICAL   |
|  | Good practices for the development IoT and AI-based apps, featuring easy-for-all and adaptative user experience   |

## Example on topic User acceptance (TF1)

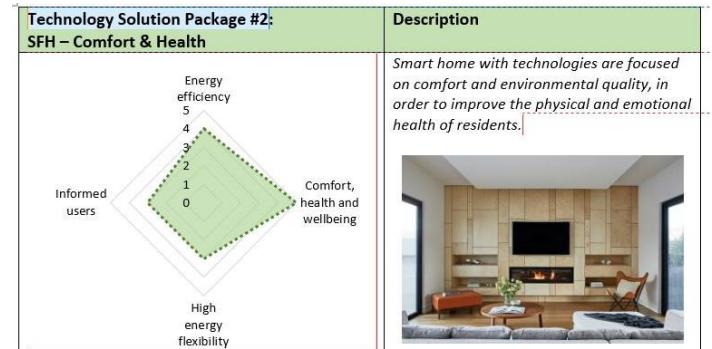


# Contribution to the promotion of the SRI

- **Build on SRI developments and findings:** support its adoption & uptake across Europe
- Address the **lack of clarity** in the marketplace about the **benefits** of smart services/technologies
- Develop:
  - **Co-benefit indicators** associated to SB
  - **Technology solution packages** for SB with a performance assessment (SRI + co-benefits) -> Demonstrate the added value of SB; Promote a business case; Foster market uptake.
  - **Training material and workshops** on the SRI & practical testing



  
Technology packages  
for Smart Buildings



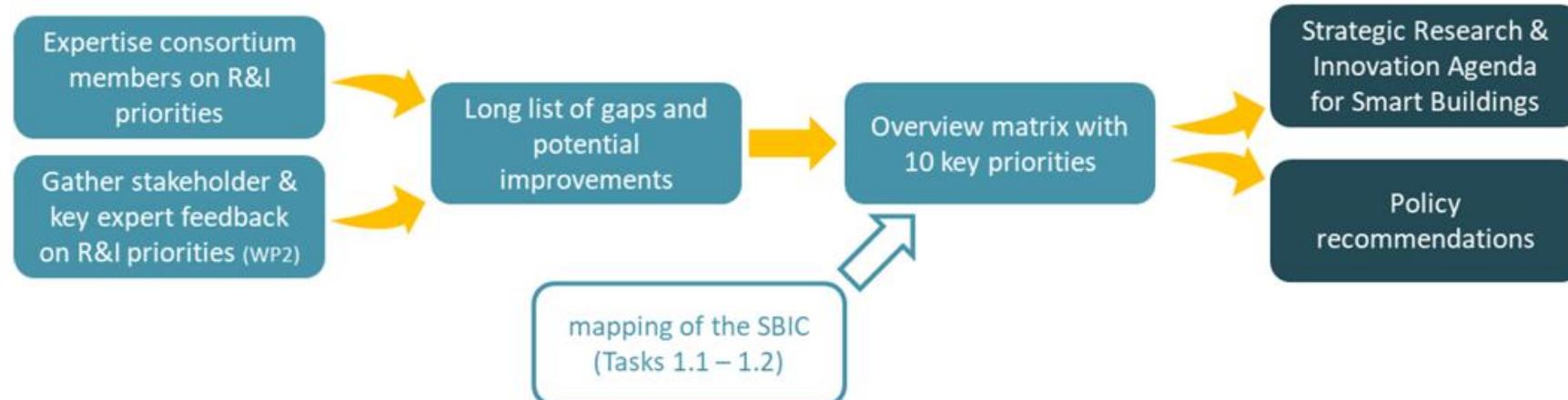
| Applications |             |               |           |         |
|--------------|-------------|---------------|-----------|---------|
| Climate      | Continental | Mediterranean | Sub-Artic | Oceanic |

| Building typologies      | Single-family residential   | Multi-family residential  | Non-residential   |
|--------------------------|---|---|---|
|                          |  |  |  |
| Envelope characteristics | $U_{walls} =$<br>$U_{roof} =$<br>$U_{floor} =$<br>$U_{win} =$                         | $U_{walls} =$<br>$U_{roof} =$<br>$U_{floor} =$<br>$U_{win} =$                         | $U_{walls} =$<br>$U_{roof} =$<br>$U_{floor} =$<br>$U_{win} =$                         |

| Technical building systems |   |
|----------------------------|---|
| Heating                    | HP, storage and underfloor heating                  |
| DHW                        | HP, storage   |
| Cooling                    | Fan coils   |
| Controlled ventilation     | Mech. Ventilation, HR                               |
| Lighting                   |   |
| Dynamic envelope           | Motorized shading                                   |
| Renewables and storage     | PV, storage   |
| EV                         | On-site parking, EV charging                        |
| Monitoring & control       | Single platform with manual control of multiple TBS |

# Contribution to the promotion of the SRI

- Development of a **Research, Innovation and Policy roadmap**
  - Support the EC and MS gaining a better understanding of the SBIC needs
  - Identify & tailor key priorities for EU support to research, innovation & market uptake in SB
- **SRIA for smart buildings**
  - Specify how the identified R&I priorities can be implemented and fostered within an EU R&I framework
  - Give a view where to put efforts in the EU R&I agenda (HEu and other EU initiatives)
  - Policy recommendations
- **Increase the implementation potential and chances for success of the priority actions, through synergies with EU and international initiatives**



# (Perspective) B4P SRIA topic on EPC

---

## Topic in the B4P SRIA

- Demonstrating integrated technology packages with performance guarantees
- Projects to make innovations work with EPC business models, make them accessible to SMEs, and attractive for the residential sector
- Nature of activities required: IA - CSA, 2021-2024 (*CSA kept for 2023-2024*)

## Heu call: Efficient, sustainable and inclusive energy use (HORIZON-CL5-2021-D4-01)

- <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl5-2021-d4-01-01>
- Among the expected outcomes:
  - Ensure the proposed solutions build on the results of previous projects dealing with building performance including EPCs, also considering where relevant integrating building renovation passports or roadmaps in EPCs.
  - Ensure the proposed solutions allow for synergies with other relevant instruments (e.g. the SRI under Directive 2010/31/EU, building renovation passports and relevant parts of Level(s)).



*The Smart Buildings community*

***Thank you for your  
attention!***

- Join our Community: <https://smartbuilt4eu.eu/join-our-community/>
- Project website: <https://smartbuilt4eu.eu>
- Contact: [contact@smartbuilt4eu.eu](mailto:contact@smartbuilt4eu.eu)



<https://www.linkedin.com/company/smartbuilt4eu-project>



@SmartBuilt4EU



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Hybrid workshop

09h40-09h50

# Building EPCs: The enabler SRI

29 September 2021, 09h00 – 10h30 CEST

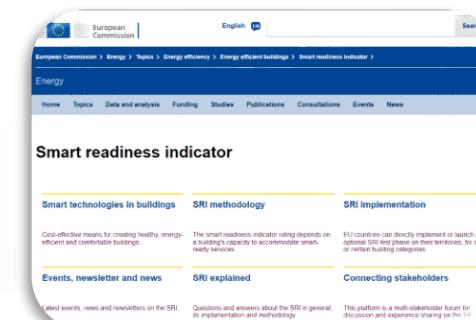


Setting the scene keynote 2

by Stijn Verbeke

Senior researcher EPB

European Commission SRI Support Team



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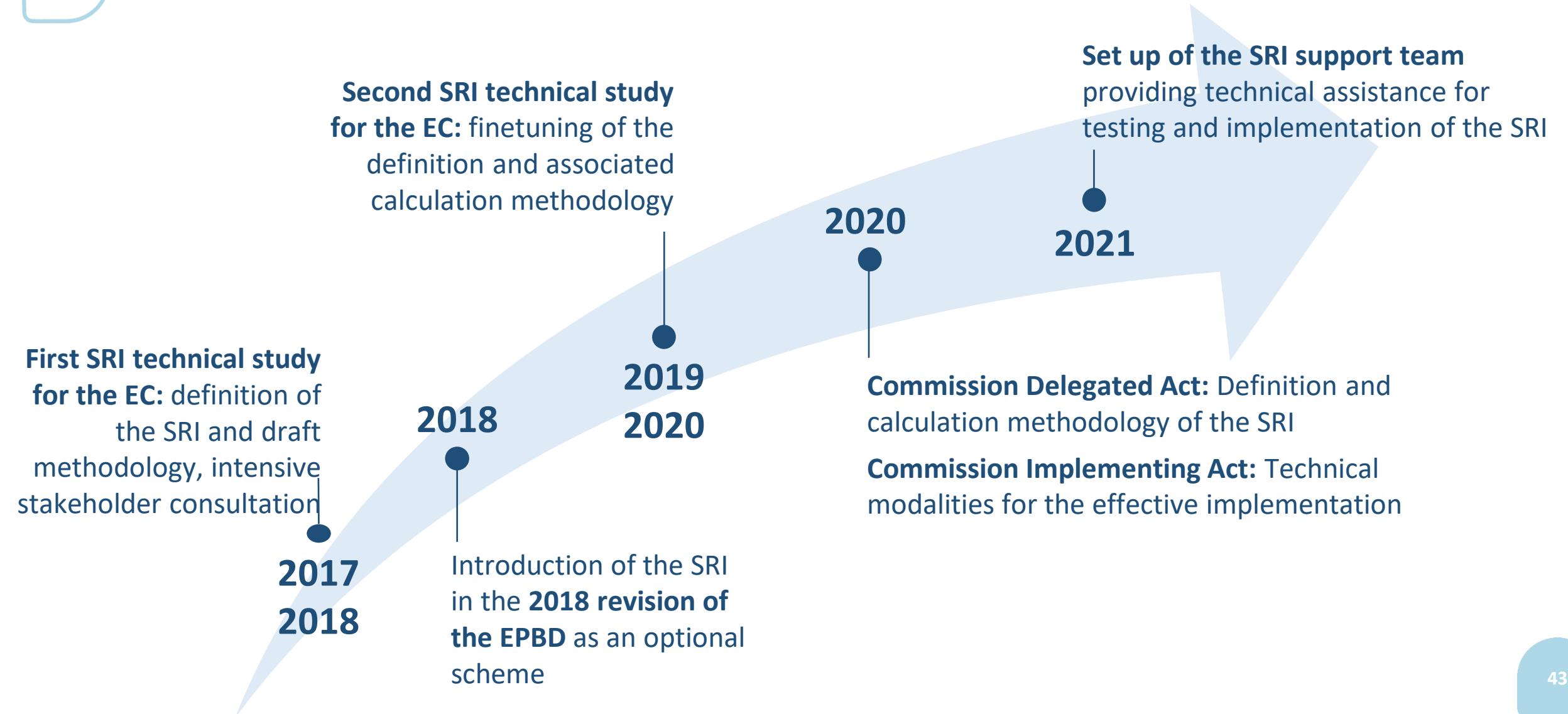


# Smart Readiness Indicator (SRI)

An update with kind regards  
of the SRI support team



# The SRI in the EU policy landscape



# SRI Technical support team



- SRI support team: 2 year service contract by the European Commission
- **Main aim:** provide technical assistance to the European Commission services and to Member States in the first phases of the testing and implementation of the SRI.
- **Consortium:** [VITO](#) (Belgium), Waide Strategic Efficiency Europe (Ireland), [Research to Market \(R2M\) Solution](#) (France) and [LIST](#), the Luxembourg Institute of Science and Technology
- **Timeline:** May 2021 – end of April 2023



## Disclaimer:

*This document has been prepared for the European Commission; however, it reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*



# Task 1: Ongoing support for testing and implementation of the SRI

“ *In this activity, the Contractor will prepare and manage SRI web resources, and set up and manage a SRI helpdesk.*

”



Set up and update of web resources



Set up and management of an SRI helpdesk



Provision of trainings and webinars



Provision of an SRI assessment package



Provision of adapted support to MS for SRI implementation or pilot testing



## Task 2 - Support for the establishment and operation of the SRI platform

### Multi-stakeholder SRI platform

“ *This platform shall be a permanent forum to allow all interested parties (the Commission services, Member States representatives, stakeholders) to exchange information and good practices on testing and implementation of the SRI.* ”

- Provisional planning: first plenary meeting in December 2021
- Topical working groups will be defined
- Timing and modalities under review → you will be informed through the SRI newsletter on how to participate

# Task 3 - Technical assistance for the preparation of EU guidance on the implementation of the SRI

“ *The consortium will collect the key topics that might require guidance to be provided by the EC to Member States.* ”

- E.g. Qualification and training of experts
- E.g. Design options for the SRI certificates



| DOMAINS     | IMPACTS           |                       |         |             |                       |            |                    | SRI |
|-------------|-------------------|-----------------------|---------|-------------|-----------------------|------------|--------------------|-----|
|             | Energy efficiency | Health and well-being | Comfort | Convenience | Health and well-being | Resilience | Energy flexibility |     |
| Total       | 39%               | 18%                   | 60%     | 71%         | 48%                   | 59%        | 0%                 | 42% |
| Housing     | 32%               | 18%                   | 62%     | 55%         | 24%                   | 74%        | 0%                 |     |
| Buildings   | 17%               | 0%                    | 45%     | 70%         | 67%                   | 83%        | 0%                 |     |
| Industry    | 65%               | 51%                   | 78%     | 72%         | 61%                   | 55%        | 0%                 |     |
| Commercial  | 41%               | 0%                    | 55%     | 60%         | 34%                   | 44%        | 0%                 |     |
| Transport   | 85%               | 14%                   | 90%     | 100%        | 83%                   | 15%        | 0%                 |     |
| Electricity | 10%               | 0%                    | 31%     | 56%         | 22%                   | 46%        | 0%                 |     |
| Water       | 10%               | 0%                    | -       | -           | -                     | 68%        | 0%                 |     |
| Waste       | -                 | 38%                   | -       | 82%         | -                     | 84%        | 0%                 |     |
| Agriculture | 52%               | 43%                   | 62%     | 72%         | 45%                   | 64%        | 0%                 |     |



## Task 4: Investigation of additional EU support for the roll-out of the SRI

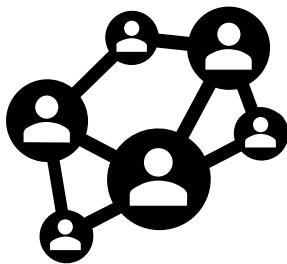
“ *In this task, the Contractor will consult Member States Administrations, and where applicable, other interested parties (e.g. organisations in charge of testing / implementing the SRI), on their needs and expectations for additional EU support for the roll-out of the SRI.* ”

- ‘e.g. investigate the need for additional EU support related to implementation of the SRI in various national contexts; for instance related to additional training, development of SRI calculation tools, data management, etc.’



# Task 5: Awareness raising and dissemination

## Objectives



Build a  
community of  
interest



Disseminate key  
outcomes

*to support SRI implementation*

## Targets



MS & Regions



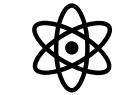
Building owners, FMs  
Building designers



Smart solutions providers



Certification org.  
Standardisation bodies



Energy market players



Research community

## Channels



Website



Social media



Web events



Face-to-face events



Articles

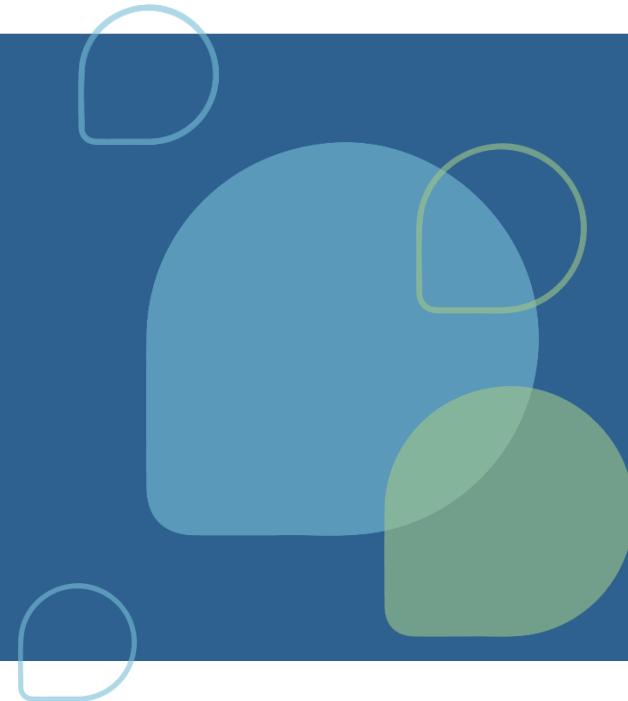


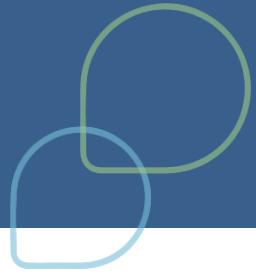
Case studies



Newsletters

# Public resources



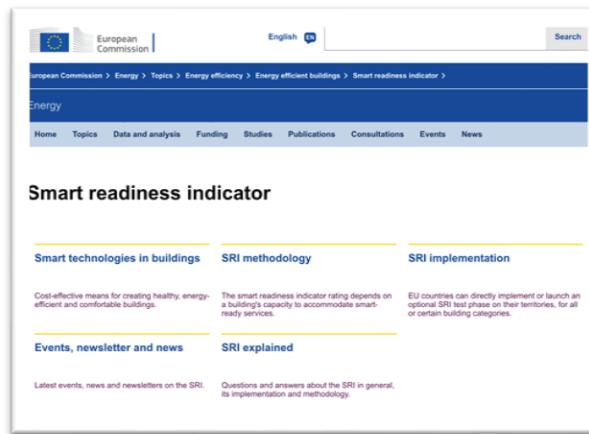


# Legal texts

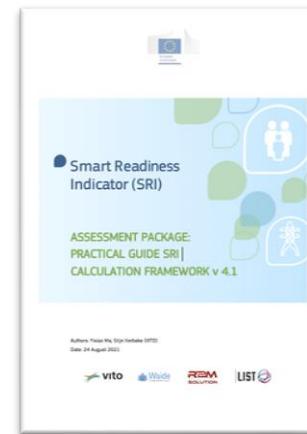
- [Energy Performance of Buildings Directive \(2010/31/EU\)](#)
- [Amending Energy Performance of Buildings Directive \(2018/844/EU\)](#)
- [Consolidated version of the Energy Performance of Buildings Directive](#)
- [Implementing regulation on optional scheme for rating smart readiness of buildings C\(2020\) 6929 | Annex](#)
- [Delegated regulation on optional scheme for rating smart readiness of buildings C\(2020\) 6930 | Annex](#)

# SRI Web Resources

► <https://ec.europa.eu/smart-readiness-indicator>



website



Training material  
Assessment guides



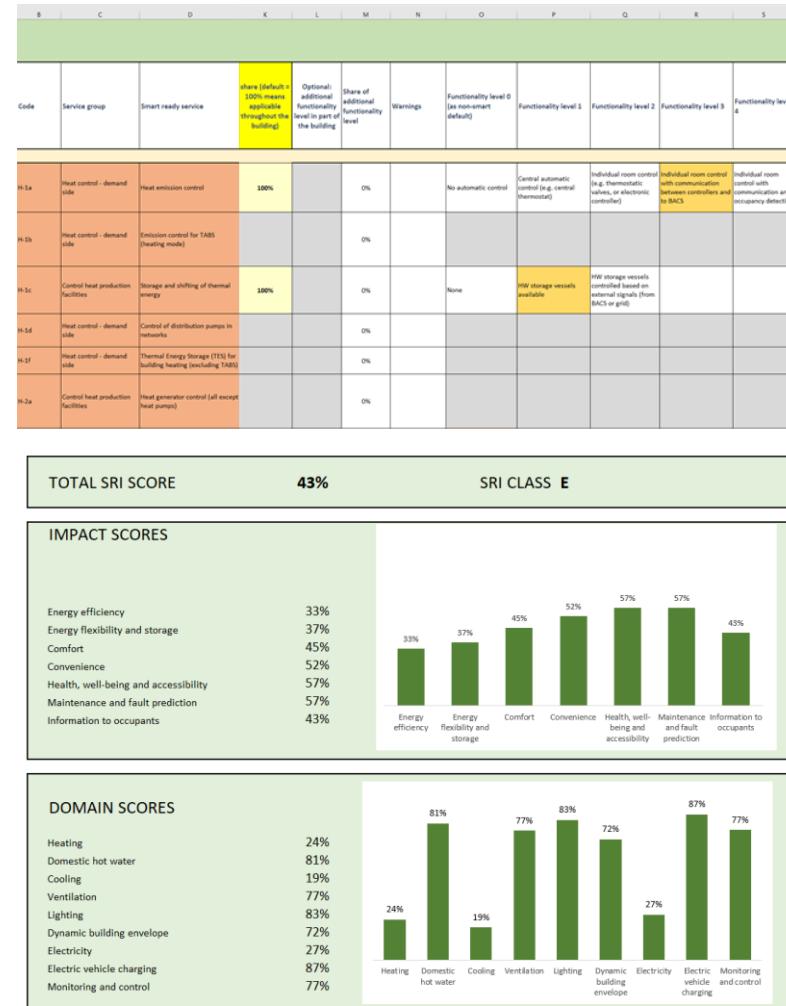
[Subscribe](#) to SRI newsletter

► SRI helpdesk: [support@smartreadinessindicator.eu](mailto:support@smartreadinessindicator.eu).

► The SRI assessment package is available upon request at [support@smartreadinessindicator.eu](mailto:support@smartreadinessindicator.eu).

# SRI assessment package

- MS Excel based tool to support the testing phase
- ! Terms and conditions apply
  - E.g. related to sharing info with EC and technical support team
  - E.g. related to communication: make sure to differentiate between tests and actual certification; make sure to differentiate between SRI testing run by MS versus research projects looking into future evolutions
- The SRI assessment package is available upon request at [support@smartreadinessindicator.eu](mailto:support@smartreadinessindicator.eu).



# The SRI training package

- The [SRI training package](#) is available online
- The slide deck describes the SRI scoring methodology, explains the must-know before undertaking an SRI assessment and gives tips & tricks about the SRI
- The slide deck will be used for training webinars which will be recorded and published



# The SRI newsletter

- The SRI newsletter is distributed every 3-4 months
- Subscribe to stay tuned!



# Smartbuilt4EU

Not part of the EC SRI support contract, but also interesting to the R&D community:

SmartBuilt4EU is a coordination and support action, bringing together the EU R&I community on smart buildings  
→ Sign up at to become part of the community (and – optionally - participate in the white papers)



<https://smartbuilt4eu.eu/>

The smart building innovation community gathers industrials and research and development organisations engaged in supporting the deployment of smart buildings.

By joining this community, you will:



A network diagram consisting of several light blue dots connected by thin lines, forming a complex web-like structure that represents connectivity and collaboration.

|   |  |  |
|---|--|--|
| Increase the visibility of your innovation or R&D project | Contribute defining the future EC-funding calls on smart buildings | Network with stakeholders from all over Europe |
|---|--|--|

# Thanks for your attention!

Contact: [stijn.verbeke@vito.be](mailto:stijn.verbeke@vito.be)

[support@smartreadinessindicator.eu](mailto:support@smartreadinessindicator.eu)

Web: <https://ec.europa.eu/smart-readiness-indicator>

#SmartReadinessIndicator





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Hybrid workshop

09h50-10h00

# Building EPCs: The enabler SRI

29 September 2021, 09h00 – 10h30 CEST



SRI national testing & outlook in Austria

by Robert Stadler

Building Physics Department

**OIB** AUSTRIAN INSTITUTE OF  
CONSTRUCTION ENGINEERING

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Qual  
DeEPC



U-CERT  
User-Centred Energy Performance Assessment and Certification

X-tendo

D<sub>2</sub>EPC

eDYCE

ePANACEA  
Smart European Energy Performance Assessment & Certification

EPC  
RECAST

ENERGY PERFORMANCE CERTIFICATE RECAST

# **CURRENT STATE OF DISCUSSIONS ON HAVING A NATIONAL TESTPHASE ON THE SMART READINESS INDICATOR (SRI) IN AUSTRIA**

**Robert Stadler  
Austrian Institute of Construction  
Engineering (OIB)**

Austria will start a national test phase on the SRI within the next 6 months.

This test phase will not be market driven but it will be conducted as a large scale research project supported by the national, federal and regional administrations.

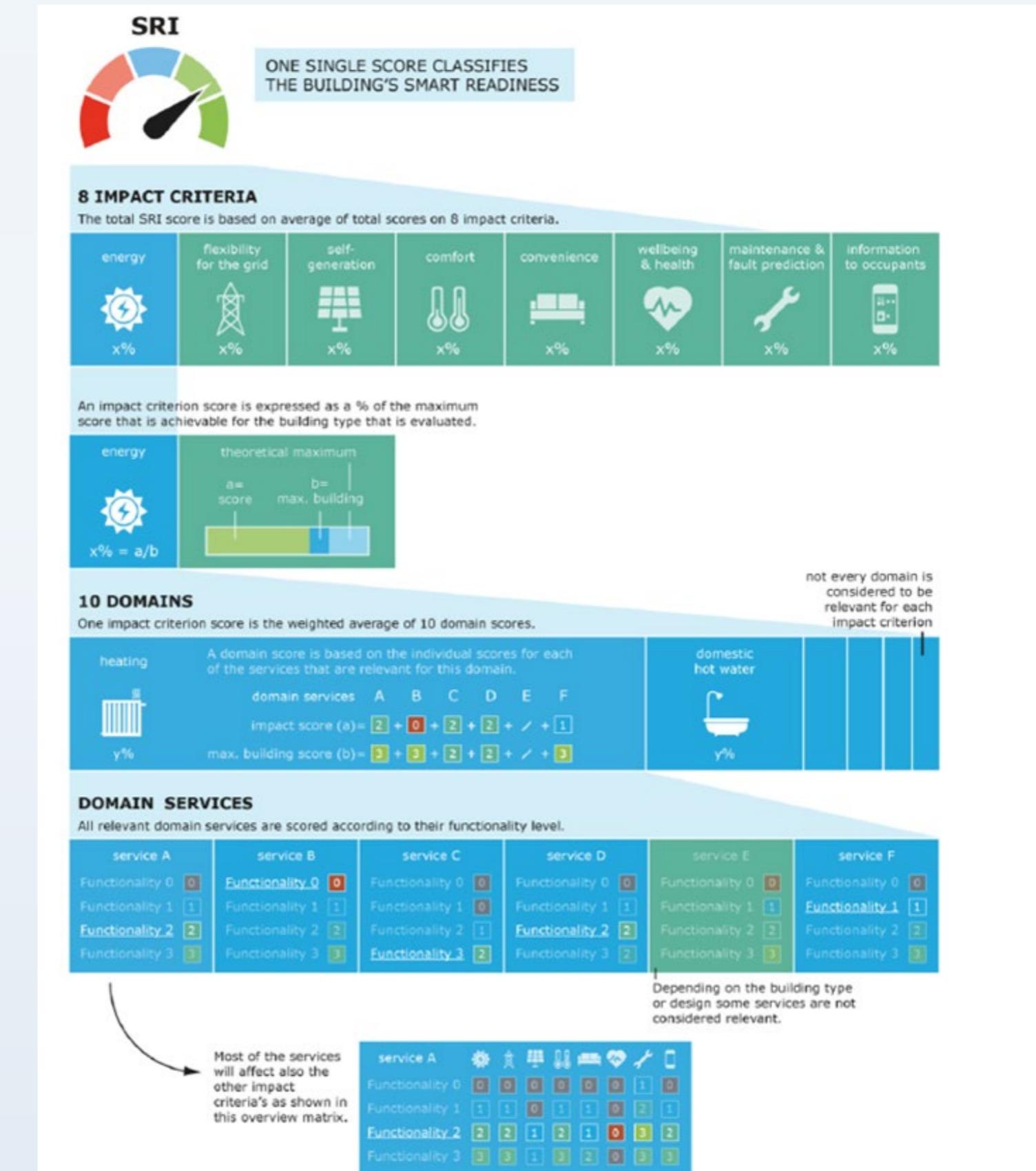
The three columns of the SRI (energy flexibility, energy savings through building automatization and health/comfort) will be evaluated separately.

Not only the method of the VITO consortium will be applied but also other approaches.

## Method 1

**Study on behalf of the EC to develop a uniform assessment of the SRI for the Member States (VITO).**

The approach is focused on a purely **qualitative assessment**, the building is assessed qualitatively on different scales in the area of different domains (heating, cooling, lighting, etc.) with regard to their impact (energy saving, increased comfort, etc.).

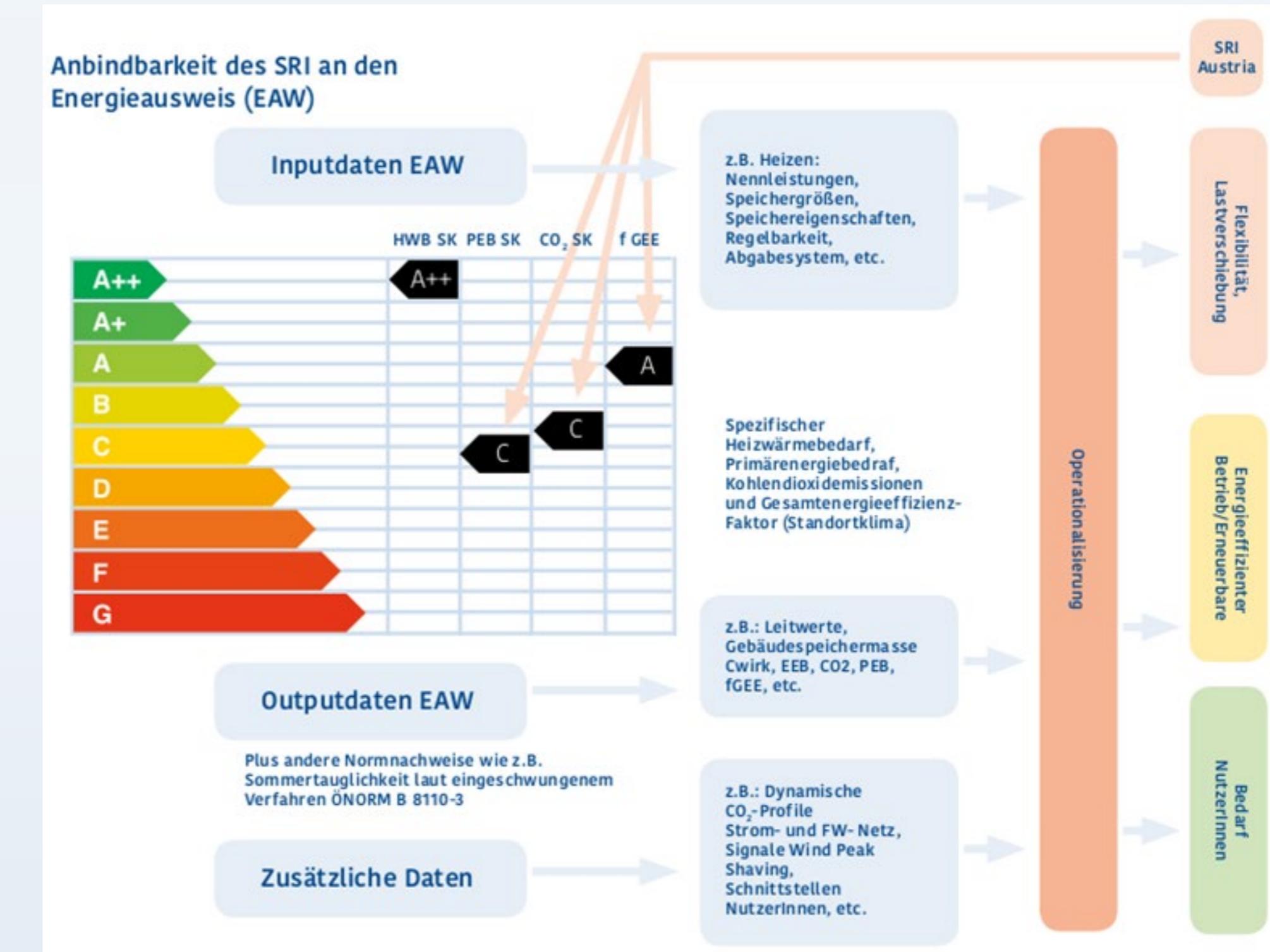


Source: [https://smartreadinessindicator.eu/sites/smartreadinessindicator.eu/files/sri\\_summary\\_2nd\\_interim\\_report.pdf](https://smartreadinessindicator.eu/sites/smartreadinessindicator.eu/files/sri_summary_2nd_interim_report.pdf)

## Method 2

**National study: SRI Austria - Smart Readiness Indicator Evaluation scheme and opportunities for intelligent buildings (AEE Intec).**

**Qualitative and quantitative** evaluation, which, in addition to evaluating the load shift using dynamic profiles, also evaluates intelligent equipment features and the needs of users.

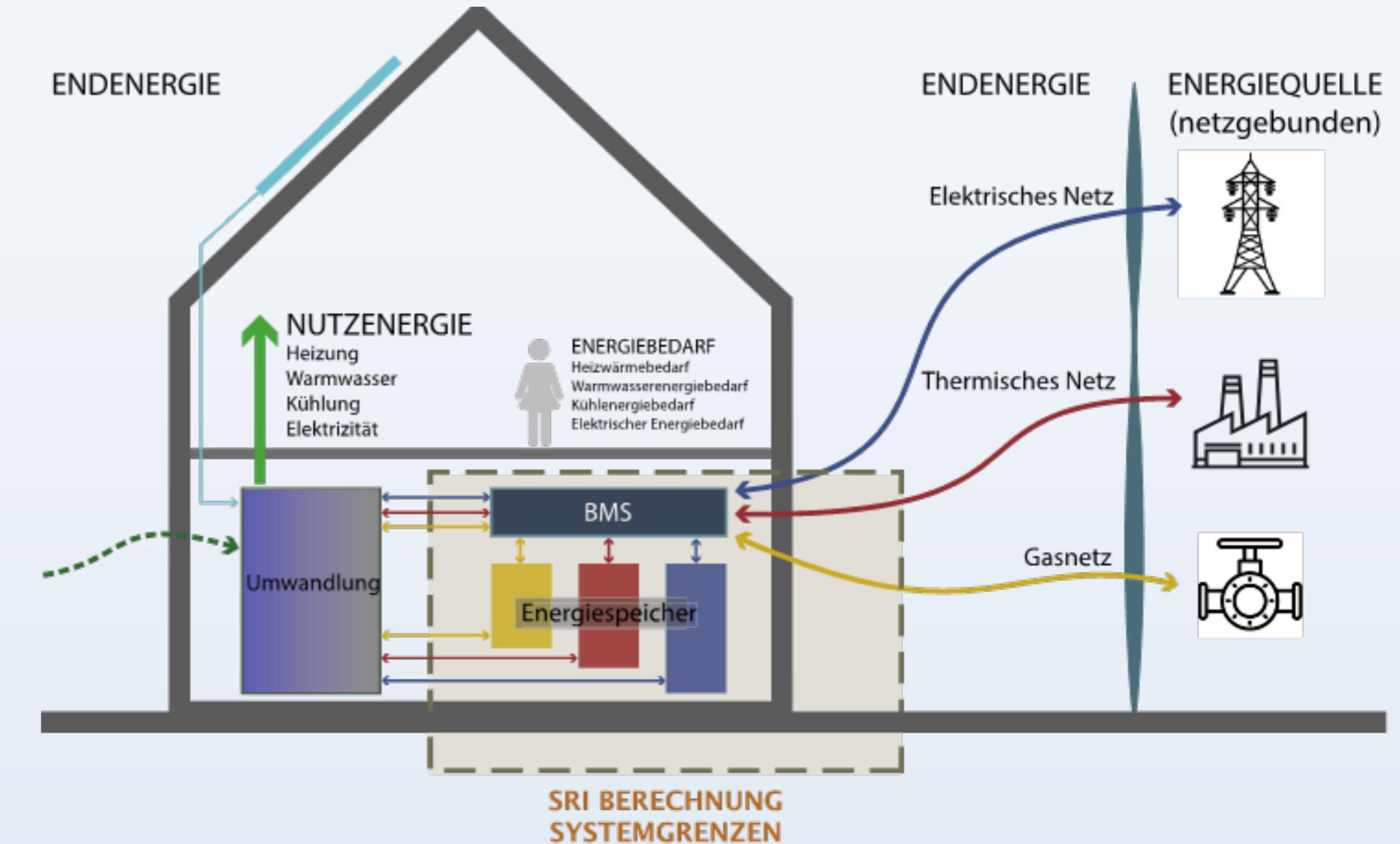


Source: [https://nachhaltigwirtschaften.at/resources/sdz\\_pdf/schriftenreihe-2020-08-sri-austria.pdf](https://nachhaltigwirtschaften.at/resources/sdz_pdf/schriftenreihe-2020-08-sri-austria.pdf)

## Method 3

### Published methodology for a quantitative assessment of the load shift potential of buildings (BOKU).

The load shift potential of buildings is calculated quantitatively based on building parameters and indicators with regard to the storage capacity and communication of the building with the network.

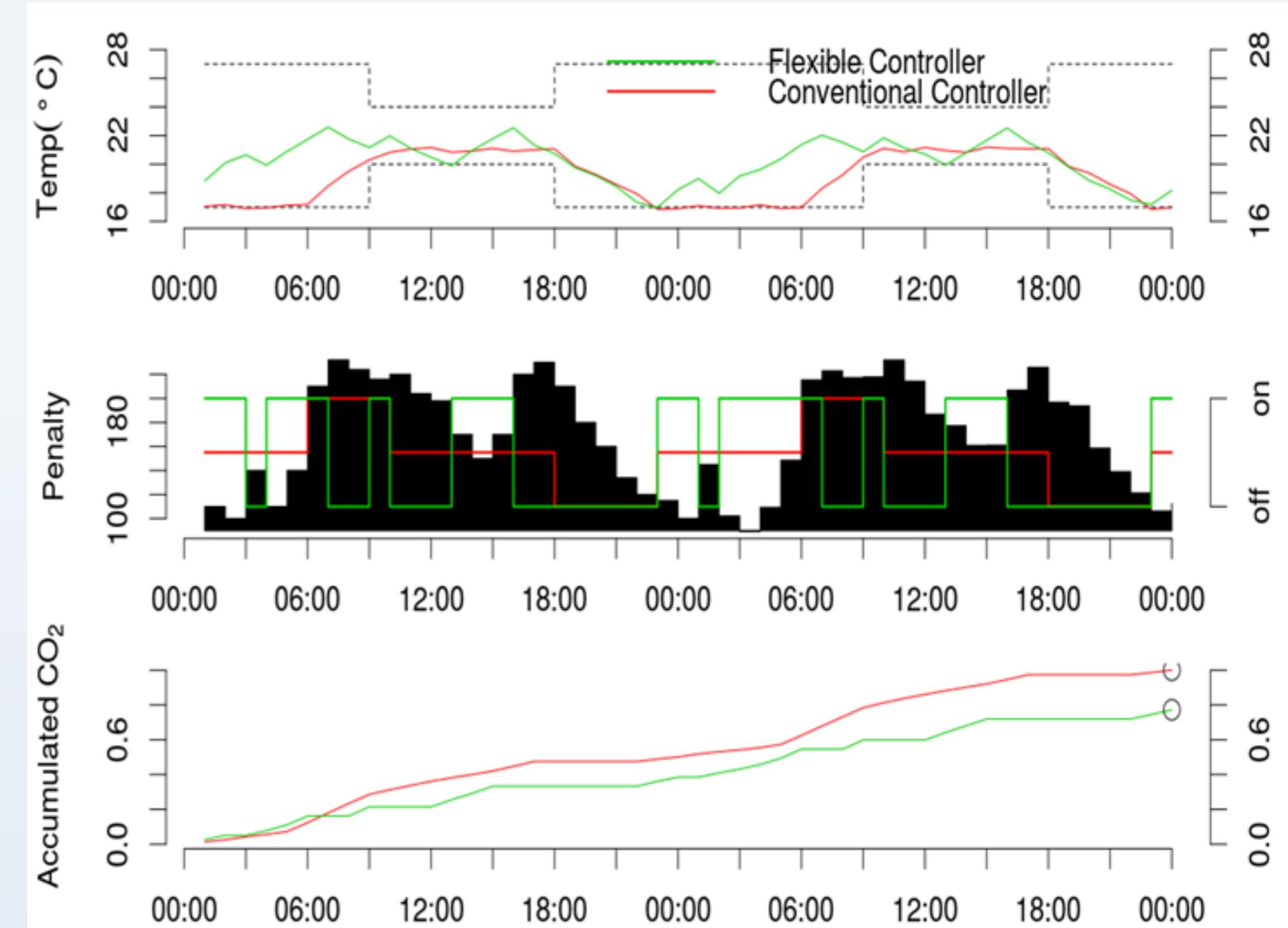


Source: Märzinger, T.; Österreicher, D. Supporting the Smart Readiness Indicator—A Methodology to Integrate A Quantitative Assessment of the Load Shifting Potential of Smart Buildings. *Energies* 2019, 12, 22.

## Method 4

Another methodology for a simple **quantitative assessment of the SRI as a 'flexibility indicator'**.

The grid serviceability and flexibility that serve to reduce CO<sub>2</sub> are primarily addressed here. Indicators from the international project **IEA EBC Annex 82 "Energy-flexible buildings as part of resilient, low-carbon energy systems"** could be of interest.



Source: Rune Grønborg Junker and Henrik Madsen, DTU/DK, Rui Amaral Lopez, FCT Universidade Nova De Lisboa/PT

**The national test phases for the SRI offer the opportunity to help shape and influence the further development of the SRI in the period 01/01/21 - 01/01/26 at EU level.**

**The ultimate goal is an SRI assessment process that reduces subjectivity to a minimum and is based on objective, quantitative and transparent calculations.**

**In Austria we pursue an approach that focuses on energy efficiency and the reduction of CO2 emissions.**

# Thank you for your attention!

Österreichisches Institut für Bautechnik  
Schenkenstraße 4 | 1010 Wien | Austria



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Hybrid workshop

10h00-10h10

# Building EPCs: The enabler SRI

29 September 2021, 09h00 – 10h30 CEST



SRI national testing & outlook in Denmark

by Allan Hansen

Centre for Business and Energy Efficiency with a focus on energy labelling of buildings



Danish Energy Agency

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A large white circle containing a red semi-circle is positioned in the upper left quadrant of the slide. Below it, another white circle contains a faint image of a wind turbine. The background shows several wind turbines standing in the ocean under a sunset sky.

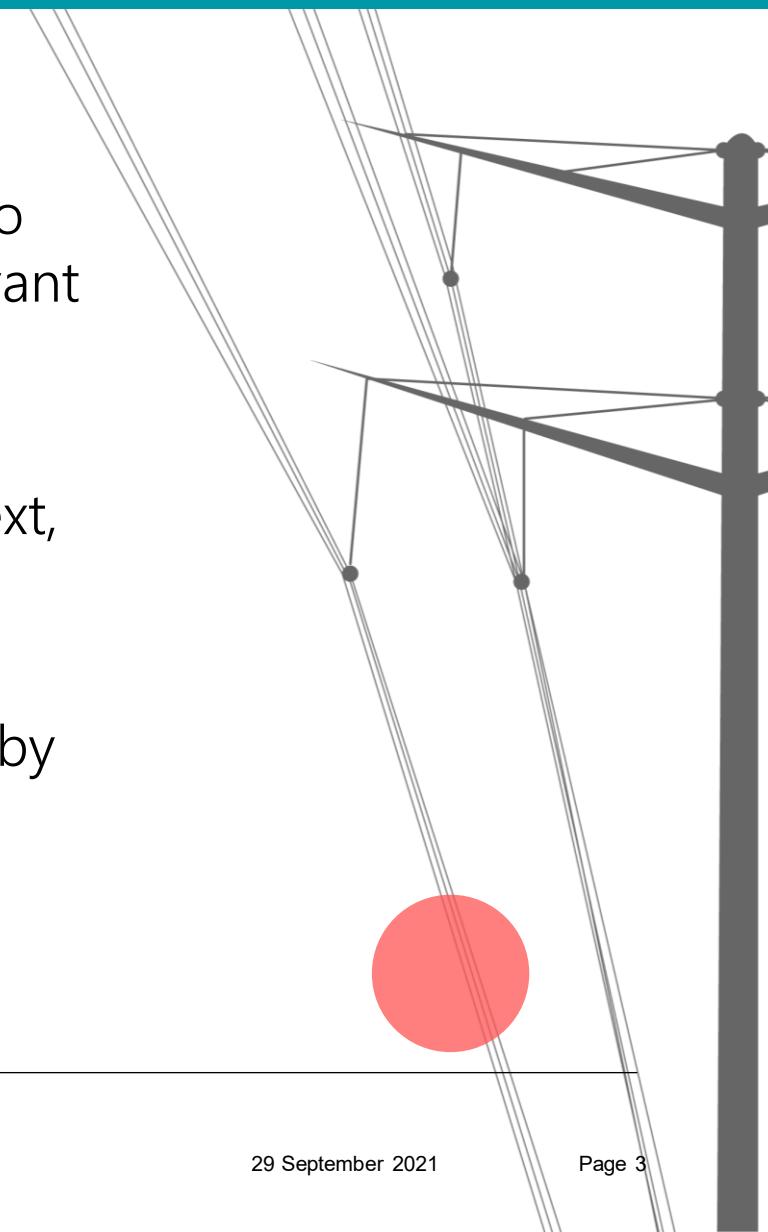
# Testing the SRI in Denmark

Allan Hansen  
Advisor / Danish Energy Agency

# Project-based approach

*What we want to do*

- Identify whether the scheme can encourage building owners to implement energy efficiency, and whether it will be more relevant to some and not others.
- Look into how the scheme should be adapted to Danish context, for example.
- Involve buildings that are made available on a voluntary basis by building owners.



# Project-based approach

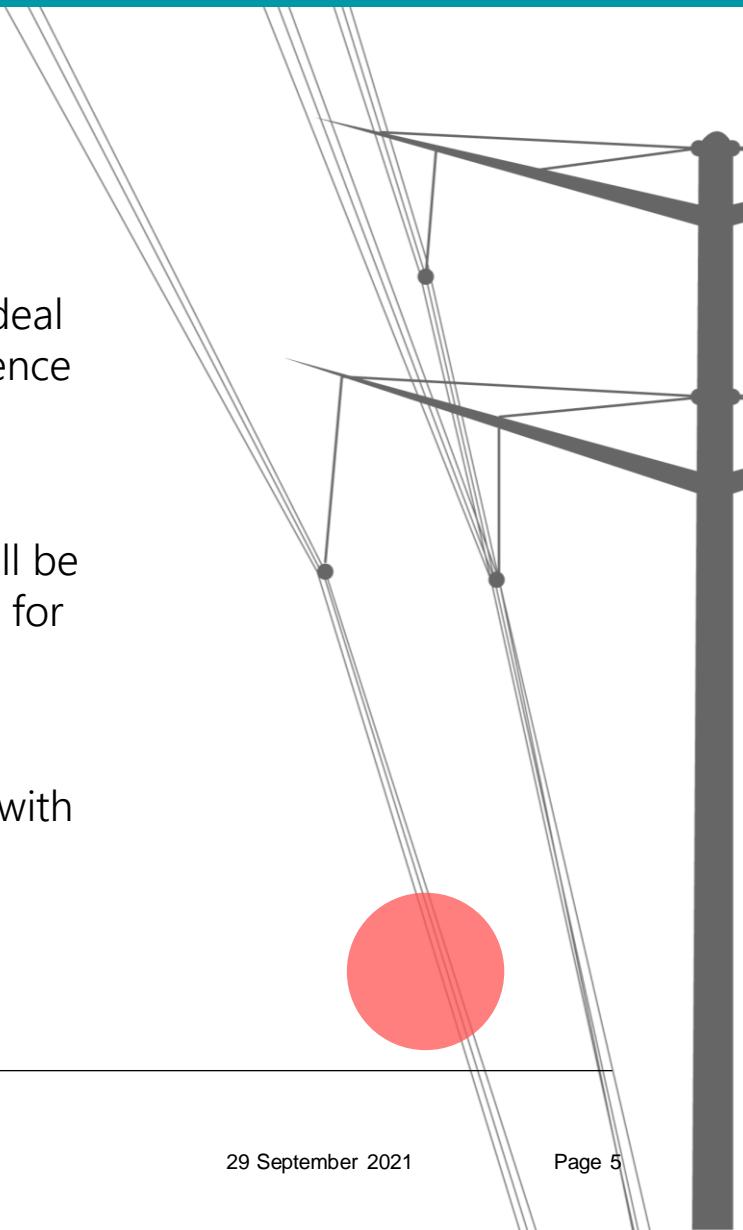
*What we do not want to do*

- Determine a number of buildings to be awarded an SRI certificate
- Provide that anyone with an interest can "report" SRI certificates to the DEA.

# Project-based approach

## Sub-tasks

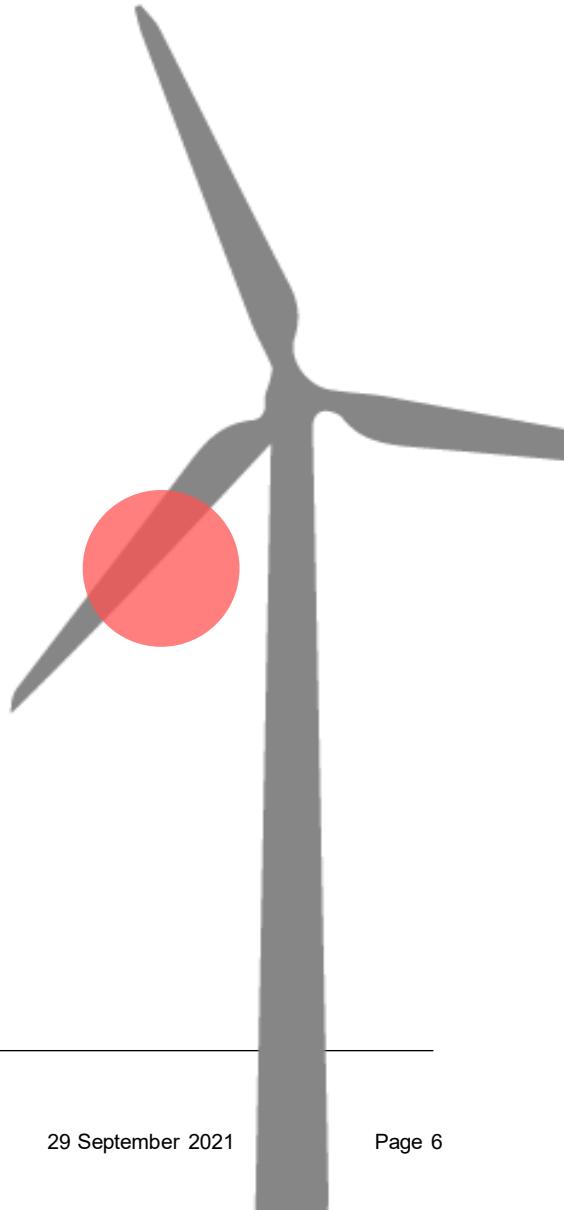
- Testing the developed material:
  - SRI calculations performed on a number of buildings - using the calculation sheet from the assessment package.
  - Interviews of building owners for the performed tests. The experiences will deal with the building owner's expectations as well as understanding and experience of the labeling.
- Input to a Danish context:
  - Based on knowledge gained from the performed calculations, a proposal will be prepared for the strengths and weaknesses of the method, and suggestions for how the method can or should be adapted to a Danish context.
- Stakeholder involvement:
  - Convert knowledge obtained through the tasks above through a workshop with a presentation of the current results obtained in the project.
  - It is important that knowledge and experience with the indicator is communicated on an ongoing basis, so the test contributes to a general increased level of knowledge about the indicator.



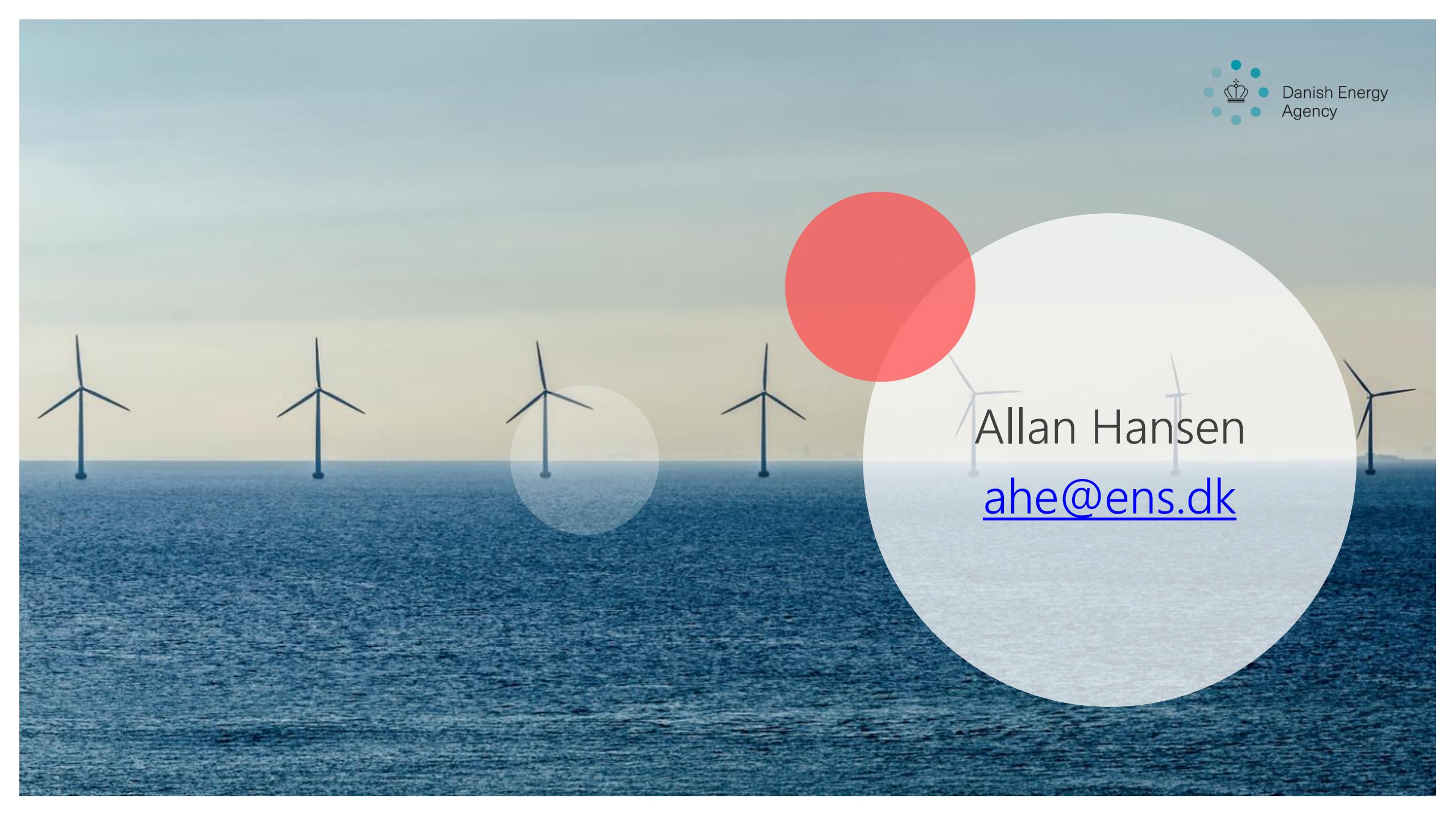
# Some open-ended questions

*– answers are still missing*

- SRI focuses on more than energy efficiency, also on flexibility and health. It provides a very wide range of stakeholders. How is everyone involved - do you have to think in divided tracks?
- There may be synergies between SRI and EPC. How do the registrations differ (overlap and differences) in the two schemes, and which competencies require an SRI registration?
- How is overlap identified with existing labeling schemes so that SRI can be adapted to a possible vacuum among building owners with an interest in energy efficiency, flexibility and health?







Allan Hansen  
[ahe@ens.dk](mailto:ahe@ens.dk)



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Hybrid workshop

10h10-10h20

# Building EPCs: The enabler SRI

29 September 2021, 09h00 – 10h30 CEST



**SRI national testing & outlook in France**

by **Nicolas Cabassud**

French Scientific & Technical Centre on Risks,  
Environment, Mobility and Land Use Planning

Ministry of Sustainable Development



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**U-CERT**  
User-Centred Energy Performance Assessment and Certification



# Situation of SRI test in France

CABASSUD Nicolas – Cerema Méditerranée

# When we plan to test

---

- France follow european development of SRI
  - WGA - Implementation
  - WGB - Méthodology
  - WGC - Feed back

→Interest of France  
**SRI deployment target in April 2022**



# Provisional schedule

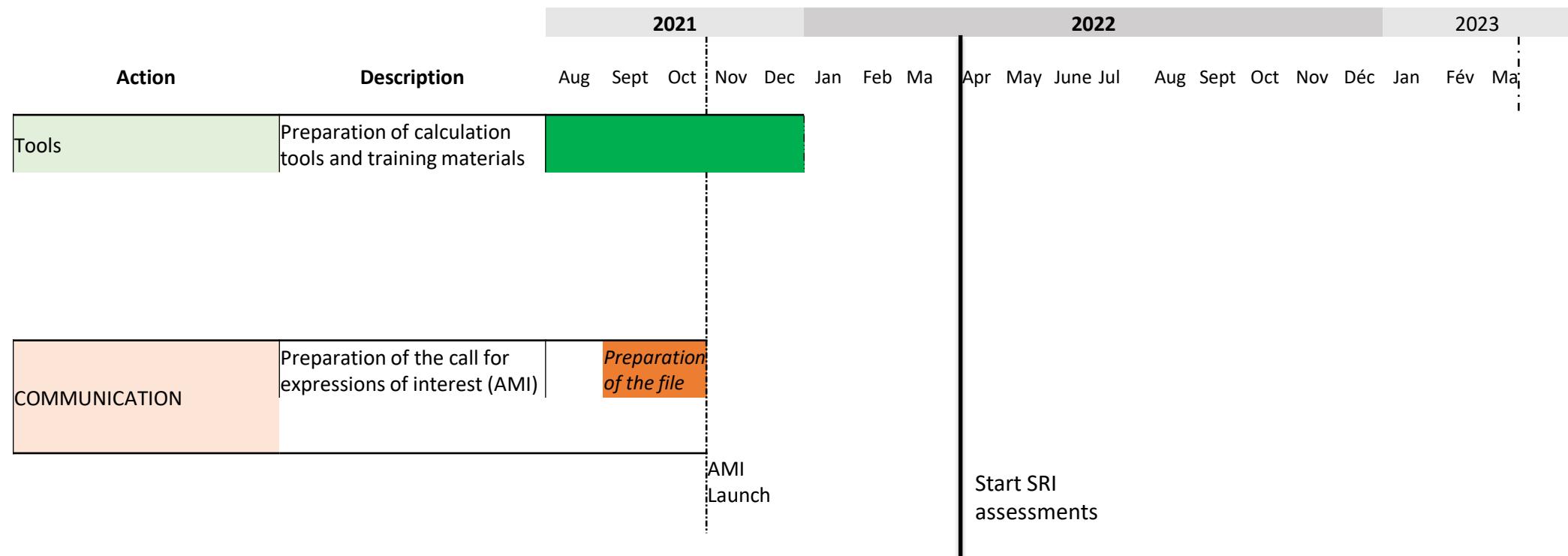
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| Action | Description   | 2021 |      |     |     |     | 2022 |     |    |     |     | 2023 |     |     |      |     |     |     |     |     |    |
|--------|---|------|------|-----|-----|-----|------|-----|----|-----|-----|------|-----|-----|------|-----|-----|-----|-----|-----|----|
|        |   | Aug  | Sept | Oct | Nov | Dec | Jan  | Feb | Ma | Apr | May | June | Jul | Aug | Sept | Oct | Nov | Déc | Jan | Fév | Ma |
| Tools  | Preparation of calculation tools and training materials |      |      |     |     |     |      |     |    |     |     |      |     |     |      |     |     |     |     |     |    |

Start SRI assessments

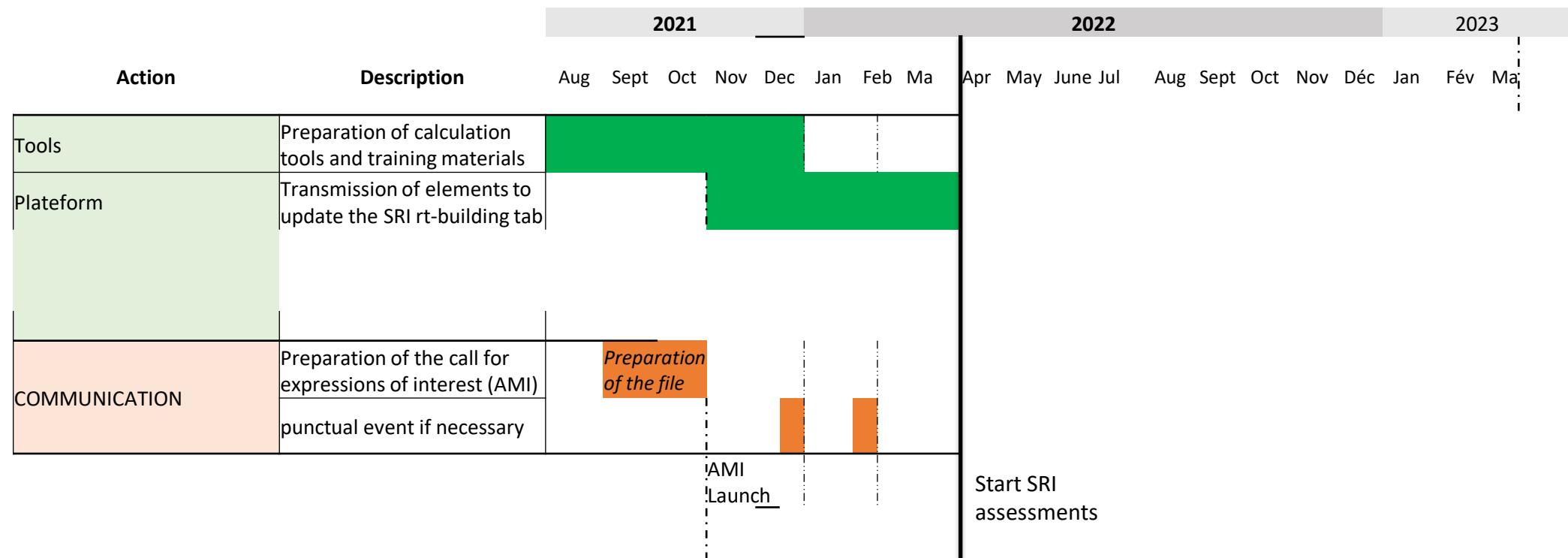
# Provisional schedule

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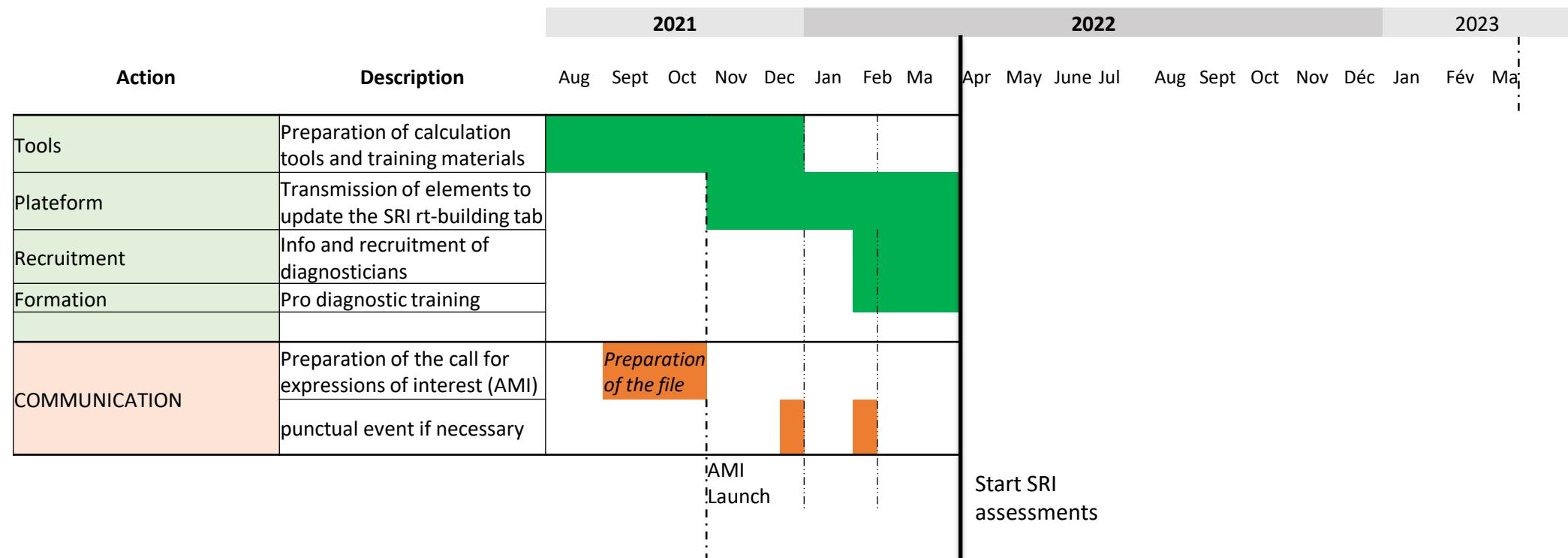
# Provisional schedule

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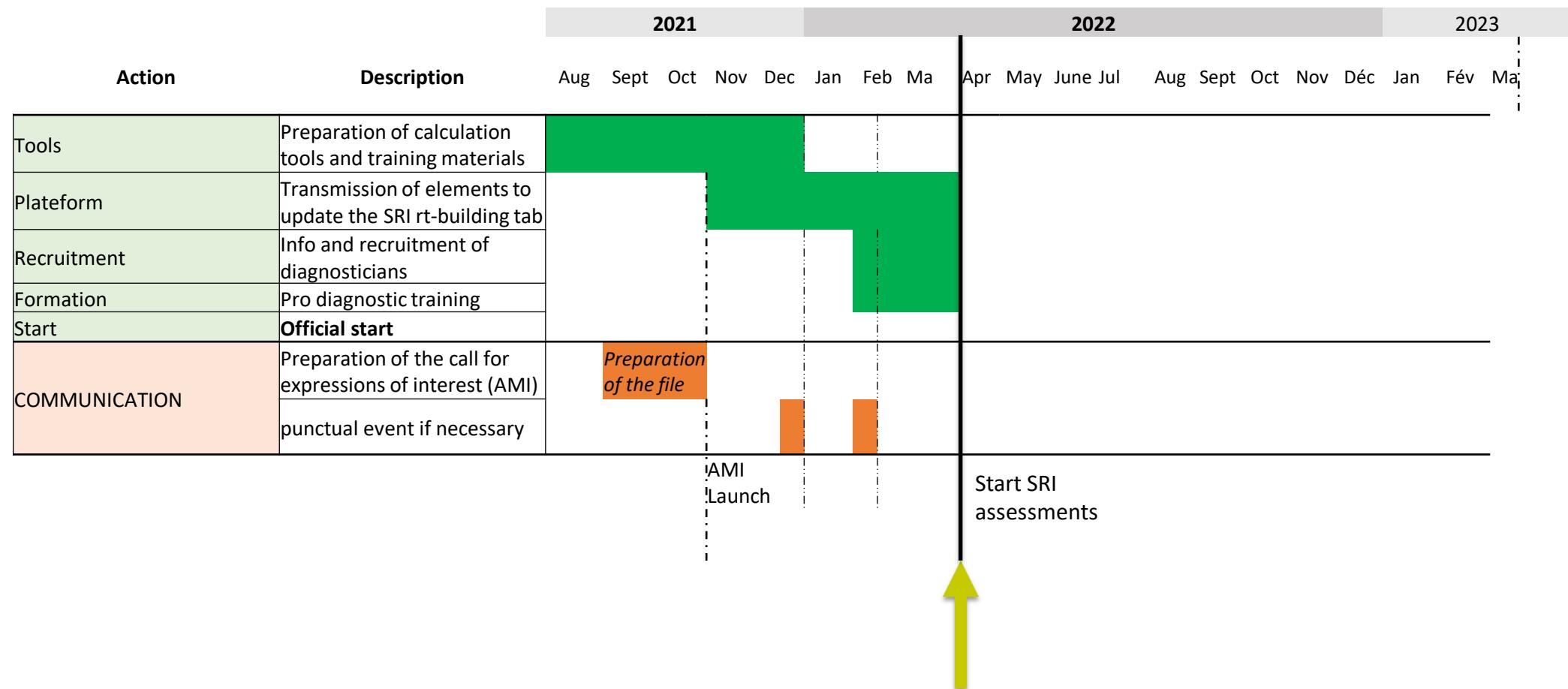


# Provisional schedule

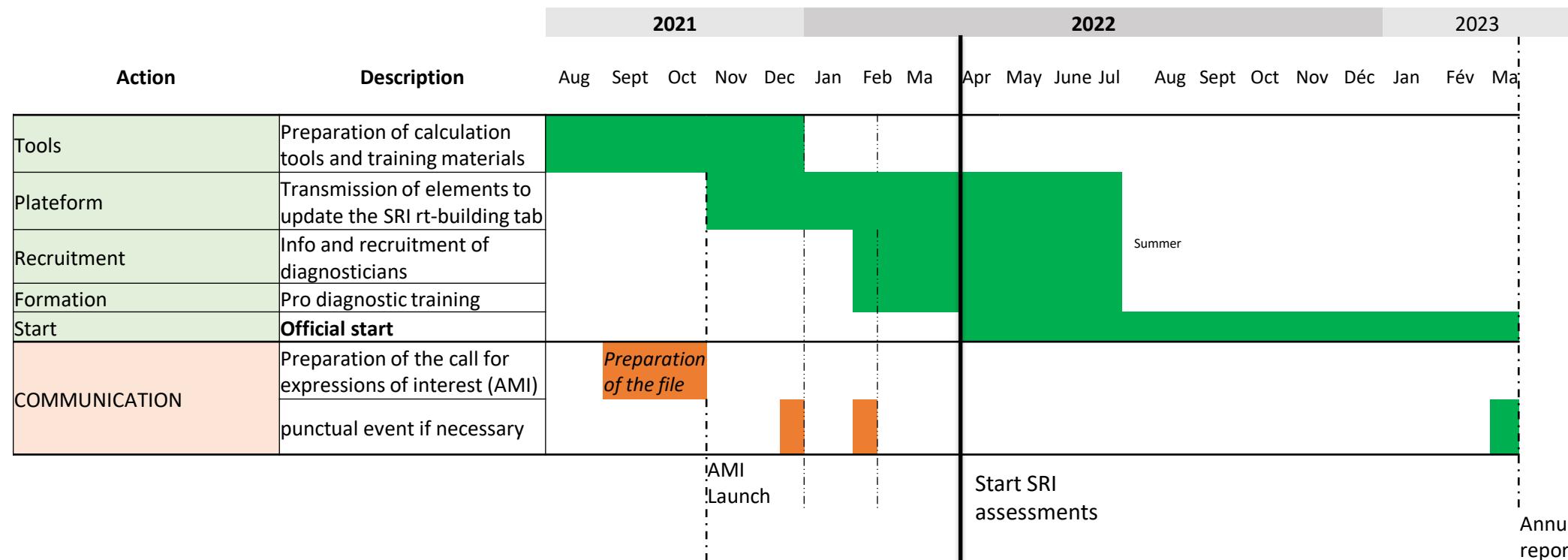
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# Provisional schedule



# Provisional schedule



# Few french specificities

---

The idea is to stay close to the method with little adaptation to facilitate comparison

- **Test « Méthode A »** for Individual house or apartments
- **Test « Méthode B »** for entire collective residential building and non résidential buildings
- Define mandatory domain, for example: heating or ventilation are mandatory but no cooling or ECS ...
- Don't change the European weighting to facilitate the feedback (*however, studing spéficif weighting for « energy consumption »*)
- Uses DPE certifier pool for SRI

# Few french specificities

---

## Main needs presented after the 1st test

- Implementation for connectivity interoperability
- Adapt the weighting to the building configuration: Bring together EPC and SRI
- ...

---

# Thanks for attention

nicolas.cabassud@cerema.fr



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Hybrid workshop

10h20-10h30

# Building EPCs: The enabler SRI

29 September 2021, 09h00 – 10h30 CEST



SRI national testing & outlook in Italy

by Biagio Di Pietra

Energy Efficiency Department



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Italian National Agency for New Technologies,  
Energy and Sustainable Economic Development

# Status of SRI testing in Italy

## Activities of ENEA

- *29 September 2021*
- *Eng. Biagio Di Pietra*

- *ENEA – Energy Efficiency Unit Department*



# Status of SRI testing and implementation in Italy

Italy's position in the short term: Waiting for the results obtained in a National Research Programme to decide how to start the testing phase and the subsequent implementation phase.

- ENEA activities on SRI in the framework of European activities
- Participation as Stakeholder in the first and second European technical studies
- Participation in the first European beta testing (5 case studies sent: offices, hospital, school, residential buildings)
- Participation in the Concerted Action EPBD working group

# ENEA Activity on Smart Readiness Indicator

## Activities of ENEA in the framework of the National Electrical System Research programme

- Analysis of national standards for buildings and their technical systems to evaluate the "smartness" potential of the **existing residential built stock**
- Application of the SRI calculation methodology to different case studies ( office building with technical systems of different automation and intelligence levels) and assessment of the achievable SRI scores;
- Market analysis aimed to evaluate how the services and functional levels, which are in the catalogue proposed in the European SRI technical study, can be adapted to the national building context for different categories of buildings;

*Activity conducted in collaboration with the University of Cassino*

The results of these studies will be able to support national SRI evaluation

# Evaluation of the smartness potential of the National existing residential building stock

## First Results of the Study

Conducted in collaboration with the University of Cassino

Statistical analysis of the existing residential building stock and of the regulatory context regarding management and control systems.

8 case studies representative of the national built stock were identified.

The calculation method of the first beta testing was used for this analysis.

For these SRI scores ranging from 0-23% were calculated.

The estimated SRI score of the existing stock including residential buildings is approximately 5.2%.

Two scenarios with increasing levels of smartness were simulated to determine the potential for improvement obtainable from the renovation of residential buildings (by means of retrofitting actions).

The national average SRI score would be equal to 15.8% and 27.6% in the two simulated scenarios.

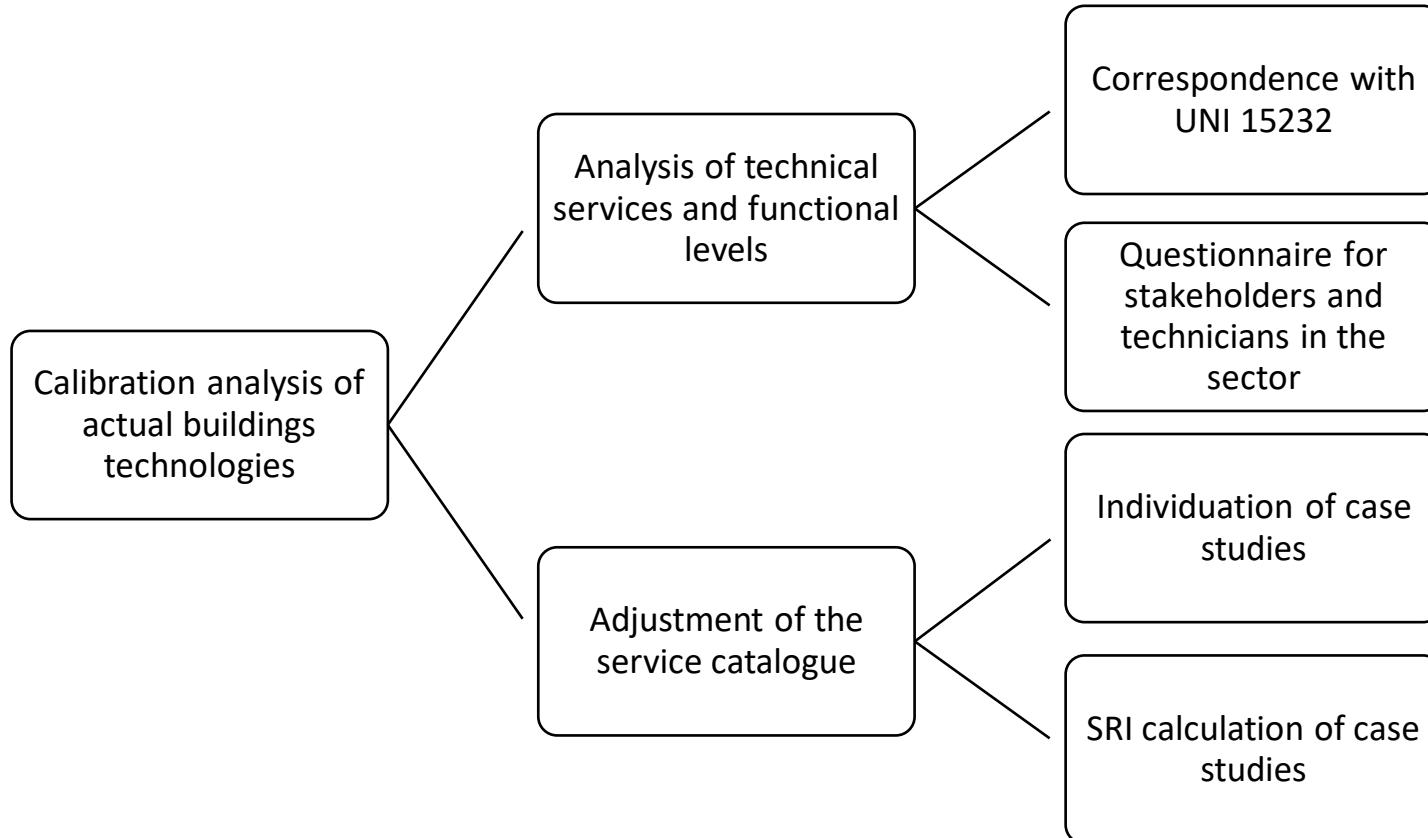


| SBT | Type        | Construction period | SRI |
|-----|-------------|---------------------|-----|
| A   | Autonomous  | < 1980              | 0%  |
| B   | Centralized |                     | 17% |
| C   | Autonomous  | 1981-1990           | 9%  |
| D   | Centralized |                     | 17% |
| E   | Autonomous  | 1990-2005           | 12% |
| F   | Centralized |                     | 20% |
| G   | Autonomous  | > 2006              | 23% |
| H   | Centralized |                     | 23% |

# Market analysis and calibration of the technical service catalogue

## First Results of the Study

conducted in collaboration with the University of Cassino



Frist results of the calculation of the SRI for two case studies (office buildings) are represented before and after the calibration of the service catalogue according to market analysis.

| SRI results  | Before calibration | After calibration |
|--------------|--------------------|-------------------|
| CASE STUDY 1 | 54%                | 65%               |
| CASE STUDY 2 | 53%                | 62%               |

**Thanks for your attention**

*biagio.dipietra@enea.it*



## Panel Next Gen EP Certificates H2020 cluster



Maike  
Venjakob



Andrei  
Lițiu



Maarten  
De Groote



Christiana  
Panteli



Michał  
Zbigniew  
Pomianowski



María  
Fernández  
Boneta



Sylvain  
Kubicki

crossCert



David  
Jenkins



Peter  
Gyuris



Alexander  
Deliyannis

TIMEPAC



Boris  
Sučić

crossCert



TIMEPAC





## Panel Next Gen EP Certificates H2020 cluster

- Q1: How is your project **investigating or demonstrating links** between energy performance certification and the SRI?
- Q2: Can you comment on some **intermediary findings**? How does **SRI assessment leverage EPCs** or vice versa?
- Q3: Now the delegated and implementing act have established the **SRI as a common EU instrument**, some **Member States are engaging in national testing or implementation phases**. Can you explain how your project is **engaging in or interacting** with such national tests?
- Q4: The SRI is envisioned as an instrument that can be **flexibly updated**, e.g. by integrating new smart services in the catalogues as they grow mature. What kind of **innovative technological solutions** do you see coming up (or are you working on in your project)?
- Q5: EPCs are established during a formal **certification process by accredited professionals**. For the SRI some alternative assessments setups could also be envisioned, e.g. **self-assessment, probably not leading to a formal certificate**. Can you share some **insights** on who you think should perform such assessment, what are the **training needs**, etc.?

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**iBRoad2EPC**

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**U-CERT**  
User-Centred Energy Performance Assessment and Certification



**D<sub>2</sub>EPC**



**ePANACEA**  
Smart European Energy Performance Assessment & Certification

**EPC RECAST**  
ENERGY PERFORMANCE CERTIFICATE RECAST



## Panel Next Gen EP Certificates H2020 cluster



Maike  
Venjakob



Andrei  
Lițiu



Maarten  
De Groote



Christiana  
Panteli



Michał  
Zbigniew  
Pomianowski



María  
Fernández  
Boneta



Sylvain  
Kubicki

crossCert



David  
Jenkins



Peter  
Gyuris



Alexander  
Deliyannis



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User-Centred Energy Performance Assessment and Certification



ENERGY PERFORMANCE CERTIFICATE RECAST



## Panel Next Gen EP Certificates H2020 cluster

- **Q1:** How is your project **investigating or demonstrating links** between energy performance certification and the SRI?
- **Q2:** Can you comment on some **intermediary findings**? How does **SRI assessment leverage EPCs** or vice versa?
- **Q6:** On the longer term, **further innovation** can be brought into the SRI assessment methodology, e.g. by relying **partially or completely on processing actual building data**. Which advances are you exploring in your project?
- **Q7:** Can you share some best practices on communicating on the SRI to a non-expert audience?
- **Q8:** What actions are needed to boost the uptake of the SRI and who should be taking them? How will your project support this?
- **Q9:** EPCs are at present issued based on **steady-state calculations** that in simplistic manner reflect the building and its systems. Is it worth to investigate possibilities and challenges related to **dynamic calculation** based EPCs? Would that open window possibility for **processing actual building data** linked with SRI assessment?

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## Panel Next Gen EP Certificates H2020 cluster



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# Closing remarks

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**Blagodarjá!**

**Hvala!**

**Děkuji!**

**Tak!**

**Dank je!**

**Thank you!**

**Aitäh!**

**Kiitos!**

**Merci!**

**Danke!**

**Efcharisto!**

**Köszönöm!**

**Go raibh maith agat!**

**Grazie!**

**Paldies!**

**Ačiū!**

**Grazzi!**

**Dziękuję!**

**Obrigado!**

**Mulțumesc!**

**Ďakujem!**

**Hvala!**

**Gracias!**

**Tack!**

