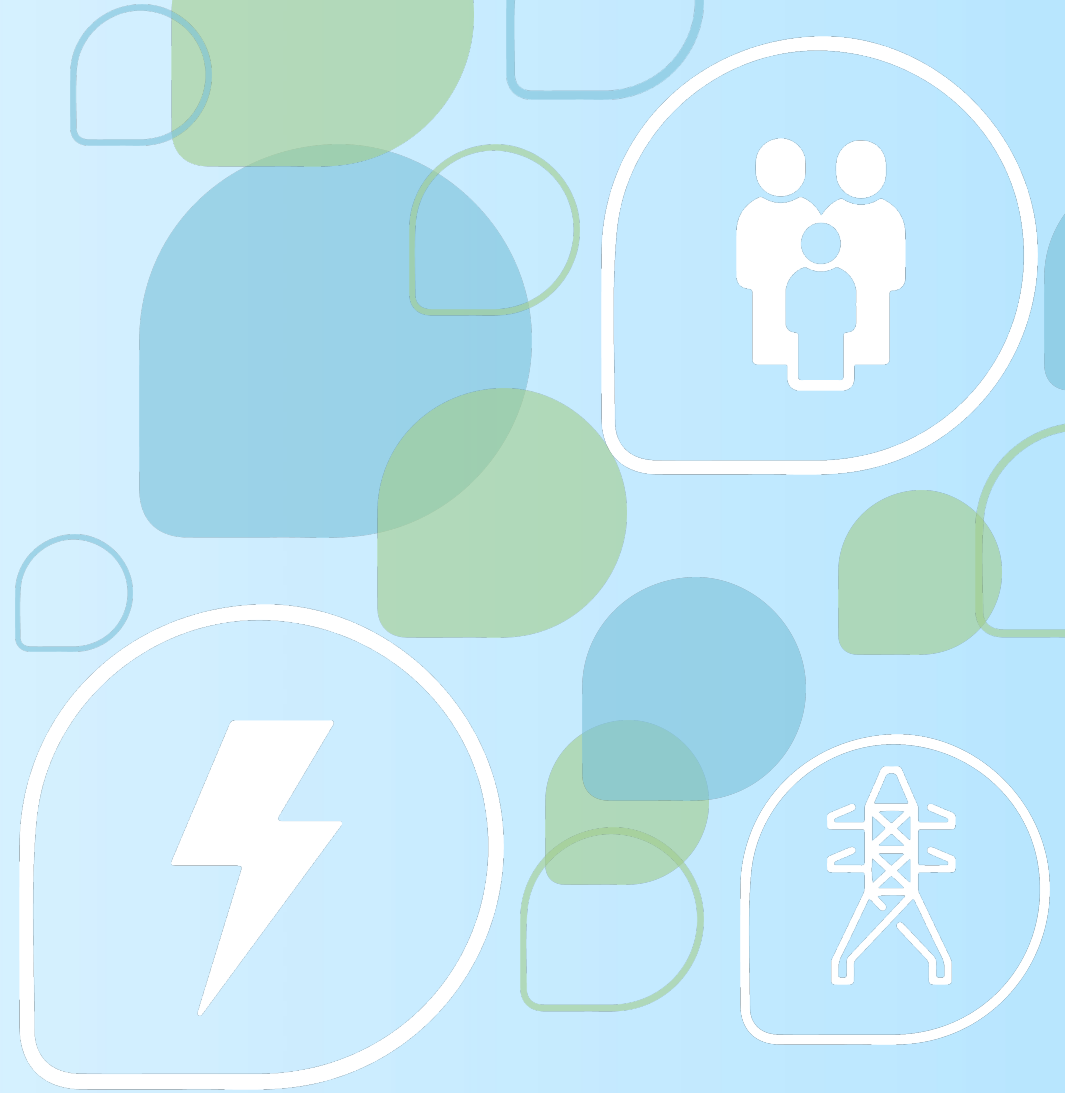


# Smart Readiness Indicator (SRI)

SRI training webinar

*7 December 2021*



# 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.*



# Agenda

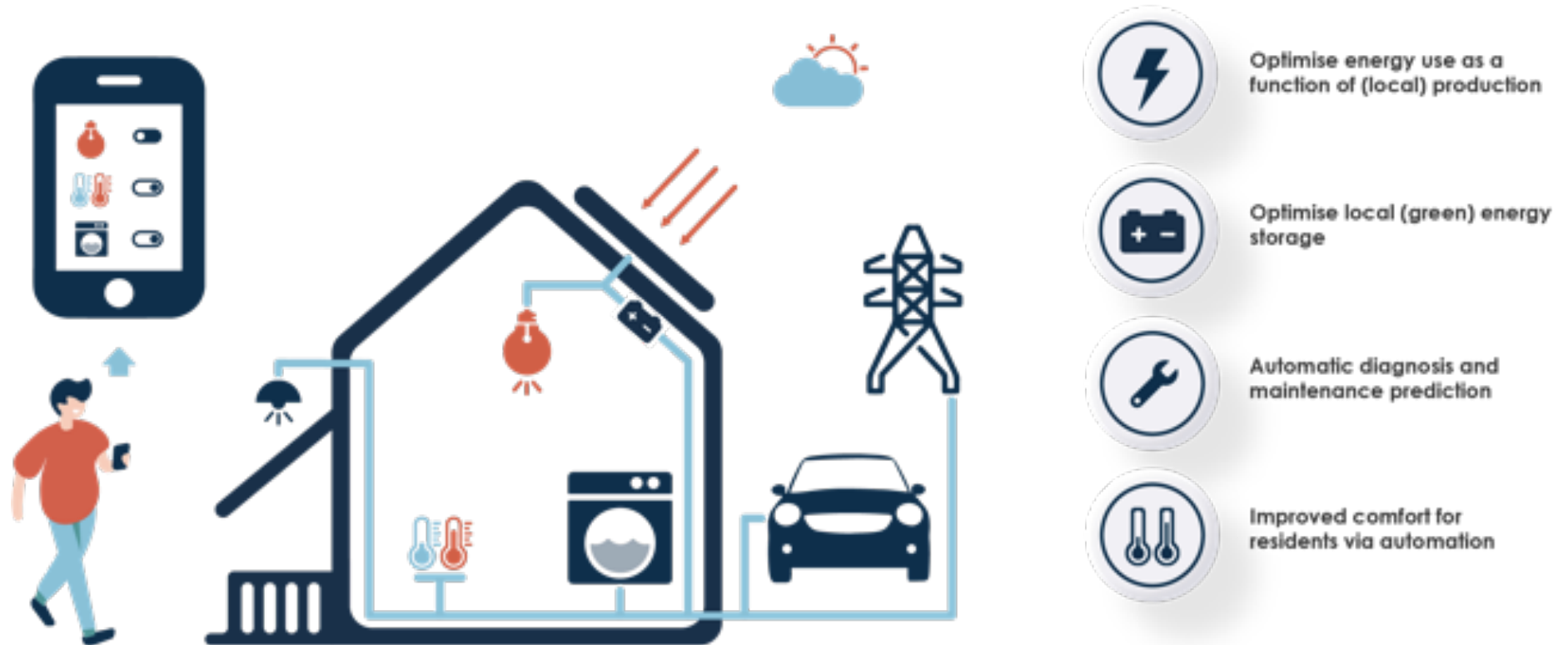
- Introduction to the SRI framework
- The building blocks of the SRI methodology
- Assessing the SRI in practice
- SRI public resources
- Next steps
- Q&A

# Introduction to the SRI framework



# Benefits of smart building technologies

Smart technologies will be an essential enabler to **decarbonise the building sector**, while offering **healthier, more efficient**, and **comfortable** living environments

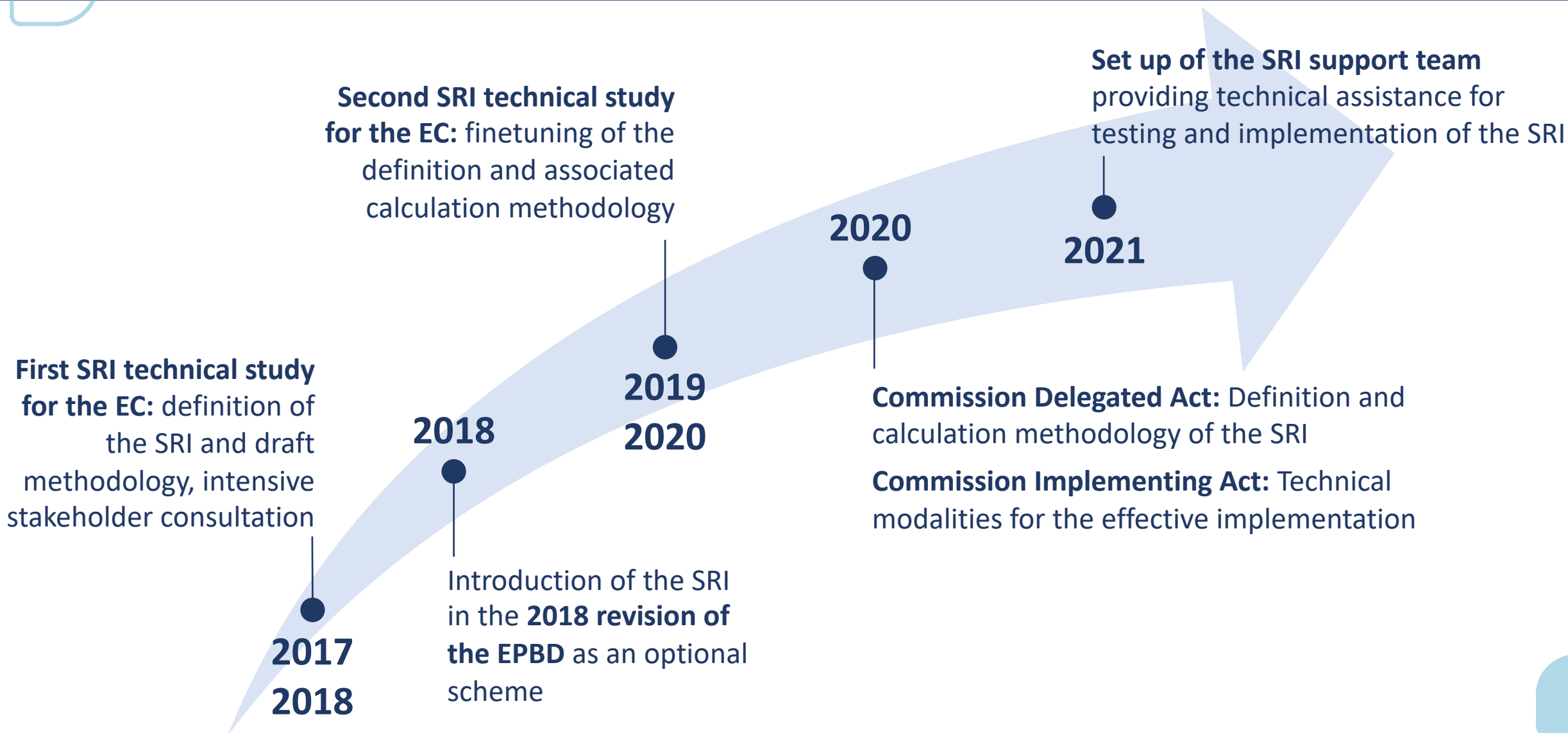




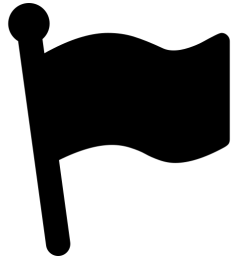
# The SRI in the EU policy landscape

- 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
- EPBD thus introduced the concept of a **“Smart Readiness Indicator” (SRI): a common EU framework for rating the smart readiness of buildings**
- The SRI concept has then been developed in close cooperation with Member States and relevant stakeholders of the building value chain
- Member States are now officially invited to implement the SRI (with possibly a preliminary test phase)

# History of the SRI



# Launch of official SRI testing phases



**The decision to launch a test phase or implement the SRI belongs to EU Member States.**

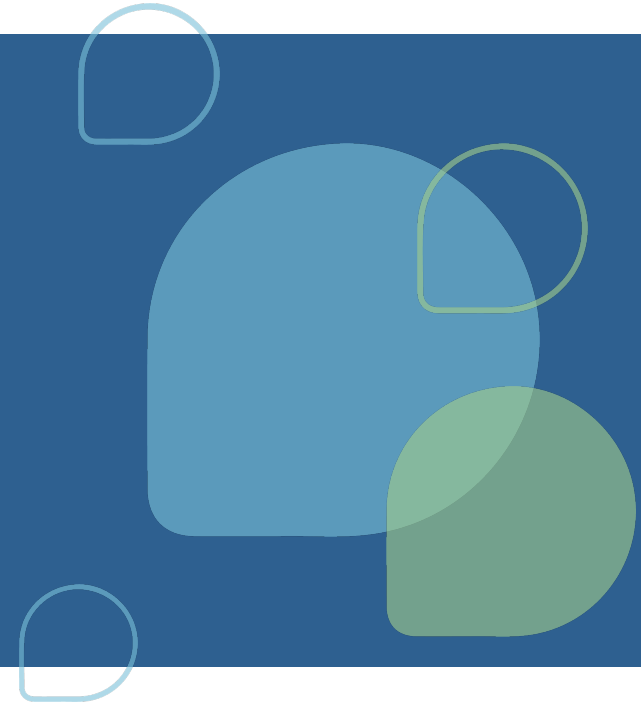
Only where a government decides to do so, formal SRI assessments can be conducted.



Private or research stakeholders not involved in official implementation or test phases are welcome to participate in discussions and to conduct informal SRI-related activities.

However, no formal SRI certifications can be issued without prior Member State agreement.

# The building blocks of the SRI methodology



# 3 key functionalities

- The SRI assesses buildings (or building units), based on their capacity to satisfy three key functionalities:



Optimise energy  
efficiency and overall  
in-use performance



Adapt their operation  
to the needs of the  
occupant



Adapt to signals  
from the grid  
(energy flexibility)

# 7 impact criteria

- The three key smart-readiness functionalities are further detailed into **seven impact criteria**:



1

Optimise energy efficiency and overall in-use performance



2

Adapt their operation to the needs of the occupant



3

Adapt to signals from the grid (energy flexibility)



Energy efficiency



Maintenance and fault prediction



Comfort



Convenience



Health, well-being and accessibility



Information to occupants



Energy flexibility and storage

# 9 technical domains

- The methodology for calculating the SRI is based on the **assessment of smart-ready services** that the building has or could use ("service catalogue"). These services are grouped into **nine technical domains**:



Heating



Cooling



Domestic hot  
water



Ventilation



Lighting



Dynamic building  
enveloppe



Electricity



















Electric vehicle  
charging



Monitoring and  
control

















# Scores calculated at different levels

The assessment provides detailed scores by domain and impact criterion (up to 57 scores)...

|  |  Energy efficiency |  Maintenance and fault prediction |  Comfort |  Convenience |  Health, well-being and accessibility |  Information to occupants |  Energy flexibility and storage |
|--|---|--|--|---|--|--|--|
|  Heating                     | %   | %  | %  | %   | %  | %  | %  |
|  Cooling                     | %   | %  | %  | %   | %  | %  | %  |
|  Domestic hot water          | %   | %  | %  | %   | %  | %  | %  |
|  Ventilation               | %   | %  | %  | %   | %  | %  | %  |
|  Lighting                  | %   | %  | %  | %   | %  | %  | %  |
|  Dynamic building envelope | %   | %  | %  | %   | %  | %  | %  |
|  Electricity               | %   | %  |  |   |  | %  | %  |
|  Electric vehicle charging |   | %  |  | %   |  | %  | %  |
|  Monitoring and control    | %   | %  | %  | %   | %  | %  | %  |

















# Scores calculated at different levels

... but also  
aggregate  
scores for each  
of the 9  
technical  
domains...




















|  |  Energy efficiency |  Maintenance and fault prediction |  Comfort |  Convenience |  Health, well-being and accessibility |  Information to occupants |  Energy flexibility and storage |   |
|--|---|--|--|---|--|--|--|---|
|  Heating                     | %   | %  | %  | %   | %  | %  | %  | % |
|  Cooling                     | %   | %  | %  | %   | %  | %  | %  | % |
|  Domestic hot water          | %   | %  | %  | %   | %  | %  | %  | % |
|  Ventilation               | %   | %  | %  | %   | %  | %  | %  | % |
|  Lighting                  | %   | %  | %  | %   | %  | %  | %  | % |
|  Dynamic building envelope | %   | %  | %  | %   | %  | %  | %  | % |
|  Electricity               | %   | %  |  |   |  | %  | %  | % |
|  Electric vehicle charging |   | %  |  | %   |  | %  | %  | % |
|  Monitoring and control    | %   | %  | %  | %   | %  | %  | %  | % |

# Scores calculated at different levels

... aggregate scores for each of the 7 impact criteria...











|  |                           | %  | %   | %   | %  | %   | %   | %   |
|--|---------------------------|--|---|---|--|---|---|---|
|  |                           | <br>Energy efficiency | <br>Maintenance and fault prediction | <br>Comfort | <br>Convenience | <br>Health, well-being and accessibility | <br>Information to occupants | <br>Energy flexibility and storage |
|    | Heating                   | %  | %   | %   | %  | %   | %   | %   |
|    | Cooling                   | %  | %   | %   | %  | %   | %   | %   |
|    | Domestic hot water        | %  | %   | %   | %  | %   | %   | %   |
|  | Ventilation               | %  | %   | %   | %  | %   | %   | %   |
|  | Lighting                  | %  | %   | %   | %  | %   | %   | %   |
|  | Dynamic building envelope | %  | %   | %   | %  | %   | %   | %   |
|  | Electricity               | %  | %   |   |  |   | %   | %   |
|  | Electric vehicle charging |  | %   |   | %  |   | %   | %   |
|  | Monitoring and control    | %  | %   | %   | %  | %   | %   | %   |

# Scores calculated at different levels










|  | %  |  | %  |   |  |  | %  |   |
|--|--|--|--|---|--|--|--|---|
|  |  Optimise energy efficiency and overall in-use performance <sup>1</sup> |  |  Adapt its operation to the needs of the occupant <sup>2</sup> |   |  |  |  Adapt to signals from the grid (energy flexibility) <sup>3</sup> |   |
|  | %  | %  | %  | %   | %  | %  | %  |   |
|  |  Energy efficiency  |  Maintenance and fault prediction |  Comfort   |  Convenience |  Health, well-being and accessibility |  Information to occupants |  Energy flexibility and storage                                   |   |
|  Heating                     | %  | %  | %  | %   | %  | %  | %  | % |
|  Cooling                     | %  | %  | %  | %   | %  | %  | %  | % |
|  Domestic hot water          | %  | %  | %  | %   | %  | %  | %  | % |
|  Ventilation               | %  | %  | %  | %   | %  | %  | %  | % |
|  Lighting                  | %  | %  | %  | %   | %  | %  | %  | % |
|  Dynamic building envelope | %  | %  | %  | %   | %  | %  | %  | % |
|  Electricity               | %  | %  |  |   |  | %  | %  | % |
|  Electric vehicle charging |  | %  |  | %   |  | %  | %  | % |
|  Monitoring and control    | %  | %  | %  | %   | %  | %  | %  | % |

... aggregate scores for each of the 3 key functionalities...

# Scores calculated at different levels

| Overall SRI score (%) + SRI class  |  |  |   |  |  |  |  |
|--|--|--|---|--|--|--|--|
| %  |  | %  |   |  |  | %  |  |
|  Optimise energy efficiency and overall in-use performance <sup>1</sup> |  |  Adapt its operation to the needs of the occupant <sup>2</sup> |   |  |  |  Adapt to signals from the grid (energy flexibility) <sup>3</sup> |  |
| %  | %  | %  | %   | %  | %  | %  |  |
|  Energy efficiency  |  Maintenance and fault prediction |  Comfort   |  Convenience |  Health, well-being and accessibility |  Information to occupants |  Energy flexibility and storage                                   |  |

... and the overall SRI score together with the corresponding SRI class (seven classes, from SRI < 20% to SRI > 90%)

|  |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|
|  Heating                     | % | % | % | % | % | % | % | % |
|  Cooling                     | % | % | % | % | % | % | % | % |
|  Domestic hot water          | % | % | % | % | % | % | % | % |
|  Ventilation               | % | % | % | % | % | % | % | % |
|  Lighting                  | % | % | % | % | % | % | % | % |
|  Dynamic building envelope | % | % | % | % | % | % | % | % |
|  Electricity               | % | % |   |   |   | % | % | % |
|  Electric vehicle charging |   | % |   | % |   | % | % | % |
|  Monitoring and control    | % | % | % | % | % | % | % | % |

# Assessing the SRI in practice



# Required and optional features

**Core of the SRI methodology  
(required)**

- 3 key functionalities
- 7 impact criteria
- 9 technical domains

*Service catalogue*


*Weighting factors*

*Inclusiveness,*

*connectivity, interoperability, cybersecurity, data protection*

**Potential contextual adaptations**

→ *Guidance will be provided by the EC*



# Two 'regular' methods: A (simplified) and B (detailed)

## Method A (simplified)

- Simplified service catalogue
- Typically for **existing residential buildings** or **small non-residential buildings** (low complexity)
- Check-list approach
- Assessment time < 1 hour
- Self-assessment possible

## Method B (detailed)

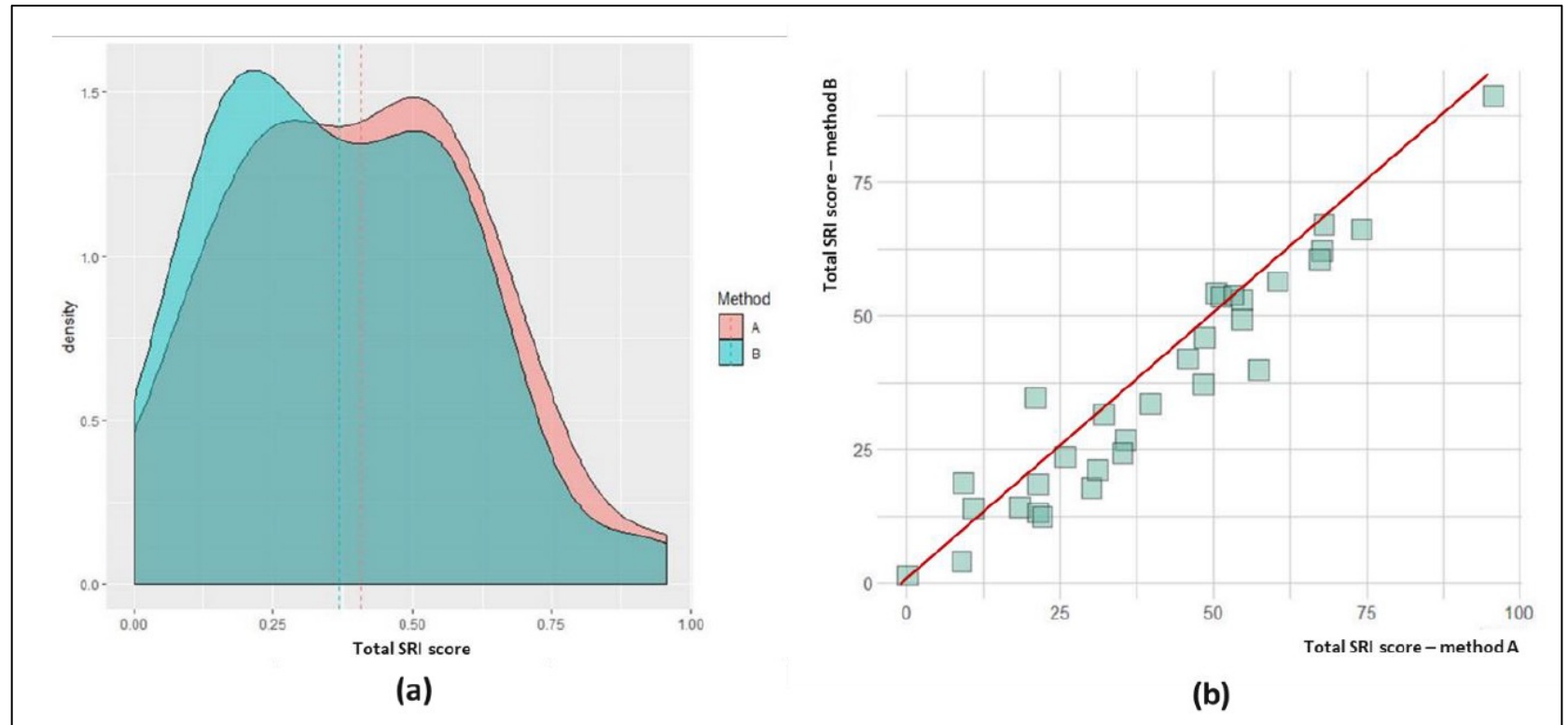
- Full, detailed service catalogue
- Typically for **new buildings** and **non-residential buildings** (higher complexity)
- On-site inspection / walk-through needed
- Assessment time < 1 day
- Necessary involvement of an expert, with support from a facility manager

- The assessment process is the same for both methods
- The service catalogue is different, which means the level of expertise required to conduct the assessment is different

# Two 'regular' methods: A (simplified) and B (detailed)

- Within a previous study, 31 buildings were assessed with both the simplified method A and the more detailed method B

- It was concluded that the results for both methods A and B were generally well-aligned



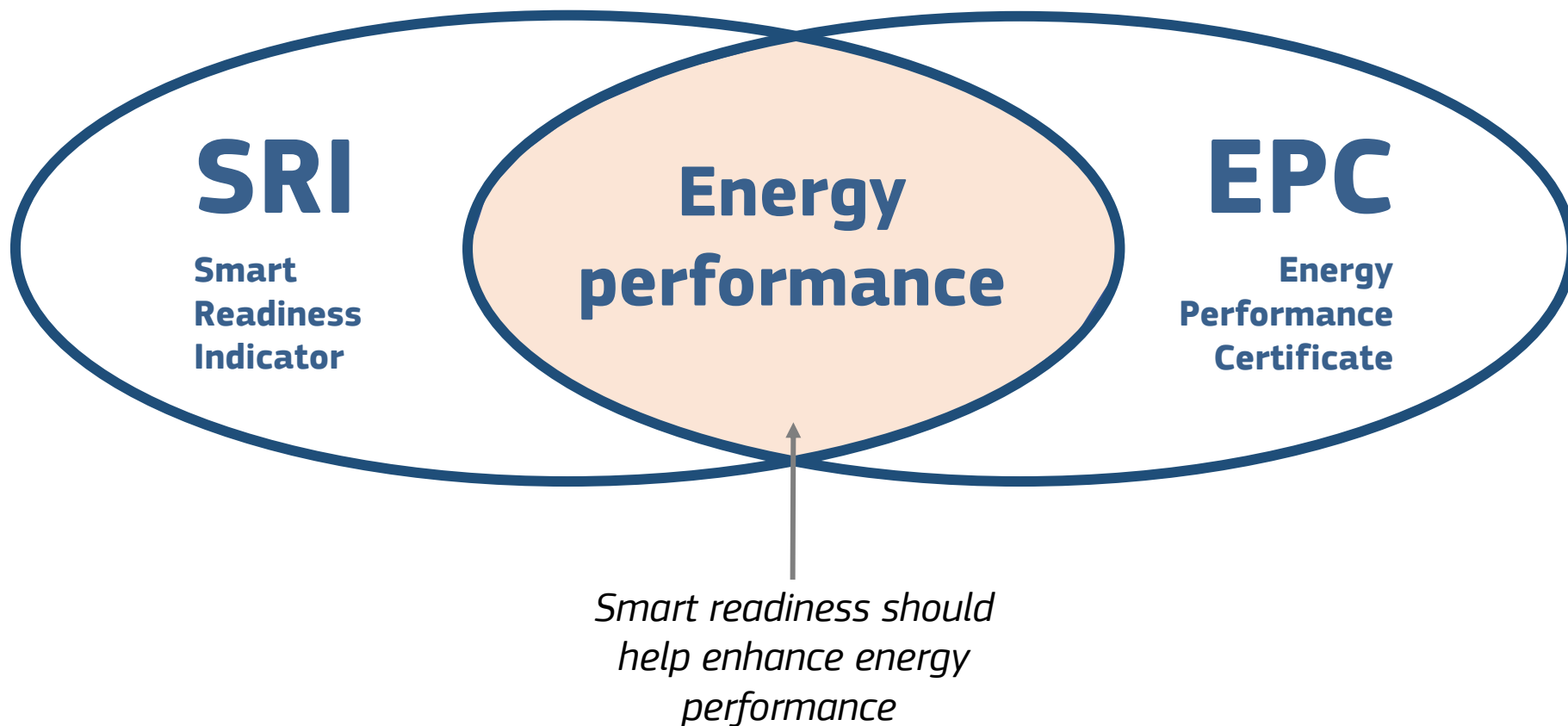
***Comparison of methods A and B, applied to the same buildings during the public beta test***



# Customized method

- A customized method is also possible
- In this case:
  - The applicable services are chosen one by one in the existing service catalogue
  - Additional services can be defined within each technical domain
- The choice between regular methods (A or B) or a customized one depends on country specificities, upon the decision of the Member State undertaking the SRI test or implementation phase.

# SRI vs EPC



- Member States may couple the issuing of the SRI certificate with their EPC scheme

# The SRI assessment package

- The SRI assessment package is available upon request at [support@smartreadinessindicator.eu](mailto:support@smartreadinessindicator.eu).
- It is based on the generic SRI methodology developed at the EU level, and it can be adapted to specific contexts
- It includes:

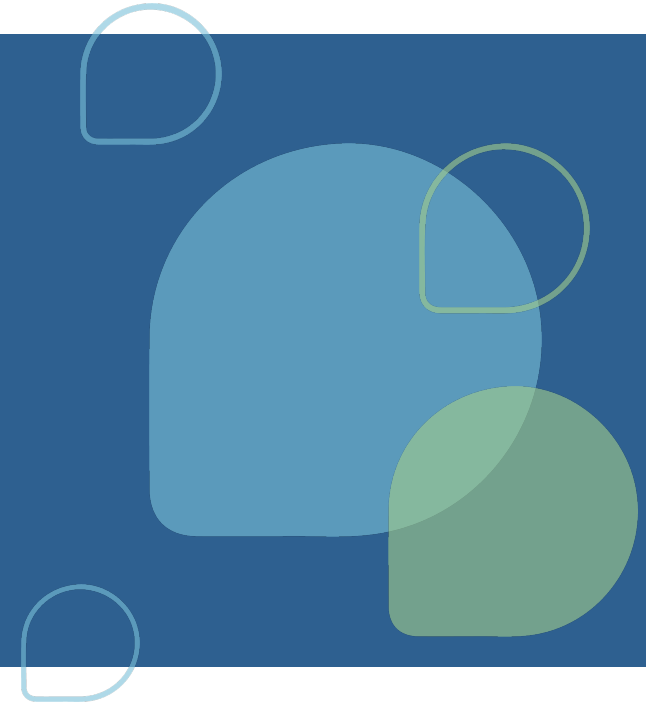
## A practical guide (PDF)



## A calculation sheet (Excel)

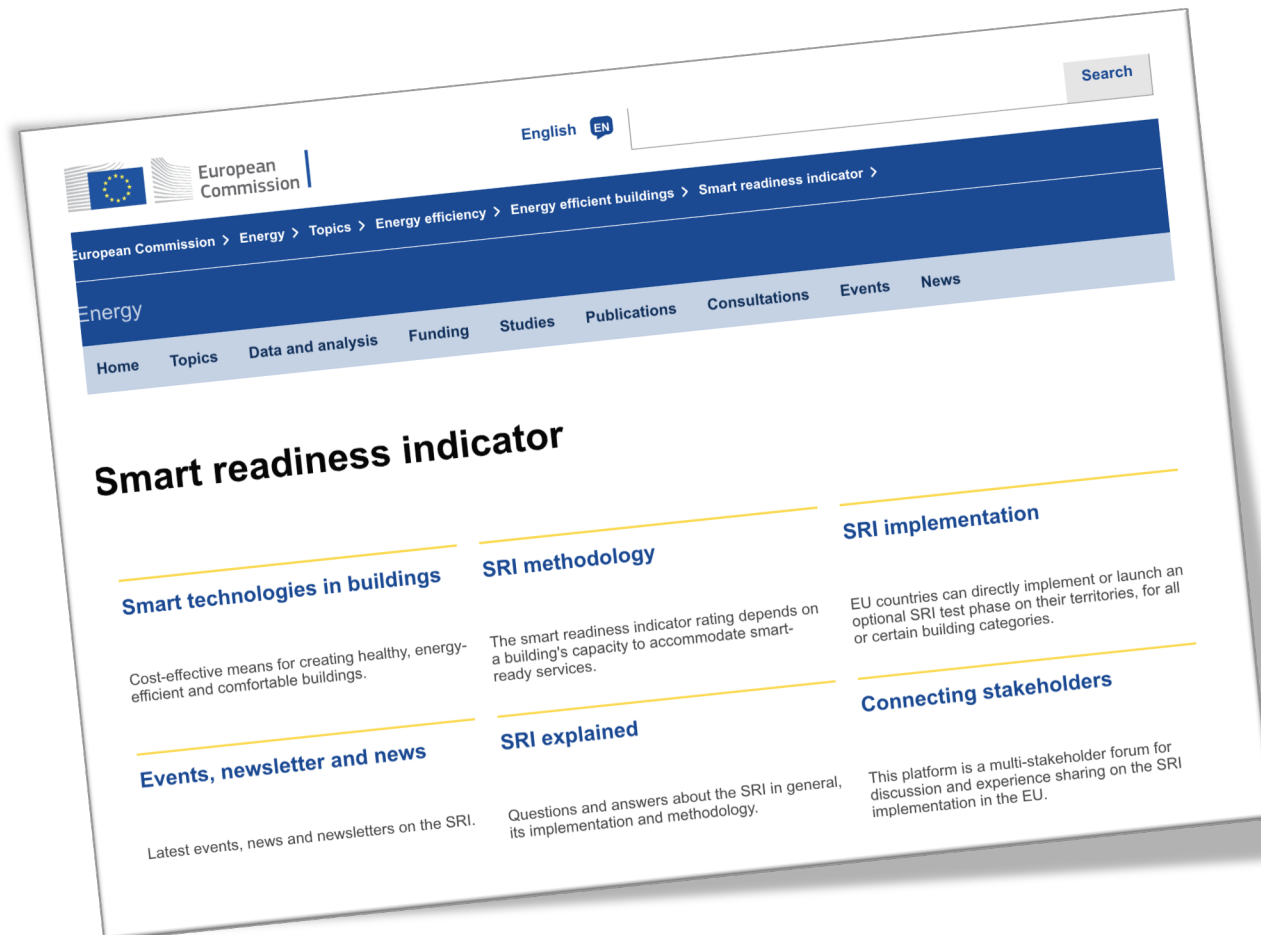


# SRI public resources



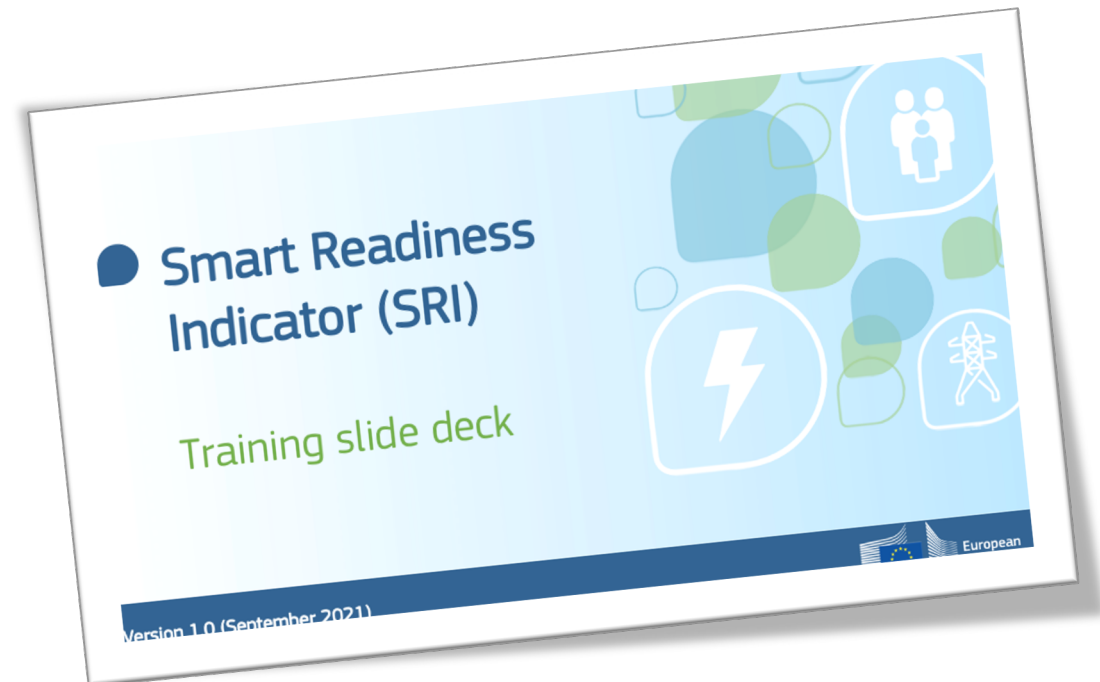
# The SRI webpage

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



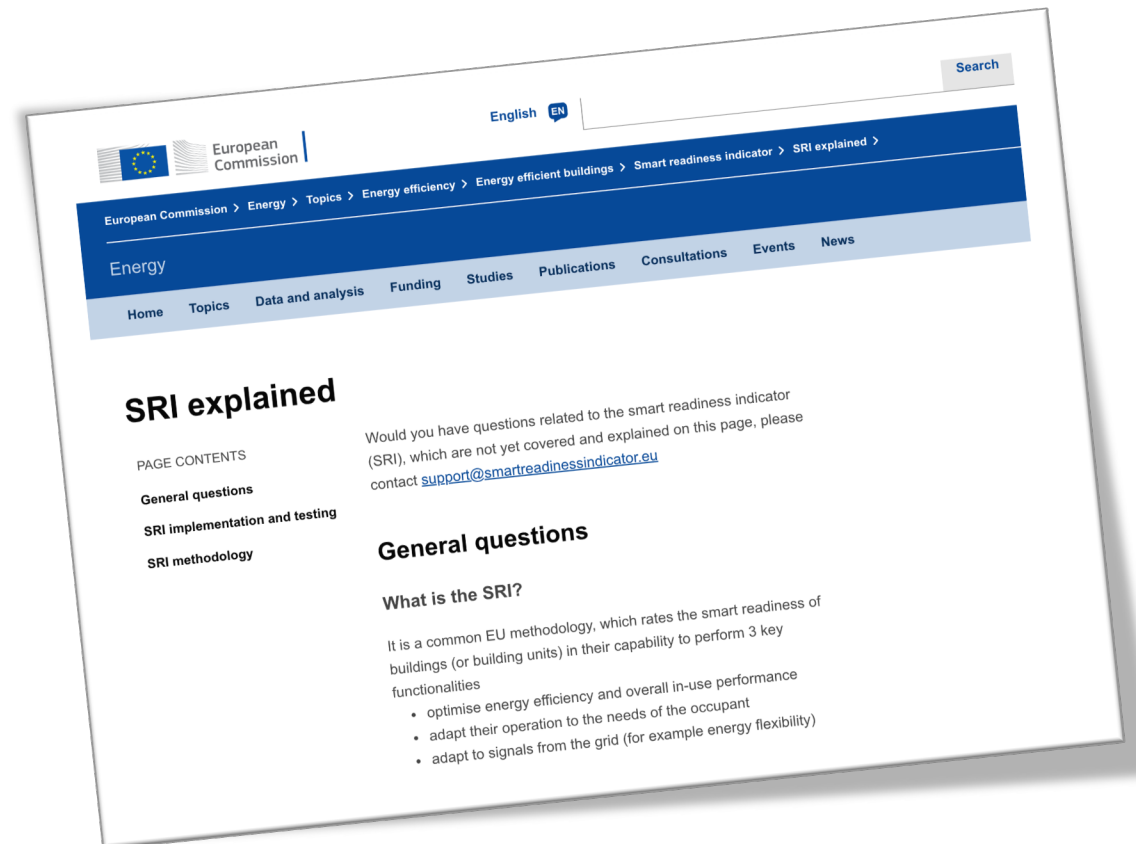
# The SRI training package

- 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 explained page

- The [SRI explained page](#) gathers questions and answers about the SRI in general, the SRI implementation and testing and the SRI methodology
- It will be regularly updated thanks to questions raised through the helpdesk and at training webinars



# The SRI newsletter

- The SRI newsletter is distributed every 3-4 months
- [Subscribe](#) to stay tuned!





# 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](#)



# Material from a study carried out in 2019–2020, supporting the development of the SRI

- Final report on the technical support to the development of a smart readiness indicator for buildings
- Executive summary of the final report

Next steps



# Launch of the SRI platform

- The SRI platform:
  - Exchange forum involving all stakeholders interested in the SRI
  - Forward-looking discussion hub for technical, regulatory and implementation aspects of the SRI
- Register [here](#) to the first plenary meeting of the SRI platform!





# Launch of the SRI platform

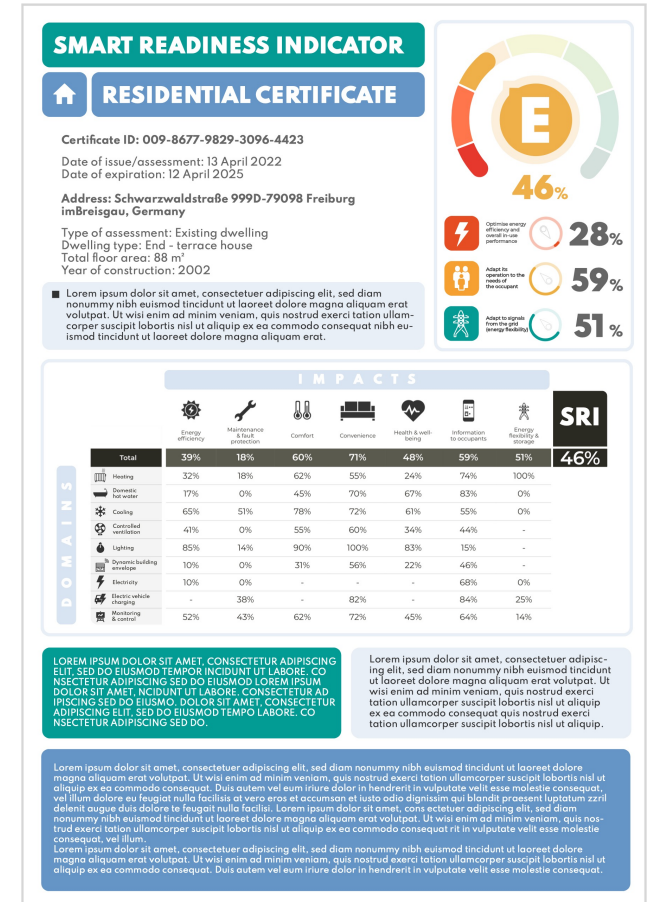
- At the agenda of this first plenary meeting:
  - The summary of the previous SRI development work
  - What is in the EPBD and the SRI acts
  - Brief overview on tasks and planning of the SRI Support contract
  - Testing programmes – summary of current status
  - SRI platform – presentation on the structure and operation of the platform, invitation to join open WGs
  - Open discussion on questions received via the chat

# SRI certificate design survey

- To support Member States to design their SRI certificates an online survey has been launched at:

<https://ec.europa.eu/eusurvey/runner/SRISurvey>

- This survey is seeking the input of building sector professionals to evaluate certificate design concepts
- Please complete it and circulate it to those in your network
- Input from Facility Managers, EPC/HVAC assessors, or estate agents is especially welcome



# Questions & Answers



# Thanks for your attention!

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

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

#SmartReadinessIndicator

