# Smart Readiness Indicator (SRI)

SRI Platform
Working Group 1
Second meeting

23 September 2022

European Commission

# Disclaimer

- This document is provided by the SRI support team, comprised of VITO (Belgium), Waide Strategic Efficiency Europe (Ireland), Research to Market (R2M) Solution (France) and LIST, the Luxembourg Institute of Science and Technology. The SRI support team has been awarded a two-year service contract by the European Commission in order to provide technical assistance to the European Commission services and to Member States in the first phases of the testing and implementation of the SRI

- 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

- Introductory words from the European Commission
- Progress of the ongoing test phases: Austria, Czech Republic, Denmark, France, Finland
- Discussion about the disclosure of WG1 outcomes to the SRI platform
- Identification of topics for discussion for the next WG1 meeting

# Introductory words from the European Commission

# Progress of the ongoing test phases

# Testing phases by Member States

**First round of the call for expressions of interest (October 2021)**

- **Austria**
- **Czech Republic**
- **Denmark**
- **France**

**Second round of the call for expressions of interest (June 2022)**

- **Croatia**
- **Finland**

**Other Member States are welcome to launch a test phase anytime!**

Recently selected LIFE-2021-CET-SMARTREADY projects may support Member States' test phases

# FIRST REPORT AND OUTLOOK FOR THE NATIONAL TEST PHASE ON THE SRI IN AUSTRIA

Robert Stadler
Austrian Institute of Construction Engineering (OIB)

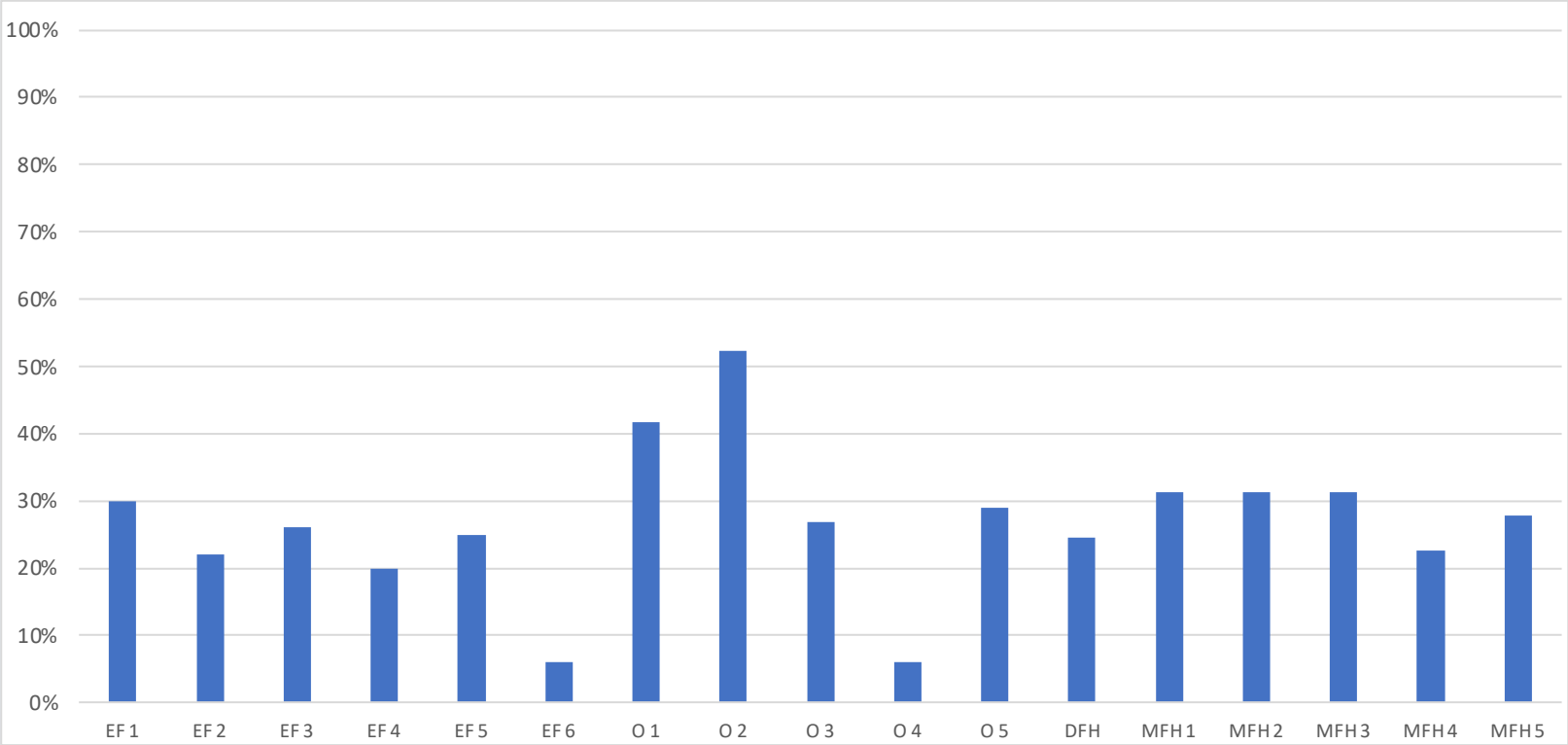




ÖSTERREICHISCHES INSTITUT FÜR BAUTECHNIK

# Analyzing the SRI methodology, proposed by the European Commission in 2020

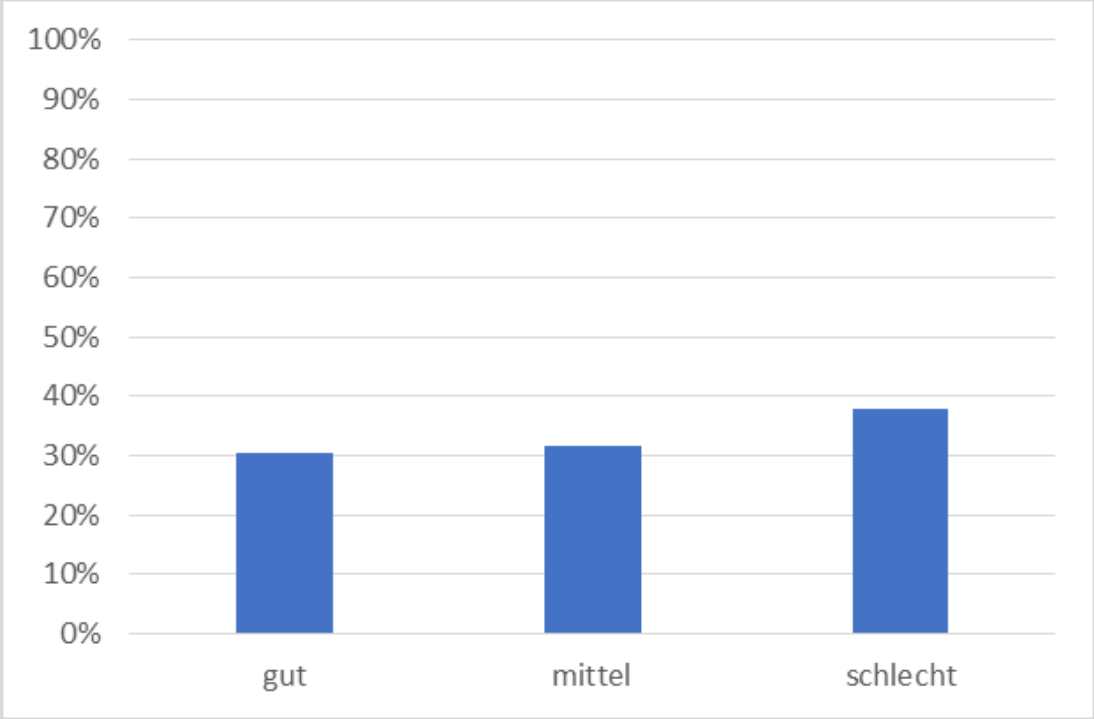
The analysis focuses on the "detailed" catalogue (expert ‘method B’). Potential effects from different uses, climate zones, building size or the condition of the building are not considered. The results come from the analysis of 17 buildings, they are shown in Figure 1 below. There are 5 educational, 4 office buildings, 1 double family home and 5 multi-family home buildings. Results range from values of 6 to 52%. None of the buildings achieved a higher SRI value, although some of them are new and so called ‘innovative’ buildings. The range within the results is also small: 76% of the buildings achieve a value between 20 and 31%.




EF – Educational Facility
O – Office
DFH – Double Family Home
MFH – Multi Family Home

# Availability of required data

The availability of data was also recorded when the 17 buildings were evaluated (see Figure ).
This was divided into three categories: good, medium and poor.
‘Good’ was defined when the necessary information could be found in a written document - e.g. in the energy certificate, in a technical report or similar.
'Medium' was defined as a logical sequence of written information, but also information gathered from facility management.
‘Poor’ data availability is characterized by the need for assumptions. Only 30% of the data required for the evaluation showed good data availability. 38% of the data were not available and had to be assumed.




Even if the analysis in this paper concentrates on the “detailed” catalog (method B): The evaluation using the “simplified” (method A) service catalogue achieves far better, i.e. higher, SRI results than the “detailed” service catalogue. A corresponding explanation and "defusing" of the meaningfulness of the "simplified" version would be desirable.

# The possibilities for non-evaluation of services

The setting of the domains (e.g. presence of ‚cooling') affects the maximum number of points that can be achieved. Otherwise essential services can be deactivated. "Applicable" or "not applicable" does the same thing, but only for non-essential services. If one sets "not applicable" instead of "applicable with functionality level 0" gets a positive effect on the overall SRI score, since a lower overall score is achievable with the latter. In terms of technical content, however, the two evaluation options often mean the same thing.
As an example: Whether the service "avoidance of overheating" is not applicable for the respective building or whether the functionality level 0 (without overheating control) is selected does not actually make any difference in terms of technical content, but in this evaluation method it does.

*Table 1: Example of an SRI assessment with different availability of ‚cooling' and ‚charging of electric vehicles' and connected services*

| Existing domain | Is the service in the respective building applicable or not | Functionality level set by the SRI auditor | Total SRI score |
|---|---|---|---|
| Not available | - | - | 29,97% |
| Available | Not applicable | - | 26,33% |
| Available | Applicable | Functionality level 0 | 22,90% |



# Different levels of functionality with the same rating

Different functionality levels result in the same evaluation for some services: For the service ‘control of the distribution pumps in networks' (heating and cooling), no further improvement can be achieved from functionality level 2. The same principle applies to airflow or pressure control at the ventilation system level, storage of (locally generated) electricity, support for (micro)grid modes and EV charging capacity. This raises the question of why higher functionalities are described and can be selected, but do not result in any difference in the evaluation.

# Conclusions so far

- An only qualitatively-focused evaluation does not create good comparability of different system approaches and solutions. Not every building has the same requirements; functional necessities are often dependent on uses, local framework conditions (e.g. climate, natural shadows, structural density) and architectural conditions (e.g. proportion of windows, construction method).

- This makes it clear that a strongly qualitative-focused evaluation using a functionality checklist does not meet individual circumstances and individual needs.

- The mere fact that a certain system with high-quality functionality is in place is not sufficient for an assessment in terms of the overarching goals of the SRI. In some cases, it must also be clarified whether or how this system can be operated beneficially in the respective building

# Outlook for the further stages of the national test phase on the SRI in Austria

- Moving from method comparison to method development (SRI Austria – AEE Intec, BOKU).
- Testing and validation of methods with data of more buildings
- Enforced exchange/consultation with Austrian stakeholders
- Austrian participation in projects granted by the LIFE-2021-CET-SMARTREADY calls:

SRI2Market

Acronym SRI2MARKET

## 2 - Participants

### List of participating organisations

| # | Participating Organisation Legal Name | Country | Role |
|---|---|---|---|
| 1 | INSTITUTE FOR EUROPEAN ENERGY AND CLIMATE POLICY STICHTING | NL | Coordinator |
| 2 | FEDERATIE VAN VERENIGINGEN VOOR VERWARMING EN LUCHTBEHANDELING IN EUROPA REHVA | BE | Partner |
| 3 | UNIVERSITY OF PIRAEUS RESEARCH CENTER | EL | Partner |
| 4 | HEBES INTELLIGENCE SINGLE MEMBER I.K.E. | EL | Partner |
| 5 | ADENE - AGENCIA PARA A ENERGIA | PT | Partner |
| 6 | AEE - INSTITUT FUR NACHHALTIGE TECHNOLOGIEN | AT | Partner |
| 7 | FUNDACION CENER | ES | Partner |
| 8 | ENERGETSKI INSTITUT HRVOJE POZAR | HR | Partner |
| 9 | ENERGEIAKO GRAFEIO KYPRIOU POLITON | CY | Partner |
| 10 | UNIVERSITAET FUER BODENKULTUR WIEN | AT | Partner |
| 11 | R2M SOLUTION | FR | Partner |
| 12 | CERTIFICACION ENERGETICA SL | ES | Partner |

easySRI

**Consortium Members**

| No | Partner | Country | Type |
|---|---|---|---|
| 1 | Centre for Research & Technology Hellas **[CERTH]** | Greece | Research |
| 2 | Negawatt PC **[Negawatt]** | Greece | SME |
| 3 | Frederick Research Center **[FRC]** | Cyprus | Research |
| 4 | Energy@Work Società Cooperativa a R.L. **[E@W]** | Italy | Non-profit |
| 5 | CETMA Technologies Design and Materials European Research Center **[CETMA]** | Italy | Research |
| 6 | SGS TECNOS S.A **[SGS]** | Spain | Industry |
| 7 | SERA global GmbH **[SERA]** | Austria | SME |
| 8 | Austrian Standards International **[ASI]** | Austria | Non-profit |

# Thank you for your attention!

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Schenkenstraße 4 | 1010 Wien | Austria



ÖSTERREICHISCHES INSTITUT FÜR BAUTECHNIK

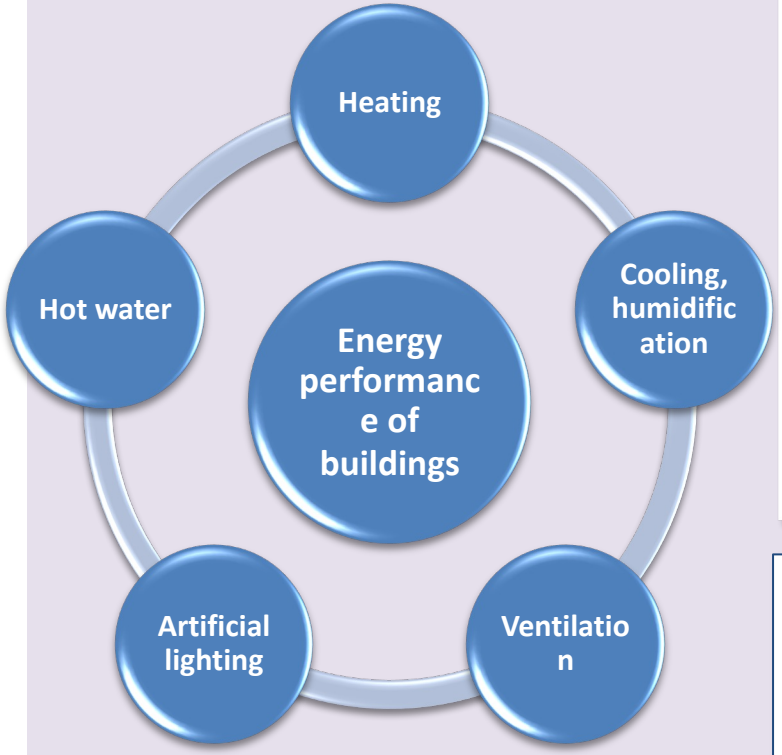
# SRI WG 1
# SRI TEST PHASE
# Czechia
# september 2022

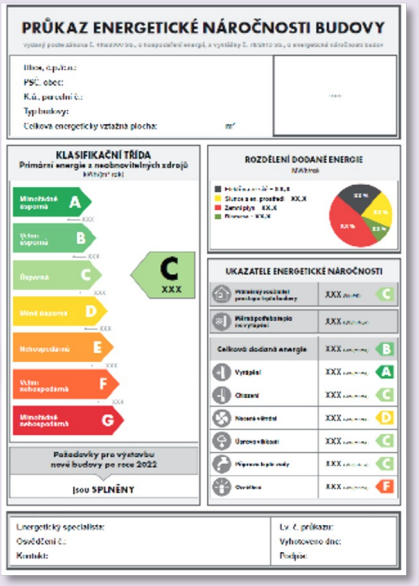
**prof. Ing. Karel Kabele, CSc.**
Czech Technical University in Prague
Faculty of Civil Engineering
Dept of Indoor Environmental and Building Services Engineering

FACULTY OF CIVIL ENGINEERING CTU IN PRAGUE

# ENERGY PERFORMANCE AND INDOOR ENVIRONMENT ASSESSMENT

## Energy performance

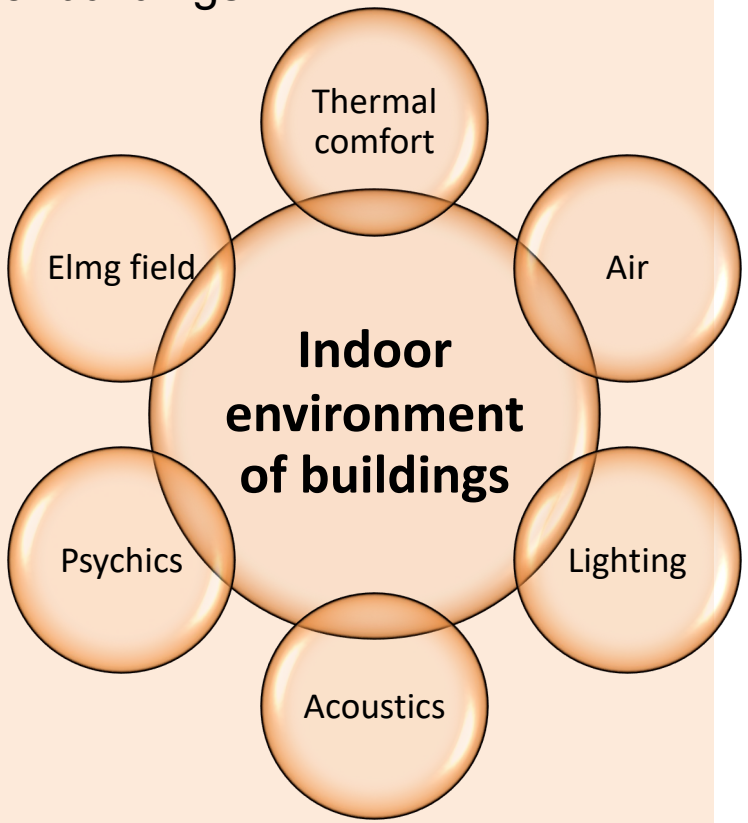



ENERGY AUDIT

## Indoor environment of buildings

?



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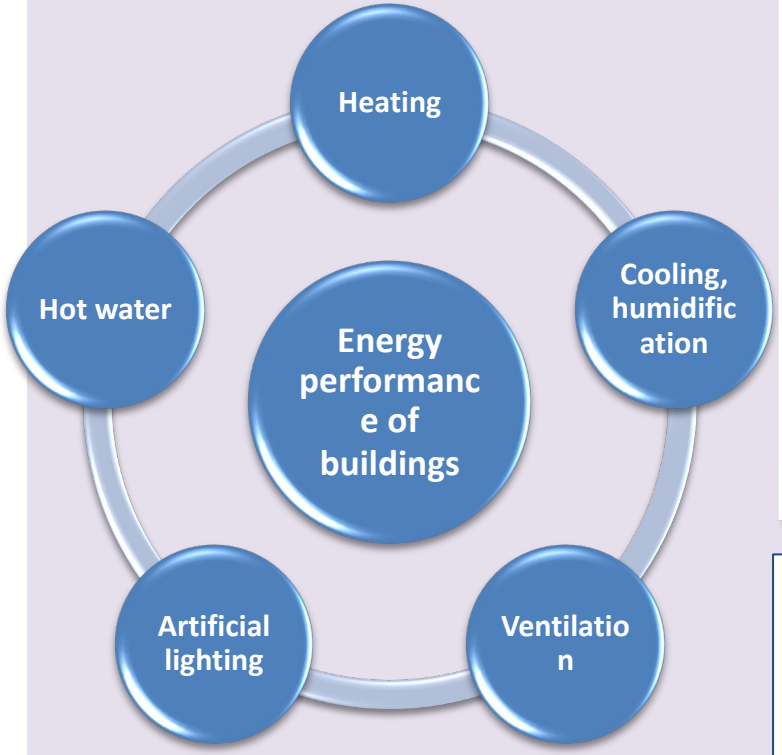


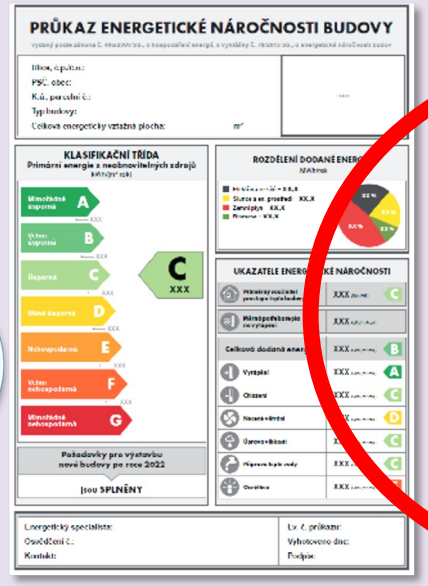


ENERGY AUDIT

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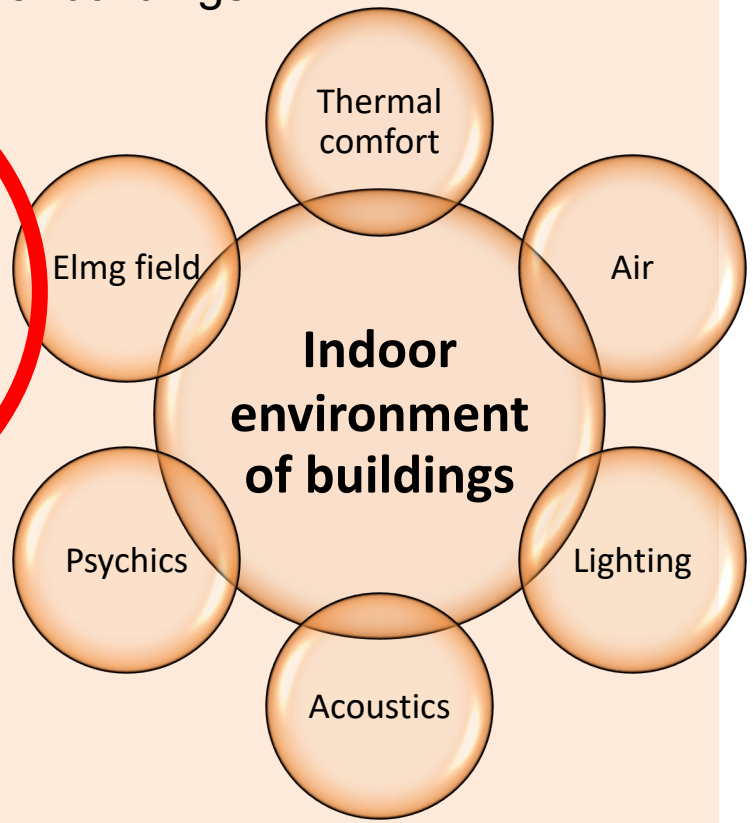

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# SMART READINESS INDICATOR (SRI)

**Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT COUNCIL on the energy performance of buildings (recast)**

## Smart Readiness Indicator SRI

Voluntary rating scheme to evaluate the capacity of buildings to **adapt the operation of buildings to the needs of the occupants and the grid and to improve the energy efficiency** and overal performance of buildings.

Testing is underway for the Czech Republic

*https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficien buildings/smart-readiness-indicator_en*

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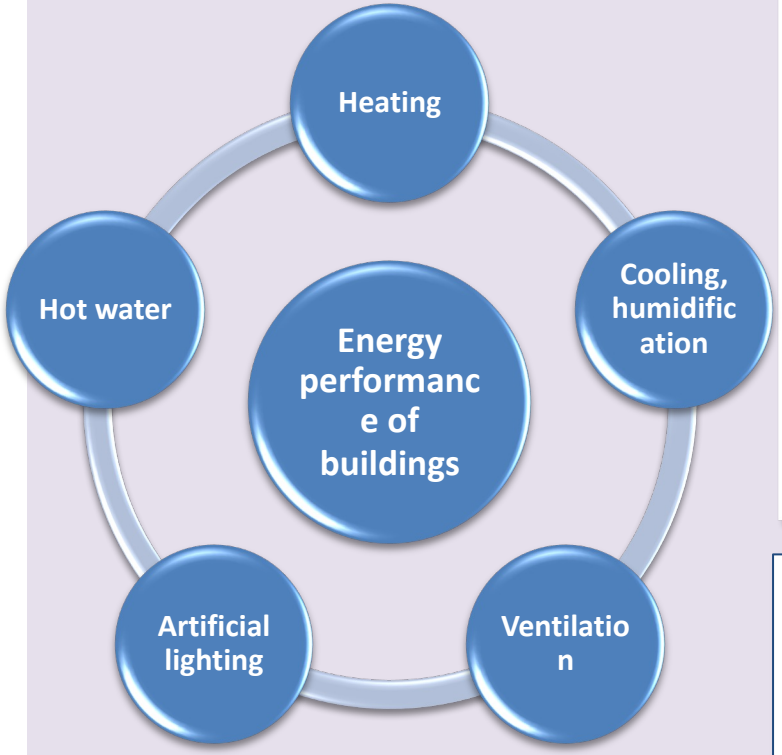
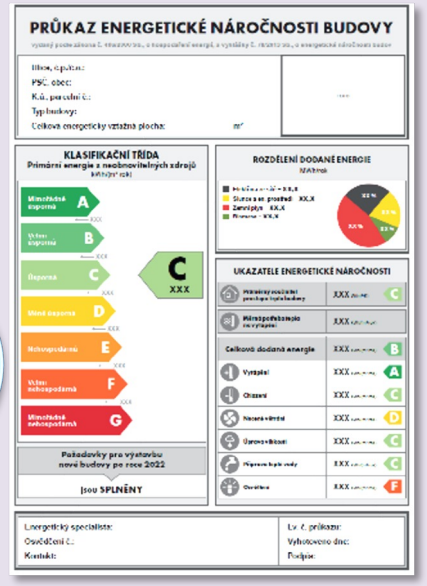
# ENERGY PERFORMANCE AND INDOOR ENVIRONMENT ASSESSMENT

## Energy performance



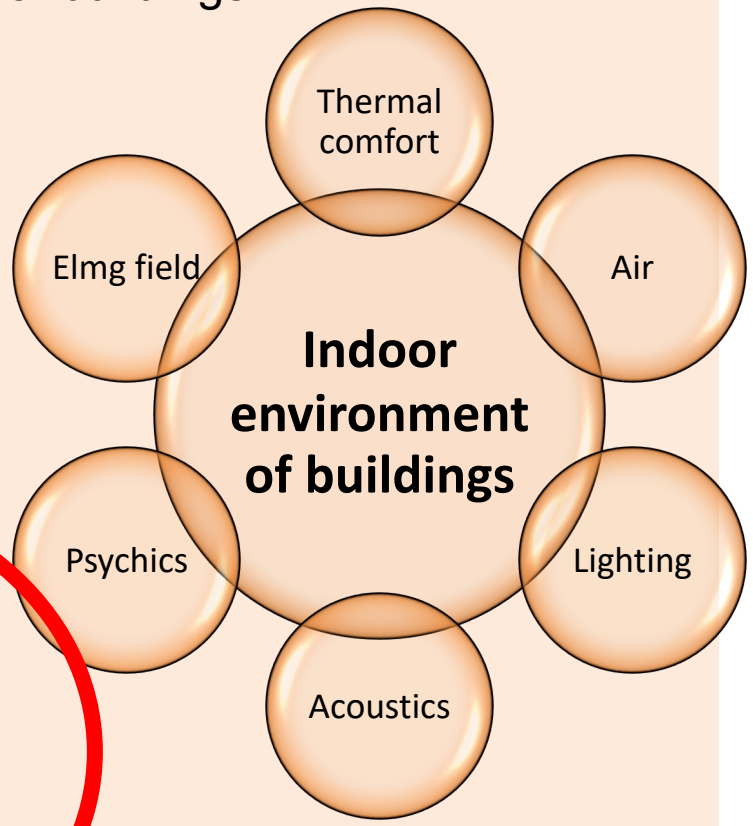

ENERGY AUDIT

## Indoor environment of buildings

SRI

ENVIRONMENTAL AUDIT

HAIEQ



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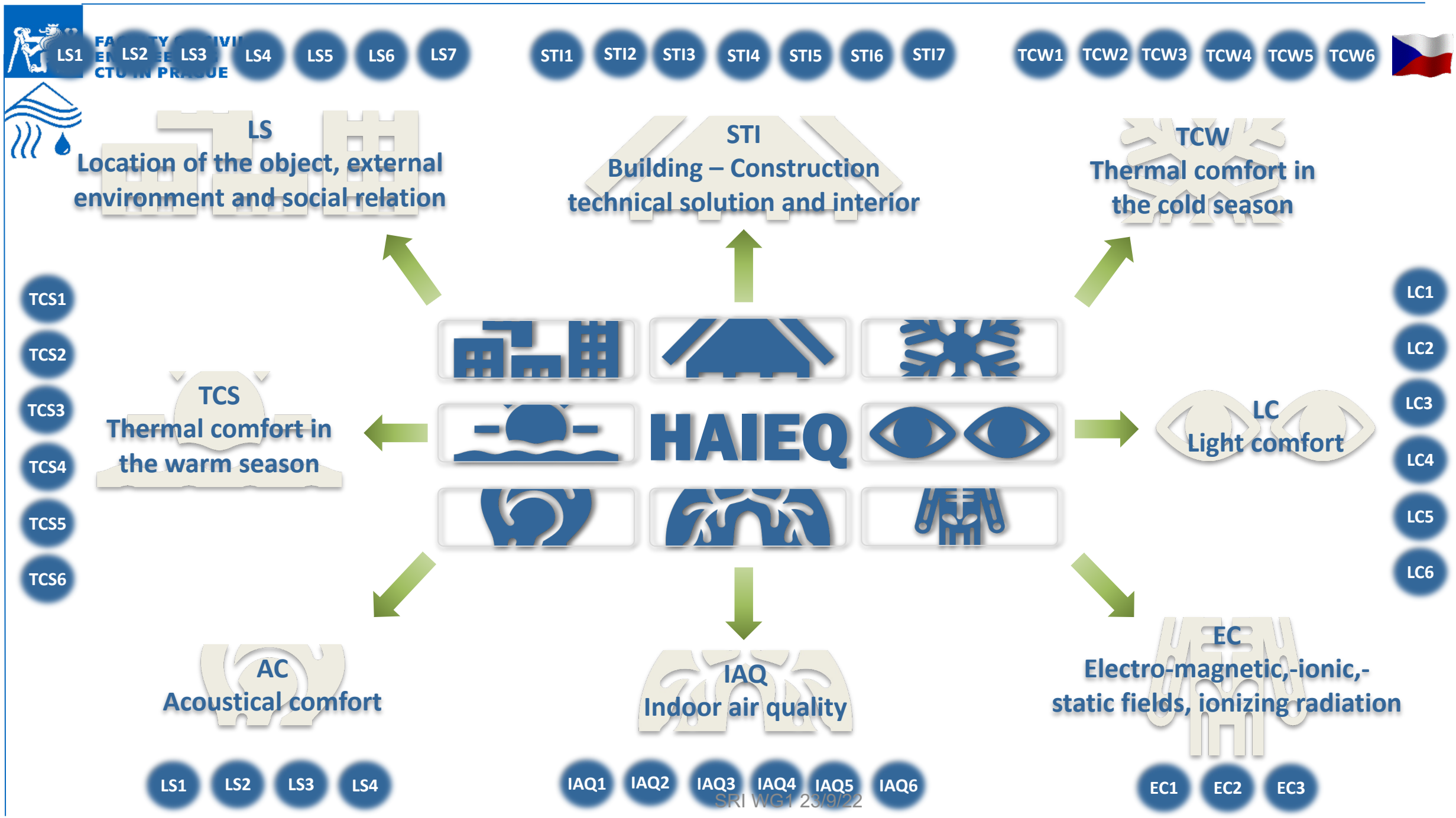
# ČVUT METHODOLOGY HAIEQ

## INDOOR ENVIRONMENTAL QUALITY AUDIT


LS1 LS2 LS3 LS4 LS5 LS6 LS7
STI1 STI2 STI3 STI4 STI5 STI6 STI7
TCW1 TCW2 TCW3 TCW4 TCW5 TCW6
LS
Location of the object, external environment and social relation
STI
Building – Construction technical solution and interior
TCW
Thermal comfort in the cold season
TCS1
TCS2
TCS3
TCS4
TCS5
TCS6
TCS
Thermal comfort in the warm season
HAIEQ
LC
Light comfort
LC1
LC2
LC3
LC4
LC5
LC6
AC
Acoustical comfort
IAQ
Indoor air quality
EC
Electro-magnetic,-ionic,-static fields, ionizing radiation
LS1 LS2 LS3 LS4
IAQ1 IAQ2 IAQ3 IAQ4 IAQ5 IAQ6
EC1 EC2 EC3
SRI WG1 23/9/22

LS1 LS2 LS3 LS4 LS5 LS6 LS7

**LS**
Location of the object, external environment and social relation

STI1 STI2 STI3 STI4 STI5 STI6 STI7

**STI**
Building – Construction technical solution and interior

TCW1 TCW2 TCW3 TCW4 TCW5 TCW6

**TCW**
Thermal comfort in the cold season

TCS1 TCS2 TCS3 TCS4 TCS5 TCS6

**TCW**
Thermal comfort in the warm season

| GRADE | MEANING |
|---|---|
| N | Not evaluated - e.g. lack of data, not relevant for the zone, other reasons (the reason must be stated) |
| 1 | No comments – without a draft measure, optimal condition, suitable solution |
| 2 | Proposed measure - Comments, shortcomings |
| 3 | Serious deficiency - failure to comply with legislation, emergency state, equipment malfunction, and, in the case of comments and serious deficiencies, their specification for comment. |

**LC**
Light comfort

LC1 LC2 LC3 LC4 LC5 LC6

**AC**
Acoustical comfort

LS1 LS2 LS3 LS4

**IAQ**
Indoor air quality

IAQ1 IAQ2 IAQ3 IAQ4 IAQ5 IAQ6

**EC**
Electro-magnetic,-ionic,-static fields, ionizing radiation

EC1 EC2 EC3

# Example of grading method

TCW1 TCW2 TCW3 TCW4 TCW5 TCW6

TCW
Thermal comfort in the cold season

| Criterion | | FM1 |
|---|---|---|
| TCW1 | Choice and operation of the **heating system** | 2 |
| TCW2 | The ability of the heating system **to adapt its operating mode** in response to the users' needs with due regard to user-friendliness, maintaining a healthy indoor environment – e.g. individual temperature control, user feedback – subjective environmental quality assessment | 3 |
| TCW3 | The ability of the heating system to **report energy usage** to the user | 2 |
| TCW4 | The ability of the heating system to **report the quality of the indoor environment** in terms of thermal comfort in cold to the user | 1 |
| TCW5 | **Summary** of TC assessment results for the cold season from the **measurement/simulation** (e.g. risk of overheating of the zone in cold due to heat gains, underheating, etc.) | 2 |
| TCW6 | Summary of TC assessment results for the cold season from the **questionnaire survey** (if performed) | 1 |
| TCW | **Average of non-zero values TCW1 to TCW6** | **1,833** |

LS1 LS2 LS3 LS4 LS5 LS6 LS7

STI1 STI2 STI3 STI4 STI5 STI6 STI7

TCW1 TCW2 TCW3 TCW4 TCW5 TCW6

**LS**
**Location of the object, external environment and social relation**

**1,28**

**STI**
**Building – Construction technical solution and interior**

**1,42**

**TCW**
**Thermal comfort in the cold season**

**1,83**

| Evaluation domain | | | Evaluation | Potential for improvement |
|---|---|---|---|---|
| | LS | Locality and place of the object in terms of the external environment and social | 1,280 | 0% |
| | STI | Building - construction and technical solution and interior of the evaluated zone | 1,420 | 21% |
| | TCW | Thermal comfort for the cold period | 1,830 ! | 42% |
| | TCS | Thermal comfort for the warm period | 1,200 | 10% |
| | IAQ | Indoor air quality | 2,000 ! | 50% |
| | LC | Light comfort | 1,500 | 25% |
| | AC | Acoustic comfort | 1,500 | 25% |
| | EC | Electro-magnetic, -ionic,- static fields, ionizing radiation | 1,000 | 0% |

TCS1 TCS2 TCS3 TCS4 TCS5 TCS6

**TCS**
**Thermal comfort in the warm season**

**1,2**

**LC**
**Light comfort**

**1,5**

LC1 LC2 LC3 LC4 LC5 LC6

**1,5**

**AC**
**Acoustical comfort**

LS1 LS2 LS3 LS4

**2,0**

**IAQ**
**Indoor air quality**

IAQ1 IAQ2 IAQ3 IAQ4 IAQ5 IAQ6

**1,0**

**EC**
**Electro-magnetic,-ionic,- static fields, ionizing radiation**

EC1 EC2 EC3

# Test case 1

Building 1 - family house Všenory

- Central Bohemia Region
- – Traditional house from the
- 19th century
- – Stone construction +
- extension made of aerated concrete
- – Reconstruction between 2002 and 2015
- – Electric heating (storage stove), charging at times of
- low tariff
- – Lighting on switches
- – Preparing DHW in an electric boiler

*Zdroj: www.mapy.cz*

# Test case 2

- Building 2 - apartment house Prague-Suchdol

– – Prefabricated apartment building
– – Construction in the 1980s – Reconstruction after 2000 – Gas boiler for heating and
– hot water
– – Hot water heating system
– with heating elements
– – Equithermal regulation
– – Hot water preparation -storage tanks with heating
– schedule
– – Regulation with error
– detection
– – Lighting on switches

*Zdroj: www.mapy.cz*

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# Test case 3

- Building 3 - Building A of the Faculty of Civil Engineering of the CTU in Prague

– 15-storey reinforced concrete skeleton
– – Construction in the 1970s – Reconstruction after 2010 – CZT as a heat source for
– heating and DHW preparation – Hot water heating system
– Equithermal regulation
– Part of the building with
– forced ventilation
– SW side with motorized exterior blinds
– Part of the building lighting according to the presence of people

*Zdroj: cs.wikipedia.org*

# Test case 4

- Building 4 - Family house Rýmařov
  - Moravian-Silesian Region
  - Low-energy wooden building
  - Fireplace for wood with heat exchanger + electric boiler
  - Hot water heating system
  - DHW is prepared in a tank
  - connected to the heating system + circuit with solar collectors + electric heating cartridge
  - All energy flows are measured, data is recorded
  - MaR system with central reporting

*Zdroj: Kabele, Urban: Grant no: te02000077 Smart Regions – buildings and settlements information modelling, technology and infrastructure for sustainable development*

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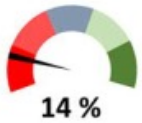
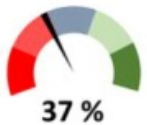
# Případová studie – shrnutí vstupů

| | Building | BUILDING 1 | BUILDING 2 | BUILDING 3 | BUILDING 4 |
|---|---|---|---|---|---|
| BASIC INFORMATION | Type of building | Residential | Residential | Other | Residential |
| | Use of the building | Family house | Residential house | Educational | Family house |
| | Floor area ($m^2$ ) | <200 | >2,000 | >25,000 | <200 |
| | Year of construction | <1960 | 1960-1990 | 1960-1990 | >2010 |
| EXHIBIT | Heat sharing | Non-thermal | Hot water (bodies) | Hot water (bodies) | Hot water (bodies) |
| | Source type | Decentral | Central in the building | CZT | Decentral |
| | Heat accumulation | Yes | No | No | No |
| | Multiple heat sources | No | No | No | Yes |
| HOT WATER PREPARATION | Source : | Electric | Non-Electric | Non-Electric | Combination |
| | Accumulation | Yes | Yes | Yes | Yes |
| | Solar collectors | No | No | No | Yes |
| FORCED WINDING | Type of system | No | No | Controlled (10% of the building) | From |
| DYNAMIC ENVELOPE | Movable shielding | No | No | Yes | No |

# Celkové SRI, jednotlivá kritéria

| BUILDING | BUILDING 1 | BUILDING 2 | BUILDING 3 | BUILDING 4 |
|---|---|---|---|---|
| OVERALL INDICATOR | **14%** | **28%** | **35%** | **37%** |
| ENERGY SAVINGS | 17% | 31% | 43% | 52% |
| FLEXIBILITY TO THE DISTRIBUTION NETWORK AND ENERGY STORAGE | 31% | 35% | 36% | 12% |
| COMFORT OF USE | 9% | 34% | 39% | 51% |
| ENVIRONMENTAL QUALITY | 5% | 29% | 30% | 39% |
| HEALTH PROTECTION | 0% | 100% | 31% | 100% |
| OPERATION, MAINTENANCE AND FAULT PREDICTION | 0% | 12% | 25% | 32% |
| INFORMATION ABOUT THE BUILDING VIS-À-VIS USERS | 0% | 13% | 18% | 31% |





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# Hodnocení jednotlivých oblastí

| BUILDING | BUILDING 1 | BUILDING 2 | BUILDING 3 | BUILDING 4 |
|---|---|---|---|---|
| HEATING SYSTEM | 26% | 36% | 55% | 39% |
| HOT WATER PREPARATION | 29% | 12% | 34% | 57% |
| COOLING SYSTEM | - | - | - | - |
| DIRECTED WINDING | - | - | 4% | - |
| LIGHTING | 0% | 0% | 10% | 0% |
| DYNAMIC BUILDING ENVELOPE | - | - | 38% | - |
| ELECTRICITY: RENEWABLE ENERGY AND STORAGE | - | - | - | - |
| CHARGING ELECTRIC CARS | - | - | - | - |
| MEASUREMENT AND CONTROL | 0% | 25% | 27% | 32% |

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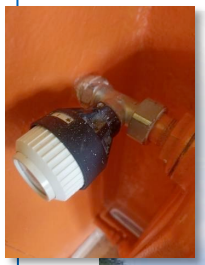
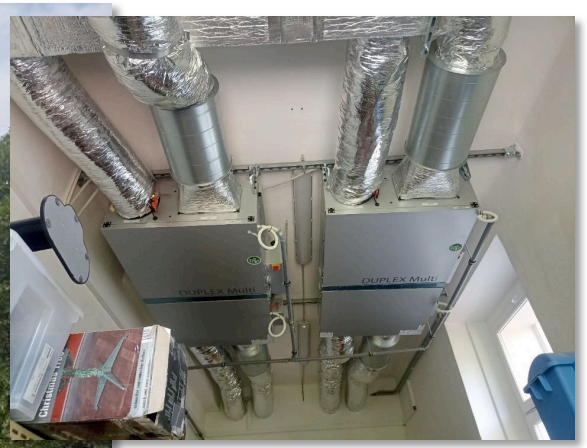
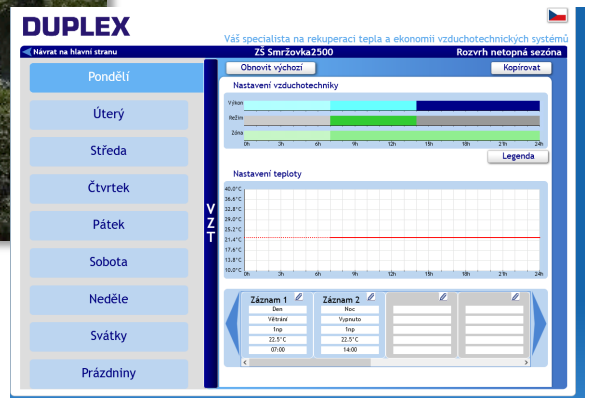
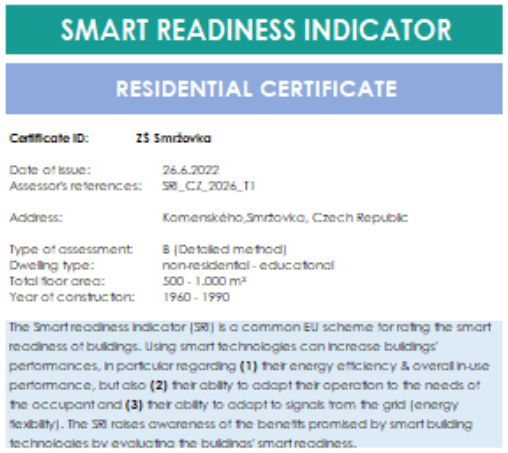
# SRI Testing objects

- S1 Refurbished primary school North Bohemia







SMART READINESS INDICATOR

RESIDENTIAL CERTIFICATE

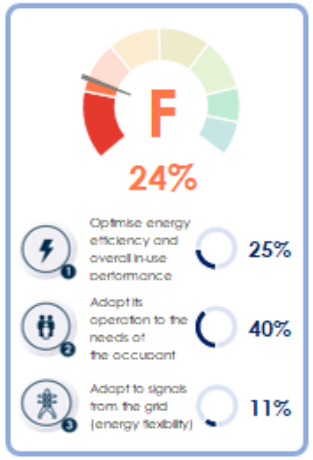
Certificate ID: ZŠ Smržovka

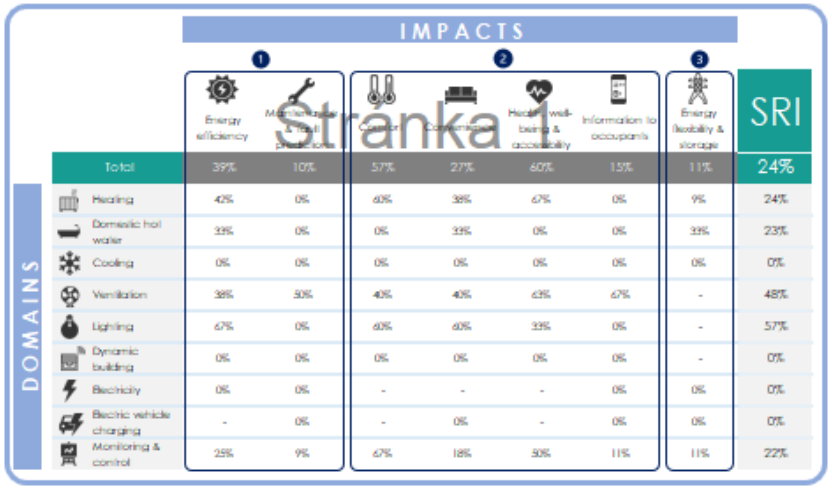
Date of issue: 26.6.2022
Assessor's references: SRI_CZ_2026_11

Address: Komenského,Smržovka, Czech Republic

Type of assessment: B (Detailed method)
Dwelling type: non-residential - educational
Total floor area: 500 - 1.000 m²
Year of construction: 1960 - 1990

The Smart readiness indicator (SRI) is a common EU scheme for rating the smart readiness of buildings. Using smart technologies can increase buildings' performances, in particular regarding (1) their energy efficiency & overall in-use performance, but also (2) their ability to adapt their operation to the needs of the occupant and (3) their ability to adapt to signals from the grid (energy flexibility). The SRI raises awareness of the benefits promised by smart building technologies by evaluating the buildings' smart readiness.



IMPACTS

| DOMAINS | 1 Energy efficiency | 1 Maintenance & fault prediction | 2 Comfort | 2 Convenience | 2 Health, well-being & accessibility | 2 Information to occupants | 3 Energy flexibility & storage | SRI |
|---|---|---|---|---|---|---|---|---|
| Total | 39% | 10% | 57% | 27% | 60% | 15% | 11% | 24% |
| Heating | 42% | 0% | 60% | 38% | 67% | 0% | 9% | 24% |
| Domestic hot water | 33% | 0% | 0% | 33% | 0% | 0% | 33% | 23% |
| Cooling | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Ventilation | 38% | 50% | 40% | 40% | 63% | 67% | - | 48% |
| Lighting | 67% | 0% | 60% | 60% | 33% | 0% | - | 57% |
| Dynamic building | 0% | 0% | 0% | 0% | 0% | 0% | - | 0% |
| Electricity | 0% | 0% | - | - | - | 0% | 0% | 0% |
| Electric vehicle charging | - | 0% | - | 0% | - | 0% | 0% | 0% |
| Monitoring & control | 25% | 9% | 67% | 18% | 50% | 11% | 11% | 22% |

Stránka 1

FACULTY OF CIVIL ENGINEERING CTU IN PRAGUE

# SRI Testing objects

- S1 Refurbished primary school North Bohemia

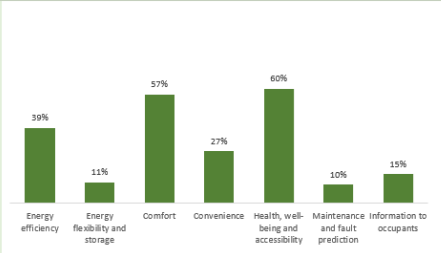
| | |
|---|---|
| Key functionality 1 - building | 25% |
| Key functionality 2 - user | 40% |
| Key functionality 3 - grid | 11% |

| | Key functionality 1 - building | Key functionality 2 - user | Key functionality 3 - grid |
|---|---|---|---|
| Heating | 21% | 41% | 9% |
| Domestic hot water | 17% | 17% | 33% |
| Cooling | 0% | 0% | 0% |
| Ventilation | 44% | 52% | 0% |
| Lighting | 67% | 51% | 0% |
| Dynamic building envelope | 0% | 0% | 0% |
| Electricity | 0% | 0% | 0% |
| Electric vehicle charging | 0% | 0% | 0% |
| Monitoring and control | 17% | 36% | 11% |

**TOTAL SRI SCORE** 24% **SRI CLASS** F

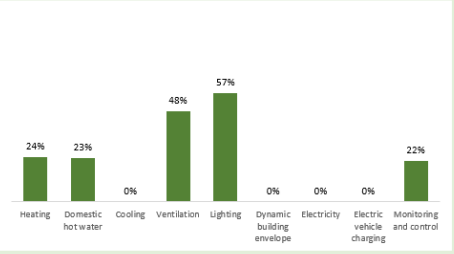
**IMPACT SCORES**

| | |
|---|---|
| Energy efficiency | 39% |
| Energy flexibility and storage | 11% |
| Comfort | 57% |
| Convenience | 27% |
| Health, well-being and accessibility | 60% |
| Maintenance and fault prediction | 10% |
| Information to occupants | 15% |




**DOMAIN SCORES**

| | |
|---|---|
| Heating | 24% |
| Domestic hot water | 23% |
| Cooling | 0% |
| Ventilation | 48% |
| Lighting | 57% |
| Dynamic building envelope | 0% |
| Electricity | 0% |
| Electric vehicle charging | 0% |
| Monitoring and control | 22% |




**DETAILED SCORES**

| | Energy efficiency | Energy flexibility and storage | Comfort | Convenience | Health, well-being and accessibility | Maintenance and fault prediction | Information to occupants |
|---|---|---|---|---|---|---|---|
| Heating | 42% | 9% | 60% | 38% | 67% | 0% | 0% |
| Domestic hot water | 33% | 33% | 0% | 33% | 0% | 0% | 0% |
| Cooling | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Ventilation | 38% | 0% | 40% | 40% | 63% | 50% | 67% |
| Lighting | 67% | 0% | 60% | 60% | 33% | 0% | 0% |
| Dynamic building envelope | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Electricity | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Electric vehicle charging | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Monitoring and control | 25% | 11% | 67% | 18% | 50% | 9% | 11% |

**SMART READINESS INDICATOR**

**RESIDENTIAL CERTIFICATE**

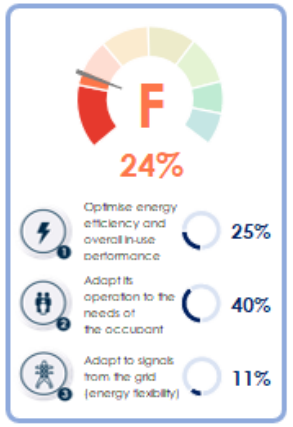
**Certificate ID:** **Z5 Smržovka**

Date of issue: 26.6.2022
Assessor's references: SRI_CZ_2026_T1

Address: Komenského,Smržovka, Czech Republic

Type of assessment: B (Detailed method)
Dwelling type: non-residential - educational
Total floor area: 500 - 1.000 m²
Year of construction: 1960 - 1990

The Smart readiness indicator (SRI) is a common EU scheme for rating the smart readiness of buildings. Using smart technologies can increase buildings' performances, in particular regarding **(1)** their energy efficiency & overall in-use performance, but also **(2)** their ability to adapt their operation to the needs of the occupant and **(3)** their ability to adapt to signals from the grid (energy flexibility). The SRI raises awareness of the benefits promised by smart building technologies by evaluating the buildings' smart readiness.




**IMPACTS**

| DOMAINS | Energy efficiency (1) | Maintenance and fault prediction (1) | Comfort (2) | Convenience (2) | Health, well-being & accessibility (2) | Information to occupants (2) | Energy flexibility & storage (3) | SRI |
|---|---|---|---|---|---|---|---|---|
| Total | 39% | 10% | 57% | 27% | 60% | 15% | 11% | 24% |
| Heating | 42% | 0% | 60% | 38% | 67% | 0% | 9% | 24% |
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| Dynamic building | 0% | 0% | 0% | 0% | 0% | 0% | - | 0% |
| Electricity | 0% | 0% | - | - | - | 0% | 0% | 0% |
| Electric vehicle charging | - | 0% | - | 0% | - | 0% | 0% | 0% |
| Monitoring & control | 25% | 9% | 67% | 18% | 50% | 11% | 11% | 22% |

Stránka 1

# Objects in progress

- 2 family houses
- Experimental high-tech object Prvok
- Office Building of CVUT
- Residential project Branik
- Residential project Karlin

# Thank you for your attention

Karel Kabele

Danish Energy Agency

# Experience with the Smart Readiness Indicator in DK

- Allan Hansen, Danish Energy Agency

# Test phase approach in DK

- What is the focus of the test phase?
  - The test has three focus areas: specific SRI calculations on Danish buildings, input and recommendations for the method and involvement of stakeholders through workshops.
- Who is organizing the test phase?
  - The DEA has contracted with a research institute.
- What kind of test phase?
  - Research project
- What is the time frame of the test phase?
  - Start Dec. 2021 and finish mid-2022.

# Scope of tests

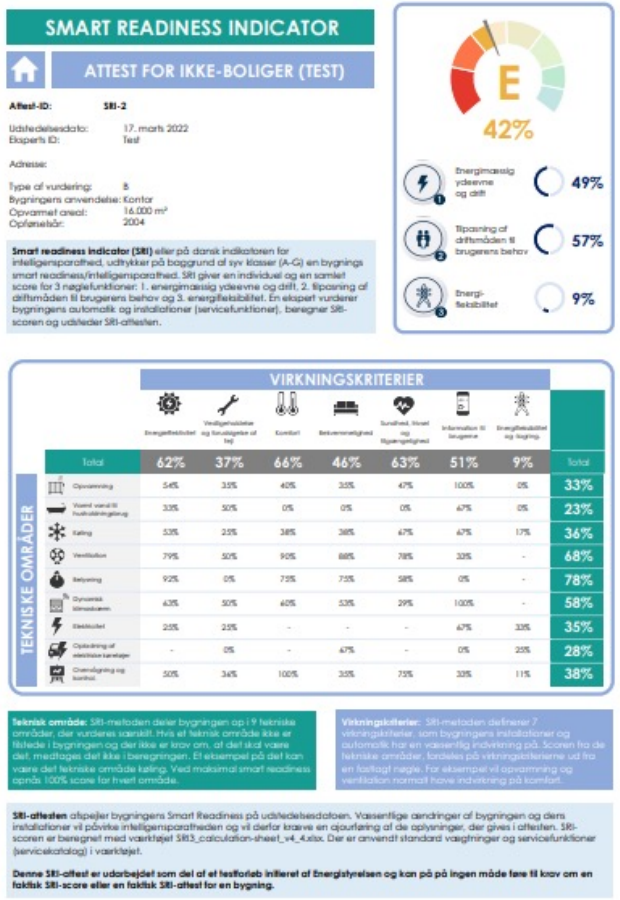
- SRI calculation, based on the developed method, in practice of a number of buildings.
- Distribution of buildings (Priority to reach different buildings)

| Year of construction | Heat supply | Residential | Apartment buildings | Offices | Education and institutions | shopping center |
|---|---|---|---|---|---|---|
| <1960 | Heatpump | 5 | 3 | 4 | 3 | 1 |
| 1960-1990 | | | | | | |
| 1990-2010 | Other | | | | | |
| >2010 (=New) | Heatpump | 2 | 2 | 3 | 2 | |
| | Other | 2 | | | | |
| **Total** | | **9** | **5** | **7** | **5** | **1** |
| | | **27** | | | | |

# Communication of the project

**Efforts for commitment:**

- Ongoing results and material are communicated via dedicated website http://sri.teknologisk.dk/ (during the project).
- Help from the SRI support team to develop SRI certificate (as a supplement to the excel spreadsheet), which has been valuable in communication with building owners and others.
- Workshop (midway through the project) as part of the project specifications to involve stakeholders.




http://sri.teknologisk.dk/media/1027/sri_case_kontorer.pdf

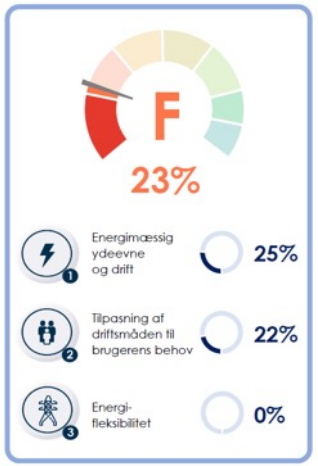
# Initial findings

**Results:**

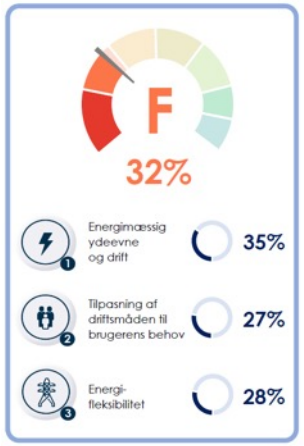
- For all building types, it has been shown that the SRI score is roughly the same regardless of whether it is an older or a newer building.

- All the buildings that have been investigated get a rather poor score (are in the lowest classes: 35-50 % (E), 20-35 % (F) and < 20 % (G)), which in many cases is in contrasts with the score that appears on the EPC - it seems incomprehensible to the building owners.

- It has been shown that it takes a lot to increase the SRI score. The buildings generally have difficulty achieving points on the key functionalities of user needs and energy flexibility.




Older single-family house




Newly built single-family house

# Initial findings

**Some considerations (expressed by our project partner):**

- When registering the building, doubts may arise about the difference between technical equipment in the building, and the building owner's ability to purchase "intelligent" services, eg hardware and software (cloud-based) that is continually being developed and updated.

- In interviews with building owners, there is a wish for recommendations to improve the SRI score, but it is considered that they may require increased competencies (compared to the required level of registration).

- The SRI scheme provides a different kind of information about buildings than other known schemes. It is particularly the detailed overview of the management and control principles that appear in the service catalogue that are new.

# Thank you

- Allan Hansen, ahe@ens.dk

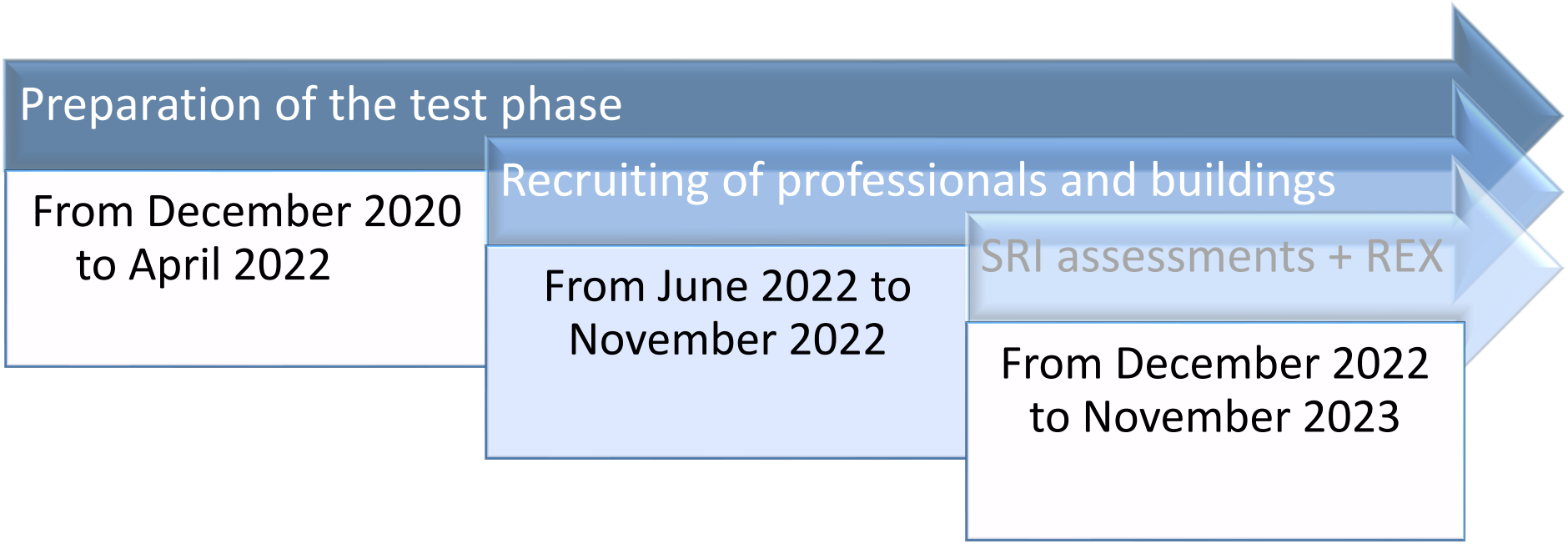
Danish Energy Agency

# FRANCE

Ministry for Housing (A. Walgraffe)

Cerema (N. Cabassud)

# Implementation of the SRI test phase



# Implementation of the SRI test phase

French approach

- INVOLVING AUDIT PROFESSIONALS
- INVOLVING BUILDING OWNERS
- MAKE A FEW ADJUSTMENTS ON THE CALCULATION METHOD

# Implementation of the SRI test phase

- INVOLVING ENERGY AUDIT PROFESSIONALS

⇒All profiles mentioned in the implementing act are eligible for the test phase. The prerequisite is to justify basic qualifications such as those described in the article 3 of the IA.

⇒Specific training in French for the calculation method and guide for the use of the calculation tool;

⇒The professionals make an application on line, fill in a template and join the supporting documents. Till 1st November 2022.

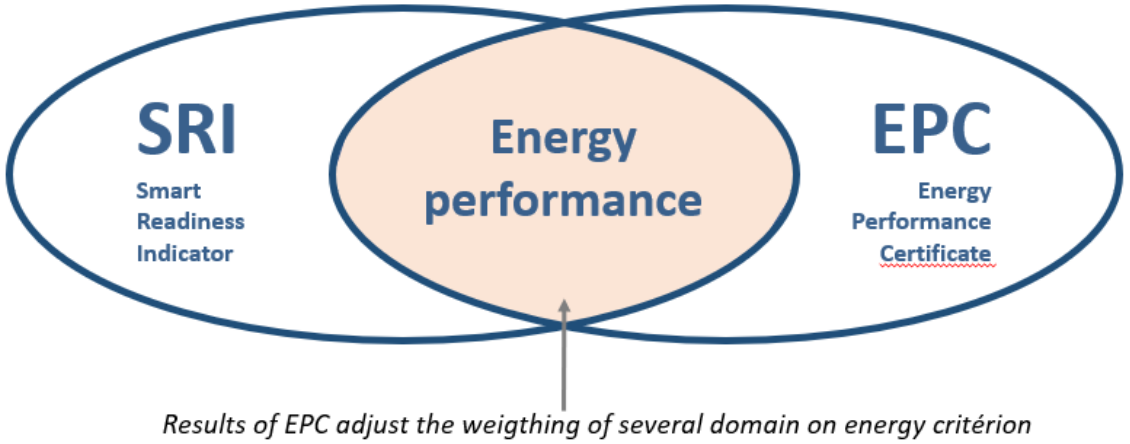
# Implementation of the SRI test phase

- INVOLVING BUILDING OWNERS

⇒ Get a large sample of building types ;

⇒ Discussion with a few owners, interested in assessing their buildings. We continue our communication round;

# Implementation of the SRI test phase




- MAKE A FEW ADJUSTMENTS ON THE CALCULATION METHOD

⇒Synergy with the French EPC, 2 aspects:

- on Residential buildings only: use EPC results to adapt the SRI methodologies (adjust a part of weighting matrix to take into accompt « real » context of the building)
- on all buildings: rationalization of time and costs by favoring the realization of the 2 evaluations at the same time (same assessor, energy criterion in common and one travel to the site for 2 assessments)

# Implementation of the SRI test phase

- QUESTIONING

⇒Interest or involving of the economic operators in the current context of national and European renovation massification (speeding up)?

=> Effective cost of a complete SRI assessment, sustainability for the economic operators or for the owners?

# Implementation of the SRI test phase

- RECRUITING PHASE

⇒Launching of the call of interest, extended to the 1st November;

⇒Increasing the information and means of communication.

## Currently: assessors recruitment

| Number | Initial qualification | Action aera | Training completed? | Training score (survey) | Prospecting building |
|---|---|---|---|---|---|
| 1 | Diagnostiqueur PEB | Auvergne-Rhône-Alpes | Oui | ≥ 15/20 | Yes |
| 2 | Diagnostiqueur PEB | Auvergne-Rhône-Alpes | Oui | ≥ 15/20 | Yes |
| 3 | Diagnostiqueur PEB | Auvergne-Rhône-Alpes | Oui | ≥ 15/20 | Yes |
| 4 | Diagnostiqueur PEB | France entière | Oui | ≥ 15/20 | No |
| 5 | Diagnostiqueur PEB | France entière | Oui | ≥ 15/20 | No |
| *6* | *Auditeur Energétique* | *Auvergne-Rhône-Alpes* | *In progress* | *In progress* | *Yes* |
| *7* | *Diagnostiqueur PEB* | *Bourgogne-Franche-Comté* | *In progress* | *In progress* | *Yes* |
| *8* | *Inspecteurs "systemes CVC" certifiés* | *Bretagne* | *In progress* | *In progress* | *Yes* |

# SRI-test phase in Finland

Jaakko Ketomäki, Motiva Ltd

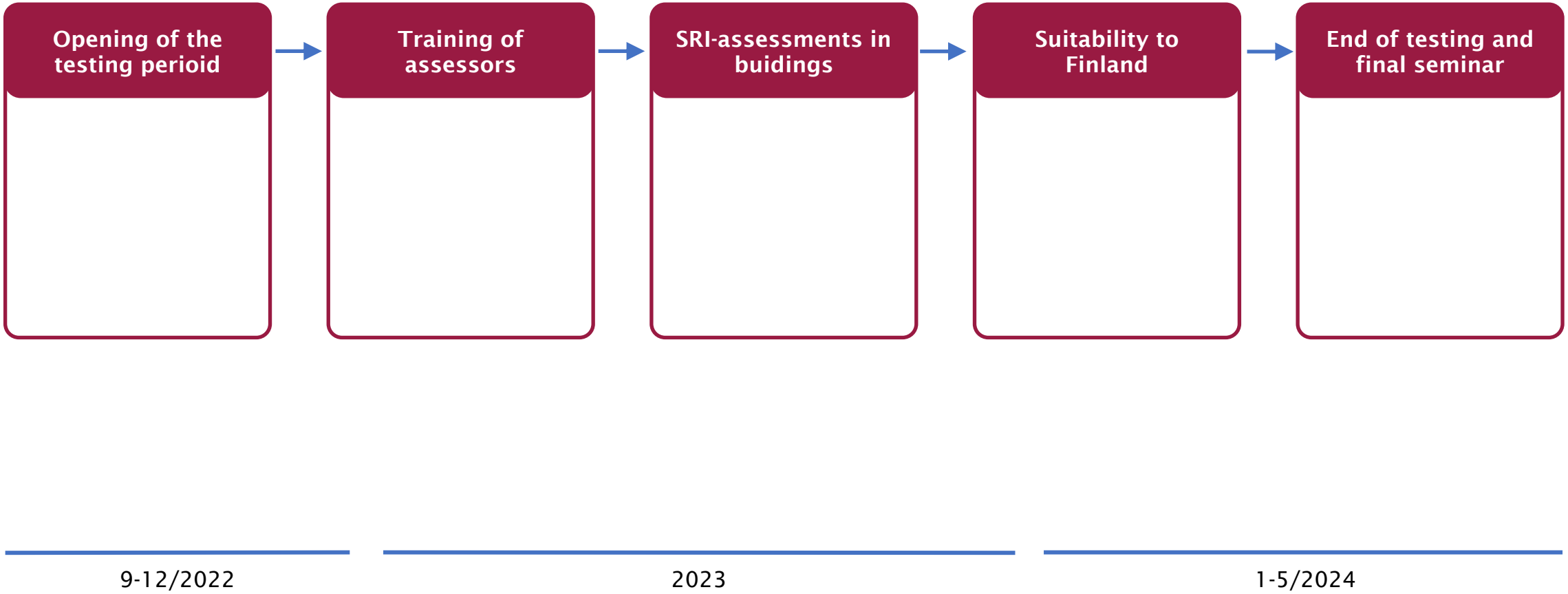
Motiva

# SRI-testing in Finland is…

- …funded by Finnish Ministry of the Environment
- **Pekka Kalliomäki**, Senior technical adviser

- …carried by motiva Ltd
- **Jaakko Ketomäki** (project manager) + colleagues

# Plan for SRI-testing in Finland



# Plan for SRI-testing in Finland

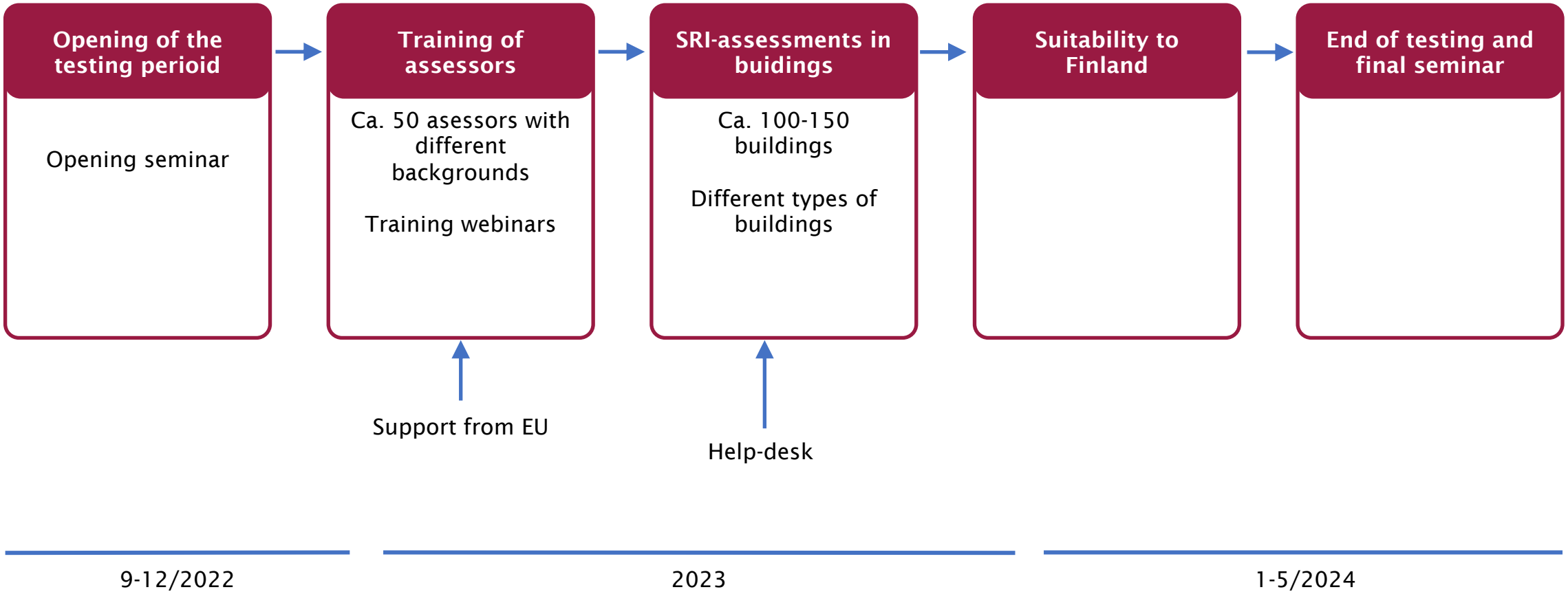
| Opening of the testing perioid | Training of assessors | SRI-assessments in buidings | Suitability to Finland | End of testing and final seminar |
|---|---|---|---|---|
| Opening seminar | Ca. 30-50 assessors with different backgrounds<br><br>Training webinars | | | |

9-12/2022 | 2023 | 1-5/2024

# Training

- 1,5 day webinar and 0,5 day workshop after first assessments
- Goal is 30…50 assessors
  - Authors of EPC's, professional at area of building services etc
  - Using e.g. Motiva's networks
- Well planned and targeted communication!
- Support from EU

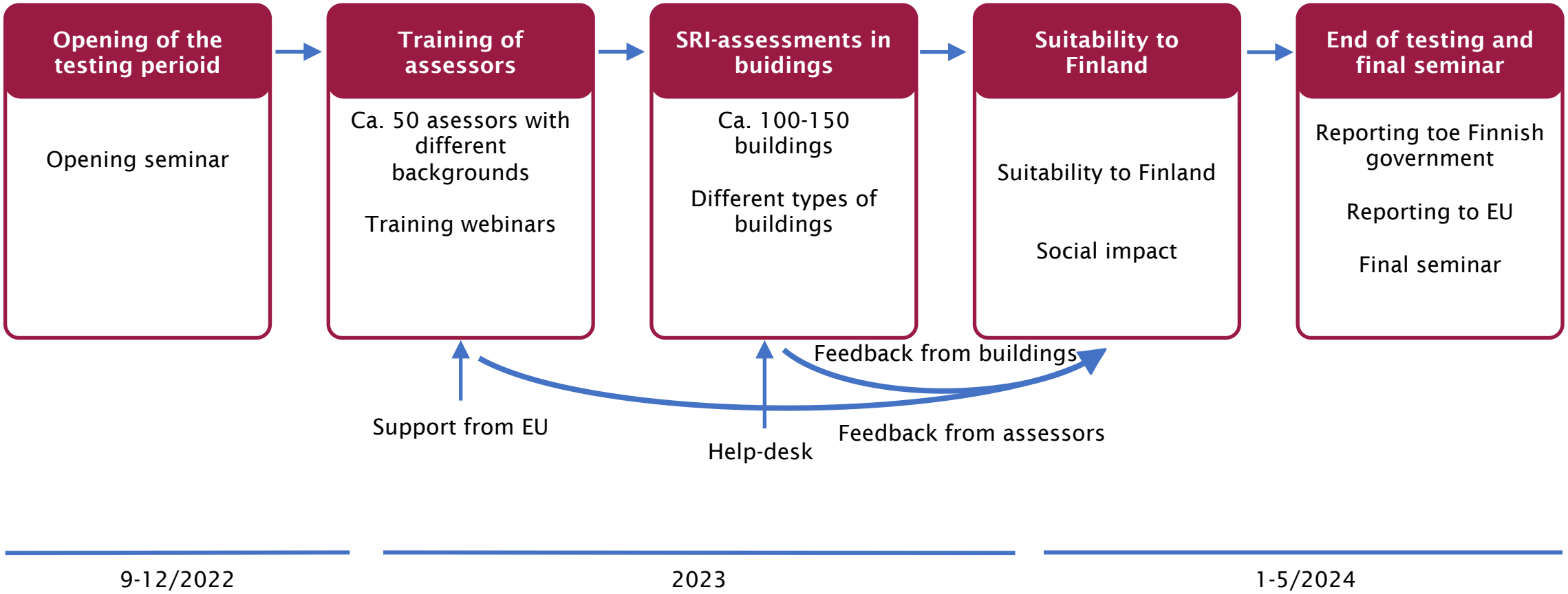
# Plan for SRI-testing in Finland



# SRI-assessments

- 100-150 buildings
- Different building types
- Result of pre-study of SRI-testing was, that building owners will have ”almost a pleasure” to give their building under evaluation
- Three evaluation are included to the assessor training.
  - Risk is, that work load is too large
  - Interviews in pre-study indicated, that training + three assessment would be acceptable

# Plan for SRI-testing in Finland



Motiva

# Thank you!

@MotivaOy

www.motiva.fi

# Discussion about the disclosure of WG1 outcomes to the SRI platform

# Disclosure of WG1 outcomes to the SRI platform

## WG1 outcomes

Experience feedback from the test phases

Other topics discussed among MS

## 4 levels of disclosure

EC & SRI support team

Member States

Other Working Groups of the SRI platform

SRI platform plenary (public)*

**Next plenary meeting: 23 November*

# Disclosure of WG1 outcomes to the SRI platform

## 4 levels of disclosure

According to the terms and conditions of the SRI assessment package: statistical information on the testing phase: number of assessments carried out, number of assessors, type of buildings, location of the buildings, etc.
→ **This will be collected soon by the SRI support team**

EC & SRI support team

The purpose of the WG

Member States

**WG2** *Maintenance & potential extension of the SRI calculation methodology* and **WG3** *SRI value proposition and supporting measures* are very interested in WG1 outcomes

Other Working Groups of the SRI platform

SRI platform plenary (public)*

Stakeholders interested in the SRI are very interested by the outcomes of Member States' test phase

**Next plenary meeting: 23 November*

# Identification of topics for discussion for the next WG1 meeting

# Next topics for discussion

- Next WG1 meeting proposed in January, after the kick-off of the LIFE projects
- Candidate topics for discussion:
  - 
  - 
  - 
  - 
  - 
  - 
  - 

# Thanks for your attention!

Contact: support@smartreadinessindicator.eu

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

#SmartReadinessIndicator

WG1 Secretariat via Sophie Dourlens-Quaranta at sophie.dourlens@r2msolution.com