

# Smart Readiness Indicator certification pathways and EPC systems



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The current recast of the EPBD directive reinforces the role of a common EU scheme to classify the readiness of buildings for smart technologies: the smart readiness indicator (SRI). This article explores SRI certification pathways and its synergies with Energy Performance Certification (EPC) systems, developed within the SRI2MARKET LIFE project.

**Keywords:** Smart Readiness Indicator, Energy Performance of Buildings Directive, building performance certification, Smart Buildings

## The Smart Readiness Indicator (SRI) and the new EPBD

### *SRI2MARKET - Paving the way for the adoption of the SRI into national regulation and market*

There are several ongoing and past European (EU) funded projects working on the development of the SRI methodology, its implementation at the policy level, creating new features and tools related to the SRI as part of the LIFE Clean Energy Transition program [1]. The SRI2MARKET is one such project and aims at supporting six targeted Member States (MS): Austria, Croatia, Cyprus, France, Portugal, and Spain, in introducing the SRI into their national regulation. Two tools already developed by the project should be highlighted and are freely available by signing up at <https://learning.sri2market.eu>. These include an e-learning course on the SRI and an SRI assessment tool. Both tools are available in English, German, Spanish, French, Croatian, Portuguese, and Greek.

Within the SRI2MARKET project, an assessment is being made on the possible certification pathways in the targeted countries. Preliminary results of this assessment are presented in this article with detailed

analysis and final output to be published early 2025. The purpose of this assessment is to evaluate alternative implementation paths for SRI certification and the costs and benefits from introducing combined EPC/SRI assessments and alternative options regarding the way SRI certificates could be issued.

## EPC and SRI certification

### *EPC certification processes in targeted countries*

Even though all MS follow the framework defined within the EPBD and have common features such as the trigger points for issuing EPC (e.g., selling, renting, new buildings and major renovations) and the use of Energy Performance of Buildings standards as reference, there is a myriad of different approaches in terms of calculation methods, energy performance classes, experts' qualification, training and inspections procedures, management structures and certificate design options. These different approaches are visible in the layouts for EPC's as depicted in **Figure 1**.

This quite different landscape implies that the SRI certification pathways and possible integration with the EPC should be carefully evaluated per country and there is no one-size-fits-all solution.

### *SRI certificates – EU regulatory framework*

Under the SRI delegated and implementing acts (EU) 2020/2156 [2] and (EU) 2020/2155 [3], there are already some provisions on the process and contents of SRI certification. The SRI certificate must be issued by a qualified expert, has a maximum validity of 10 years but should be renewed when there are significant changes in the building, and it can be coupled with EPC certification, the inspection of heating, air-conditioning and combined heating or air-conditioning and ventilation systems or the energy audits scheme. An independent control system must be set up and, if coupled with one of the mentioned systems/schemes, it can rely on the already existing control system. The certificate itself must include information such as a unique ID, date of issuing and expiry, relation to the EPC and energy performance class, general information on the building, smart readiness class and scores (in each of the three key functionalities and per impact criterion). Optionally, it

can include the total smart readiness score and for each technical domain and impact criterion, recommendations for SRI upgrades and additional information on assumptions for calculation, available information on interoperability, cybersecurity of systems and data protection and connectivity.

The EU SRI regulation foresees seven labelling classes related to smart readiness scores as follows: 90–100%; 80–90%; 65–80%; 50–65%; 35–50%; 20–35%; <20%. It is up to the MS to define if they want to assign these seven classes to specific naming conventions.

The EPBD recast also defines a template for EPC which has related information with the SRI such as the mandatory information on whether the building has a capacity to react to external signals and adjust the energy consumption and, optionally, a yes/no indication if an SRI assessment has been performed for the building and the SRI value.

**SRI certificates design**

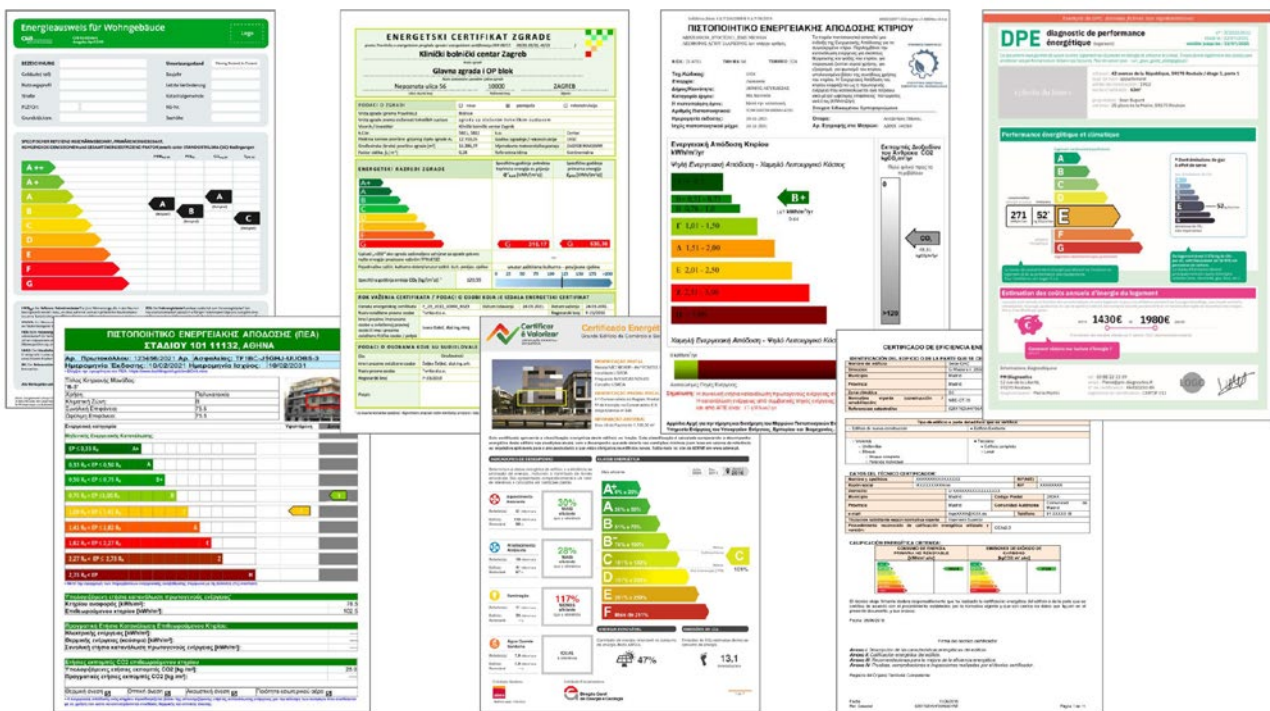
In 2020, a European Commission study [4] evaluated the SRI regulatory framework, but also the format and the SRI certificate design. Using consumer focus groups, it concluded that 1) a blend of physical and virtual certificate/platform would add most value (a one-page certificate with a QR code for additional detail could serve the purpose), 2) the scores disaggregation

should be presented by domain and impact criterion, 3) a common EU graphic layout could be used as a basis and 4) there were no obstacles to EPC integration or other building rating, labelling or certification schemes. Some countries have also conducted test phases and produced their own SRI certificates based on this premises as is the case of France. Some of these graphic proposals are presented in **Figure 2**.

**SRI and EPC input data overlap**

The SRI and EPC input data overlaps were analysed to check to which extent the SRI assessment is an addition to the EPC (i.e. providing extra information but also requiring additional assessment time) or are fully compatible with current EPC systems. This type of analysis has already been performed in E-Panacea and X-Tendo projects [7], [8], and the findings seemed to indicate there was little overlap. SRI2MARKET approach addresses the same issue but refined the scope by checking differences between three building typologies (residential, non-residential <290 kW, non-residential >290 kW effective rated output) and by analysing potential overlaps. This means that, besides strict input data compatibility, the potential was also evaluated in cases where:

1. technical system/services are evaluated but not totally in terms of control/functionalities.
2. it is only applicable in some buildings.
3. the evaluation exists but is not mandatory.



**Figure 1.** A myriad of different approaches to EPC certification highlighted in EPC certificates in SRI2MARKET countries (From left to right: Austria, Greece, Croatia, Portugal, Cyprus, Spain and France).

The result of this analysis is summed up in **Figure 3** and reveals a new insight on overlap from the previous works.

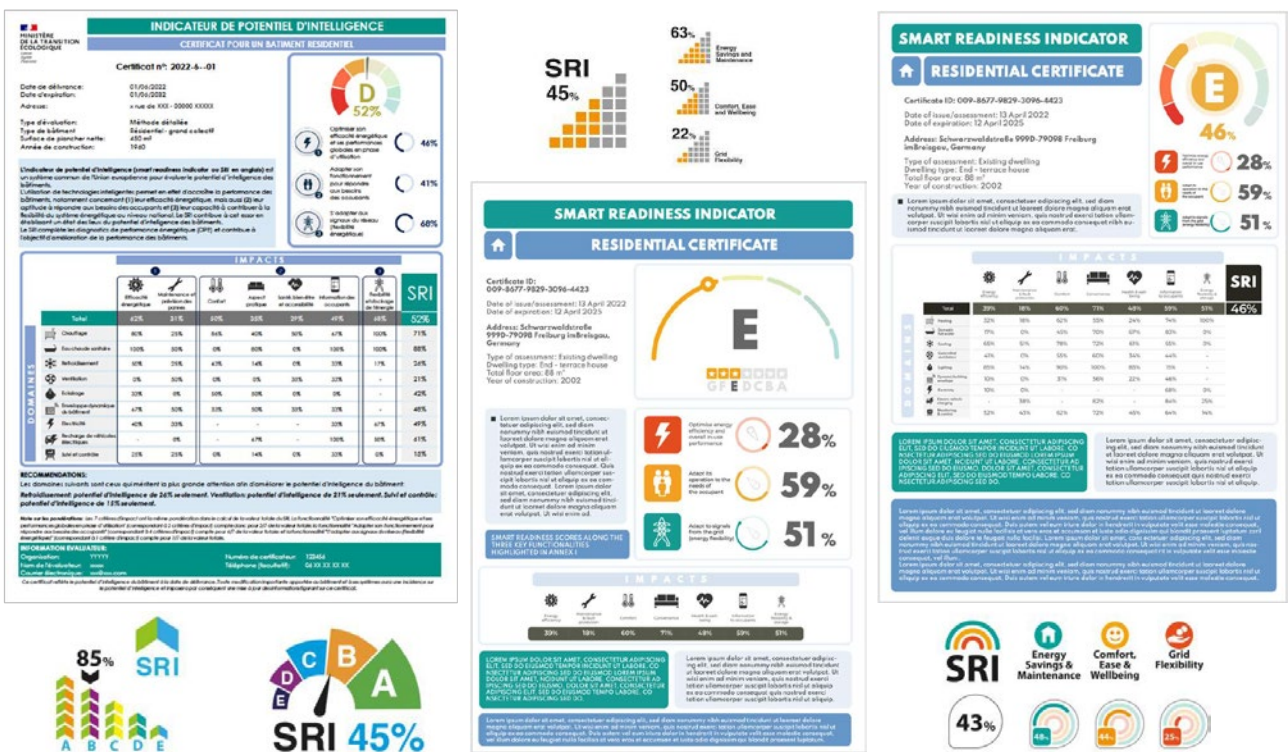
It is clear that, except for Greece, the strict overlap between parameters is low (on average 25% independent of the building type). A more detailed analysis revealed they are strongly correlated with general building data used on EPC and SRI and very little on actual smart ready services analysed. When evaluating the overlap potential, the picture changes, and a higher correlation is evident. This becomes obvious in non-residential buildings with an effective rated output >290 kW and in countries such as Spain and Portugal although for different reasons. The common practice of using centralized automation and control systems in new buildings as well as the positive implication these systems have on inspection procedures and the higher potential for cost-effective energy reduction impact, partially explains these results. In the case of Spain, the higher correlation is explained using some assessment methods (software) for EPC issuing which include the evaluation of several SRI related services. It is therefore mainly a voluntary assessment option some assessors use. The case of Portugal is quite different as there are mandatory BACS requirements for new buildings with an effective rated output >290 kW which are strictly related to the “Energy performance of buildings - Contribution of building automation, controls and building management” standard (EN ISO 52120-1:2022). In practical terms this means that a

full SRI pre-assessment is almost made, and little effort is needed to perform a full SRI assessment.

**SRI certification pathways**

With the information available on the SRI2MARKET target countries on EPC certification systems and potential input parameters overlap, together with feedback gathered from national stakeholders and, in some cases, feedback from ongoing or finished test phases, a simplified multicriteria evaluation was performed for each country by national experts. It implied rating the importance of 49 different features/characteristics/criteria along three different SRI certification implementation scenarios according to its EPC system integration level:

- **Scenario I - Fully integrated** - SRI is fully embedded in EPC certification system and is part of the EPC certificate.
- **Scenario II - Mildly integrated** - Features of SRI are integrated in the EPC system. For instance, some information might be part of the certificate, qualification of experts and quality control systems are the same. But SRI can be assessed independently.
- **Scenario III – Solo** - There is a national framework for the SRI certificate, but its market implementation is fully independent of EPC system on all stages. Some information for SRI can still be placed in the EPC, if it exists



**Figure 2.** Several graphical layout and design proposals for SRI logos and certificates (Sources: [4], [5], [6]).



The preliminary results hint at some general conclusions:

1. Despite the differences between countries, the overall evaluation already points to a strong preference for a pathway that follows scenario I - fully integrated or Scenario II - mildly integrated.
2. Regardless of the scenario, there are topics that seem to be critical to the SRI certification process, namely: impact on energy and emissions reductions, the certificate format and contents, and the overall costs of implementing and running the scheme.
3. On the other hand, the alignment or complementarity with other market-based building certification systems was not considered very relevant for the definition of the certification pathway.

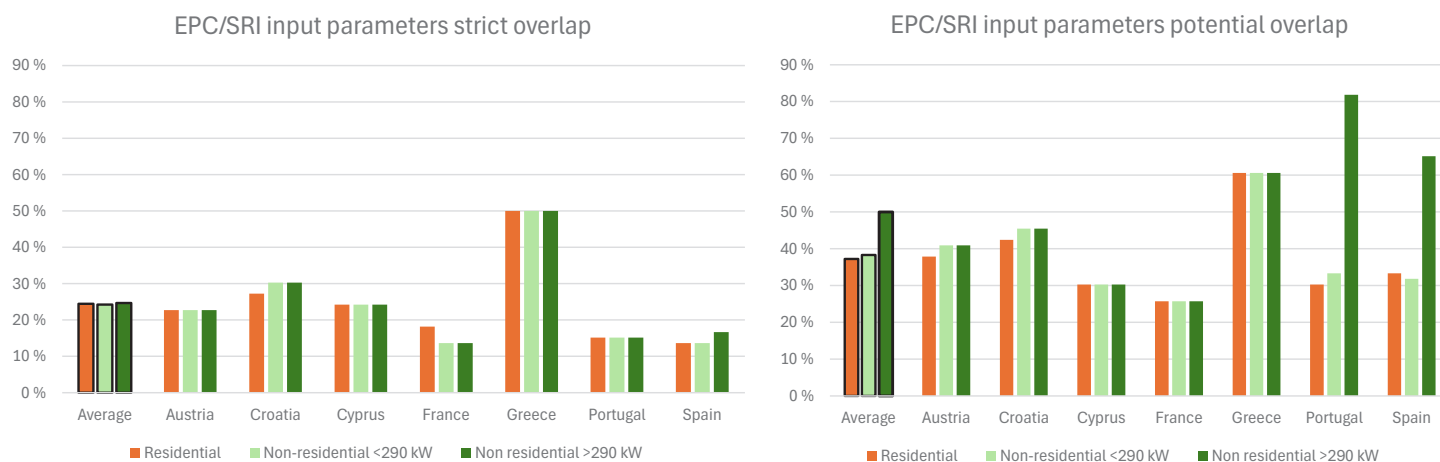
Going into more detail, there are specific features that have been commonly rated as very high importance irrespective of the scenario and country, namely:

1. Information from the buildings EPC or information from the national EPC database should influence the weighing factors for technical domains across impact criteria.
2. SRI relies on additional information from EPC databases and provides additional outputs to the EPC databases.
3. Display and visual appearance of the SRI certificate contents.
4. If the preferred pathway is scenario I - fully integrated or scenario II - mildly integrated with the EPC system, then SRI certificate visual identity should be linked to EPC visual identity.

This means a strong effort should be placed on the final format and graphic layout of the SRI certificate, effective, it not common, communication platforms and data exchange between SRI and EPC systems should be put in place and the visual identity of the SRI should follow as much as possible the EPC visual identity.

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**Figure 3.** SRI input parameters strict and potential overlap with EPC input parameters across SRI2MARKET countries in 3 different building typologies.