

**Enhancing Energy Performance Certification:**

# **Code of Conduct for Smart Readiness and Sustainability Rating**

[www.timepac.eu](http://www.timepac.eu)



TIMEPAC aims to modernize building certification practices according to the latest Energy Performance of Buildings Directive (EPBD) review. The guidelines series provides recommendations for stakeholders involved in building certification to improve their working procedures to meet the objectives of the Directive.

The Code of Conduct for Smart Readiness and Sustainability Rating is a voluntary initiative managed by the TIMEPAC consortium. It is a set of guidelines, values and principles that are considered fundamental for the successful, professional and transparent calculation of the Smart Readiness Indicator (SRI) and selected sustainability indicators in European countries. It can be considered as a quality indicator for clients (building owner, facility managers, building users, etc.) on what they should expect and require from the SRI and sustainability auditors in order to achieve expected benefits.



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TIMEPAC "Guidelines to create archetypes of the building stock from EPC data"

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TIMEPAC "Code of Conduct for Smart Readiness and Sustainability Rating"

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## 1. BACKGROUND AND INTRODUCTION

**T**owards Innovative Methods for Energy Performance Assessment and Certification of Buildings (TIMEPAC) is a *Coordination and Support Actions (CSA)* Horizon 2020 project. Europe's building stock covers some 25 billion square metres of floor space, of which 75% is residential. Therefore, retrofitting plays a major role in achieving the energy and climate targets set for 2050. The ongoing revision of the EU Energy Performance of Buildings Directive (EPBD) is therefore crucial for tackling climate change and energy poverty. This is TIMEPAC's starting point – turning goals into action by transforming the entire Energy-Performance Certification (EPC) process.

As valued as the EPC is, some doubt exists as to whether it reflects real building conditions. There is clearly a trade-off between the cost of issuing a detailed and tailored EPC and the willingness of customers to pay for it. Current EPCs are cheap, but they are not investment-grade documents and follow a static approach. TIMEPAC aims to improve existing energy-certification processes and move from single, static certification to more holistic and dynamic approaches. As a result, Energy-Performance Certificates will be enriched with retrofitting solutions and experts can be better trained to make our homes fit for the future.

The Code of Conduct for Smart Readiness and Sustainability Rating is a voluntary initiative managed by the TIMEPAC consortium. It is a set of guidelines, values and principles that are considered fundamental for the successful, professional and transparent calculation of the Smart Readiness Indicator (SRI) and selected sustainability indicators in European countries. The aim is to inform and stimulate the SRI and sustainability auditors to objectively evaluate the existing situation in the assessed building and propose effective measures to reduce energy consumption in a cost-effective manner, without hampering the building itself or any function of technical building systems. Also, the TIMEPAC consortium hopes that the Code of Conduct for Smart Readiness and Sustainability Rating will stimulate other European stakeholders to discuss and agree to voluntary actions that will improve the energy efficiency, smartness, sustainability and flexibility of European buildings following common conditions such as the climate and energy-market regulations.

Additionally, the Code of Conduct for Smart Readiness and Sustainability Rating can be considered as a quality indicator for clients (building owner, facility managers, building users, etc.) on what they should expect and require from the SRI and sustainability auditors in order to achieve expected benefits.

According to the European Commission's Delegated Regulation (EU) 2020/2155 of 14 October 2020 supplementing Directive (EU) 2010/31/EU of the European Parliament and of the Council by establishing an optional common European Union scheme for rating the smart readiness of buildings, Smart Readiness Indicators "means an indicator that informs on the rating of smart readiness of a building or building unit in line with Article 8(10) of Directive 2010/31/EU."

The Level(s) is the common EU framework of core sustainability indicators for buildings, and it is designed to enable professionals that play a role in the planning, design, financing and execution of building projects to make a clear contribution to broader environmental improvements at the European level. It aims to establish a common language of sustainability for buildings by defining core indicators for the sustainability of office and residential buildings. In the scope of the TIMEPAC project the following sustainability indicators with the potential to effectively enrich existing EPCs are selected from the Level(s) framework:

- a. Use-stage energy performance
- b. Lifecycle Global Warming Potential
- c. Time outside of thermal comfort range
- d. Lifecycle costs

## 2. ETHICS AND VALUES

The Code of Conduct for the Smart Readiness and Sustainability Rating reflects ethics and values shared among the TIMEPAC partners, which make the entire process of Smart Readiness and Sustainability Rating more effective, professional and transparent, with the aim to deliver sustainable energy savings in buildings. The TIMEPAC consortium is committed to promoting the highest level of professionalism and integrity and to foster trust and mutual respect among the SRI and sustainability auditors, clients as well as the public. These values illustrate the effective, professional and transparent approach to managing the Smart Readiness and Sustainability Rating in terms of:

Efficiency	<ul style="list-style-type: none"> <li>• Energy savings</li> <li>• Economic efficiency</li> <li>• Indoor environmental quality</li> <li>• Sustainability in time</li> </ul>
Flexibility	<ul style="list-style-type: none"> <li>• Power saving</li> <li>• Power quality</li> <li>• Economic efficiency</li> <li>• Sustainable balance supply and demand</li> <li>• Renewable-energy generation</li> </ul>
Sustainability	<ul style="list-style-type: none"> <li>• Long-term thinking</li> <li>• Health-and-safety concerns</li> <li>• Respect for the environment</li> <li>• Intergenerational equity and intragenerational equity</li> <li>• Resilience</li> <li>• Innovation</li> </ul>
Transparency	<ul style="list-style-type: none"> <li>• Objectivity</li> <li>• Expertise</li> <li>• Integrity</li> <li>• Cooperation and participation</li> <li>• Openness</li> <li>• Clarity and fairness</li> <li>• Clear, regular and honest communication</li> </ul>



### 3. IMPLEMENTATION PRINCIPLES

The Code of Conduct for the Smart Readiness and Sustainability Rating consists of a set of twelve guiding implementation principles that are essential for the effective and trustworthy smart readiness and sustainability rating. The implementation principles are designed to inform the SRI and sustainability auditors about the required standards of professional conduct and practice that they are required to observe and to inform the client of the standard of conduct and practice they can expect of a SRI and sustainability auditor.

**1. Site visit is essential for the effective and transparent SRI and sustainability rating.**

It is crucial to physically inspect the building to understand its design, layout, construction, and materials. These factors greatly influence the building's energy consumption, flexibility potential and overall smartness. A site visit allows the SRI and sustainability auditor to see first-hand how the building is used. During the site visit the SRI and sustainability auditor collects all necessary data. The site visit should also be used to check how the systems work and check operation schedules, lighting usage, heating, ventilation and air-conditioning (HVAC) settings, and other factors that could affect energy usage, the SRI and the sustainability rating. A site visit helps to validate information provided by the building's management or obtained from energy and facility management. Use the opportunity to talk with building occupants about their activities, expectations, perceptions, and any issues they have noticed related to building usage.

**2. Avoid conflicts of interest and never try to sell products or services.**

The SRI and sustainability auditor will not participate in professional activities involving a conflict of interest. Honesty is the key ingredient for the success and always disclose to the client all potentially questionable associations and relationships in advance to any stakeholder, product or service providers that could potentially affect your work and professional integrity. If you are giving energy and flexibility advice, always aim at an economically efficient combination of sustainable energy efficiency and flexibility improvement measures in a transparent way.

**3. Respect the privacy and confidentiality of the client's information.**

The SRI and sustainability auditor will not disclose any confidential information obtained during the rating process concerning the business affairs or technical processes of any present or former client or employer without consent. Confidential information is defined here as names, addresses, phone numbers, financial data, personal details, vulnerabilities, defects, measurements, diagrams, blueprints, photographs, recordings, electronic versions, and other descriptions or representations that only the employers or clients have a right and a need to know about and disseminate.

**4. The SRI and sustainability auditor supports the application of innovative tools such as Building Energy Models (BEMs) and Building Information Modelling (BIM).**

BEMs are essential for predicting a building's energy use, providing valuable insights for improving efficiency and potentially reducing costs. An auditor with knowledge of BEMs can better evaluate a building's sustainability performance and offer suggestions for improvement. BIM tools provide a comprehensive, digital representation of the physical and functional characteristics of a building. They enable better coordination among all stakeholders, reducing errors and miscommunications that could lead to wasteful practices. Investors are increasingly

looking for investments that are both financially profitable and socially responsible. Auditors that use BEM and BIM to optimize energy performance are likely to propose more sustainable solutions for comprehensive renovations. An auditor who understands these tools appealing to such investments. This reinforces the importance of sustainable and efficient building practices in the construction and real-estate businesses.

**5. The SRI and sustainability auditor supports long-term use of energy-management systems.**

Energy-management systems help to monitor, control, and optimize energy usage and power flows, resulting in significant cost savings over time. These savings contribute to the financial performance of a building. The reduced energy consumption achieved by using energy-management systems leads to a decrease in greenhouse-gas emissions and other forms of pollution. Modern energy-management systems support demand-side management operations. Also, energy-management systems contribute to the sustainability of a business by minimizing resource depletion. This is a key consideration for the SRI and sustainability auditors, who aim to promote and invest in businesses that are environmentally responsible and sustainable in the long term. Energy-management systems can help organizations comply with local and international energy-efficiency standards and regulations. The SRI and sustainability auditors would support these systems as they help organizations to verify achieved energy savings, maintain compliance and avoid potential fines or penalties. The SRI and sustainability auditor must stay up to date on the latest technologies, strategies, and best practices in energy management.

**6. A key element of efficient demand-side management (DSM) is the proper identification of controllable and uncontrollable loads.**

By correctly identifying and managing controllable loads, demand can be shifted to off-peak hours when energy is cheaper and more abundant. This not only leads to cost savings, but also improves the overall efficiency of the grid. Additionally, proper identification of controllable and uncontrollable loads is crucial for better planning, control and interaction with the grid. In periods of high demand, being able to reduce controllable loads can prevent overloading and ensure grid stability. If controllable loads can be properly managed, they can be matched to times when renewable energy production is high, reducing reliance on non-renewable energy sources. For consumers/prosumers, managing controllable loads effectively can result in significant cost savings. By reducing peak demand and overall energy consumption, DSM contributes to climate-change mitigation efforts. Overall, the proper identification of controllable and uncontrollable loads is a foundational step in implementing effective demand-side management strategies and must be properly addressed during the SRI and sustainability rating.

**7. Recommendations should be tailored to the specific building and its unique characteristics and needs.**

Before providing any recommendation, the SRI and sustainability auditor must consider all aspects of the building's energy use, including heating, cooling, lighting and equipment. Document your observations and comments because this can be used for extracting energy-efficiency and flexibility-improvement measures. The SRI and sustainability auditor must always consider environmental impacts and strive to enhance sustainability. Recommendations should be economically and technically feasible for the client to implement.

**8. Always be transparent about the methods and assumptions used during the SRI and sustainability rating.**

The SRI and sustainability auditor should be transparent about methods, explaining the rating process, and sharing his/her findings openly with stakeholders. Transparency helps build trust among all stakeholders including building owners, investors, tenants, and regulatory bodies. If stakeholders understand the process and assumptions used in the rating, they are more likely to trust and accept the results. Clear communication about the methods and assumptions used makes the rating process and results more understandable. This allows stakeholders to make more informed decisions based on the rating. If the methods and assumptions used are clearly documented and communicated, it allows for the results to be reproduced and verified by others. This enhances the reliability and credibility of the rating. Clear communication about the methods and assumptions used supports the fairness and objectivity of the rating. It shows that the process is systematic and unbiased, rather than arbitrary. Transparency also demonstrates that the process complies with relevant regulations and standards. It also supports accountability by making it clear how decisions and ratings were reached.

**9. The SRI and sustainability rating should be unbiased and objective, focused on providing accurate and reliable information.**

To make informed decisions about energy-efficiency investments or improvements, stakeholders need accurate and reliable information. Biases or subjectivity could distort the results, leading to misleading conclusions or decisions. The smart readiness and sustainability rating should be unbiased and objective to ensure it provides accurate and reliable information. Investors and financiers often rely on these ratings to assess the sustainability and future performance of their investments. An unbiased and accurate rating system gives them confidence in their decision-making. For the rating system to maintain its credibility and continue to be used and respected, it must be seen as objective and unbiased. Otherwise, it could be discredited or disregarded.

**10. Always try to understand operational practices about how the building is used and operated, including occupancy, operating hours, and behaviour of occupants.**

Each building and its occupants are unique. By understanding operational practices, the SRI and sustainability auditors can provide recommendations tailored to specific use cases and behaviours, which are more likely to be implemented and effective. The behaviour of occupants and their interaction with building systems can greatly affect comfort and productivity. A good understanding of these factors can help improve these aspects while maintaining or improving energy efficiency.

**11. The SRI and sustainability auditor must ensure that all collected data are accurate, reliable and relevant.**

The accuracy and relevance of the data collected during the SRI and sustainability-rating process directly impact the reliability of the analysis. If the data are inaccurate or irrelevant, the resulting recommendations or conclusions might not be valid or effective. Accurate and reliable data enable informed decision-making. It provides a clear understanding of the current situation, which allows for the development of effective strategies and measures to improve energy efficiency. The credibility of the SRI and sustainability rating relies heavily on the accuracy and reliability of the data. Stakeholders are more likely to trust and act upon the recommendations if they are based on solid data. Accurate data allow for effective

benchmarking against similar buildings, which is vitally important for facility and energy managers. Inaccurate data could also lead to sub-optimal investment decisions and financial losses.

**12. Before submitting an official report always discuss your findings with the client.**

The SRI and sustainability indicators are not just percentages and numbers. The SRI and sustainability auditor should always try to explain his/her findings with the emphasis on the potential energy-efficiency and flexibility-improvement measures. This means open dialogue and feedback, which can lead to the implementation of the proposed improvements. Openness in the smart-readiness and sustainability-rating process ensures the results are reliable, understandable, verifiable and fair. It enhances the credibility of the process and supports decision-making by all stakeholders.

## 4. DEFINITIONS AND GLOSSARY

### **Building Energy Model (BEM)**

Building Energy Model (BEM) – is a simulation instrument which calculates the energy and thermal load used in buildings, supporting projects at the level of individual buildings (design, control, rating, financial incentives), and building stocks (program development, research).

### **Building Information Modelling (BIM)**

Building Information Modelling (BIM) – is a process supported by various tools, technologies and contracts involving the generation and management of digital representations of physical and functional characteristics of places. Building information models (BIMs) are computer files (often but not always in proprietary formats and containing proprietary data) which can be extracted, exchanged or networked to support decision-making regarding a built asset.

### **Energy Audit**

Energy audit - if conducted in a systematic and a comprehensive manner represents a powerful tool for evaluating current or past energy and environmental performance and management practice. The ultimate aim of energy and environmental audit is clear – identifying opportunities for reducing cost of energy and of environmental compliance.

### **Energy Performance Certificate (EPC)**

Energy Performance Certificate – is a certificate recognised by a Member State or by a legal person designated by it, which indicates the energy performance of a building or building unit. It should include the energy performance of a building expressed by a numeric indicator of primary energy use in kWh/(m<sup>2</sup> y), and reference values such as minimum energy performance requirements, minimum energy performance standards, nearly zero-energy building requirements and zero-emission building requirements, in order to make it possible for owners or tenants of the building or building unit to compare and assess its energy performance.

### **Level(s)**

Level(s) – provides a common language for assessing and reporting on the sustainability performance of buildings. It is a simple entry point for applying circular economy principles in our built environment. Level(s) offers an extensively tested system for measuring and supporting improvements, from design to end of life. It can be applied to residential buildings or offices.

### **Renovation Passport (RP)**

Renovation Passport (RP) – consists of a roadmap indicating a sequence of renovation steps over several years instead in one go, with the objective to transform the building into a zero-emission building by 2050. It shall indicate the benefits in terms of energy savings, cost savings, greenhouse emission reductions as well as broader benefits (on health, comfort, resilience to climate change).

### **Smart Readiness Indicator (SRI)**

Smart Readiness Indicator (SRI) – is a new indicator that assesses the technological readiness of buildings. The rating shall be based on an assessment of the capabilities of a building or building unit to adapt its operation to the needs of the occupant, in particular concerning indoor environmental quality and the grid and to improve its energy efficiency and overall performance.