

Advancing EPBD Implementation: The SmartLivingEPC project



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In the ever-evolving landscape of sustainable building practices, the European Union’s Energy Performance of Buildings Directive (EPBD) stands as a cornerstone for promoting energy efficiency and reducing carbon emissions in the building sector. With the ambitious targets set by the EU to achieve significant energy savings by 2050, initiatives such as the SmartLivingEPC project play a vital role in advancing the implementation of the EPBD and fostering innovation in building energy performance assessment.

SmartLivingEPC it’s a European Project funded by the Horizon Europe program that aims to revolutionize the way we assess and certify the energy performance of buildings. In the rapidly developing landscape of sustainable building practices, the SmartLivingEPC project emerges as a beacon of innovation, poised to revolutionize the traditional certification process. With its ambitious goals and groundbreaking approach, SmartLivingEPC is set to redefine the standards and methodologies governing energy performance certification, ushering in a new era of smart and holistic building assessment.

At its core, SmartLivingEPC seeks to integrate Industry 4.0 parameters into the very fabric of energy performance certificates (EPCs), transcending the limitations of conventional certification practices. The project’s primary goal is to create a digital certificate that meets and exceeds industry standards, leveraging cutting-edge tools and harnessing the wealth of information provided by Building Information Modelling (BIM) literacy. But SmartLivingEPC is not content with

innovating; it aims to set new industry benchmarks. Building upon existing European methodologies and standards, the project pushes the boundaries to develop novel procedures for smart energy performance certification. By doing so, SmartLivingEPC is not only advancing the field but also ensuring that its certifications are robust, reliable, and reflective of the multifaceted nature of modern building performance.

Expanding the scope of certification is a key aspect of SmartLivingEPC’s approach. Beyond energy performance, the project aims to encompass building smartness, indoor environmental quality, and sustainability aspects in its assessments. This holistic approach ensures that SmartLivingEPC certificates provide stakeholders with comprehensive insights into building performance, empowering them to make informed decisions. Integral to the success of SmartLivingEPC is its seamless integration with digital logbooks and building renovation passports. By facilitating the smooth incorporation of building performance parameters into digital databases, SmartLivingEPC enhances transparency, accessibility, and data management processes, making certification more efficient and effective.

A cornerstone of SmartLivingEPC’s methodology is its dynamic approach to performance parameters. By harnessing data from smart sensors and meters, accessible through an intuitive IoT visualization platform, the project provides stakeholders with real-time insights into building performance. This enables proactive decision-making and facilitates ongoing optimization efforts.

Crucially, SmartLivingEPC goes beyond traditional energy performance calculations. By encompassing the entire spectrum of EPB standards and integrating relevant non-energy parameters, the project ensures a holistic evaluation of building performance. This comprehensive approach enhances the accuracy and relevance of SmartLivingEPC certifications, setting a new standard for building assessment. Perhaps most groundbreaking of all is SmartLivingEPC’s exploration of energy certification at the neighbourhood scale. By examining how buildings interact within communities and influence each other’s energy performance, the

project gains a deeper understanding of the broader implications of certification efforts. This neighbourhood-scale approach promises to revolutionize urban planning and development strategies, paving the way for more sustainable and resilient communities.

In pursuit of its goals, SmartLivingEPC develops two parallel schemes – one at the building/building unit level and one at the neighbourhood level. This dual approach allows the project to cater to diverse needs and contexts, maximizing its impact and effectiveness.

SmartLivingEPC is part of the **Next Generation Energy Performance Certificates cluster** (NextGenEPC Cluster). A cluster of sister projects funded by the Horizon 2020 and Horizon Europe research and innovation programmes gathers 17 projects that started their activities in 4 successive generations:

- 2019: QualDeEPC, U-CERT & X-tendo
- 2020: D²EPC, E-DYCE, ePANACEA, EPC RECAST
- 2021: crossCert, EUB Super Hub, iBRoad2EPC, TIMEPAC
- 2022: CHRONICLE, SmartLivingEPC
- 2023: iEPB, SmarterEPC, and tunES

The guiding principle of the Next Gen EPC cluster is “progress together, not in isolation,” emphasizing the value of collaborative co-creation. By fostering an open and inclusive process, the cluster maximizes the quality, relevance, and effectiveness of its outcomes while minimizing redundancy and ensuring a cohesive approach. This collaborative ethos empowers decision-makers at

both the EU and Member State levels, as well as stakeholders across the EPBD community, to efficiently utilize emerging project results. This synergy facilitates the seamless transposition, implementation, and monitoring of the EPBD, weaving together a cohesive package of policy instruments for meaningful impact.

SmartLivingEPC is dedicated to aligning its objectives with the principles and goals outlined in the Energy Performance of Buildings Directive (EPBD) through active participation in the NextGeneration EPC Cluster. By leveraging the collaborative platform provided by the cluster, SmartLivingEPC aims to contribute to the advancement of harmonized standards, methodologies, and technologies for energy performance certification across the European Union. Through close collaboration with policymakers, standardization bodies, and industry stakeholders within the cluster, SmartLivingEPC seeks to ensure that its innovative approaches and methodologies are in line with the EPBD’s vision for promoting energy efficiency and sustainability in the built environment. By following the EPBD implementation through the NextGeneration EPC Cluster, SmartLivingEPC aims to not only meet but exceed the directives’ requirements, driving forward the agenda for a more energy-efficient and environmentally sustainable future. ■

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