Creating effective assessment tools for energy-efficient buildings

May 5 2023

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Buildings are Europe's largest energy consumer. They are responsible for about 40% of the energy consumed and 36 % of greenhouse gases

emitted in the EU. However, a mere 1% undergo energy renovations each year. To meet Europe's climate targets, buildings need to become much more energy efficient, and tools used to make this possible need to be improved.

One such tool is the Energy Performance Certificate (EPC) that provides information on a building's energy efficiency and recommended improvements. However, it also needs to be enhanced in terms of implementation, data quality and reliability. The TIMEPAC project is working on doing just that. It is developing a new, dynamic EPC that tracks a building's performance over time in order to empower and motivate building owners to make their buildings as energy efficient as possible.

Insufficient information

A news item on "Energy Post" paints a picture of the current situation. Although EPCs are a requirement for any building put up for sale or rent in the EU, they fail to provide enough information to help assess a building's actual energy performance. They also do not shed any light on a building's potential to host renewable energy production installations or distribute any energy generated to the grid. As TIMEPAC project lead Prof. Leandro Madrazo of Ramon Llull University, Spain, states in the news item, "current certificates have become a mere administrative requirement rather than effective tools for the renovation of the building stock."

According to Prof. Madrazo, the energy certification process is experiencing a "paradigm shift." The focus is no longer only on a building's energy performance as an isolated structure, but rather as part of a larger, interconnected system. "Originally, an EPC was a label for a building, like you have a label for appliances, such as a refrigerator. But buildings are not just devices: buildings are inhabited, that is, they

cannot be detached from people's economic capacity and cultural values, their personal goals and lifestyles, which change over time, just as buildings do," he notes.

The new, dynamic EPC will therefore include data on a building's actual rather than estimated energy consumption, as well as information on the performance of materials and residents' comfort level. "Comfort means thermal comfort but also indoor air quality, visual comfort and acoustic aspects," explains Prof. Vincenzo Corrado of Italian project partner Politecnico di Torino.

Buildings also have the potential to generate energy to charge electric cars. TIMEPAC sees buildings as both consumers and producers of energy, "so there will be a continuous connection between each building and the external environment in terms of energy and information exchange," observes Prof. Corrado.

As part of its efforts to improve the EU's building energy certification tools, TIMEPAC (Towards innovative methods for energy performance assessment and certification of buildings) is inviting building experts to have their say on the future of building certification and renovation in the EU through a 10-minute online (survey. Titled "Getting ready for the building renovation wave," the survey will help identify any obstacles or barriers in the implementation of new EPCs.

More information: TIMEPAC project website: timepac.eu/

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