An evaluation framework of public-private compensation mechanisms in energy efficiency interventions in residential building stocks

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Keywords: green value recapture; energy transition; compensative model; energy performance of buildings

Abstract The revision of the European Directive on the energy performance of buildings (EPBD) stipulates that, by 2030, the sale and rental of residential properties in an energy class lower than E will be prohibited. In Italy, where over 60% of the building stock is classified in class F or G, these regulatory provisions may have repercussions on the real estate market, thereby rendering energy efficiency interventions mandatory. In such a scenario, there is a necessity to equip oneself with evaluation tools capable not only of estimating the financial profitability of interventions, but also of exploring innovative ways of managing and capturing the surplus value created. Among these, the principle of Green Value Recapture (GVR) is of particular importance, understood as a hypothesis of recovery, by the community, of a share of real estate surplus value induced by energy transformations supported – directly or indirectly – by public policies.

The present work puts forward a proposal for an integrated assessment framework, with the aim of achieving the following objectives:

i) the identification of the minimum interventions necessary for the adjustment to class E, and the subsequent assessment of their financial profitability, is of paramount importance;

ii) the assessment of the real estate surplus value associated with the energy class improvement;

iii) outlining potential GVR mechanisms for the redistribution of benefit generated according to sustainable urban taxation logic.

The proposed framework is conceived as a potentially generalisable evaluation tool, capable of accompanying the energy transition of the existing building stock by integrating four different analytical dimensions – energy, economic, regulatory and fiscal. These dimensions are considered useful for increasingly implementing cost-effectiveness evaluation mechanisms. The logical structure of the framework enables a systemic reading of energy requalification processes, thereby enhancing the connection between regulatory obligations, investment choices and redistributive impacts.

The contribution sets out to promote an integrated and replicable evaluation approach, which is intended to combine private convenience and public interest in the context of managing the urban energy transition.