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Occupant behaviour and building renovation of the social housing stock: current and future challenges

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Highlights

- Social housing has a leading role in demonstrating benefits of housing renovation
- Energy efficiency cannot be achieved without addressing the human factor
- Renovation of the public housing leads to business opportunity for private sector
- Occupant behaviour might have an impact on payback time of renovation investments

Abstract

Although EU policies and actions are focused on rising awareness on climate change, there are strong indications that the implementation of energy-saving measures does not always result in the expected CO₂ reduction. The central role of occupants for achieving energy savings is increasingly recognised, and it is even more important in the social housing sector, where the environmental value is combined with the social purpose of reducing inequalities and fuel poverty. The paper examines the existing energy policy instruments and the current analysis methods in relation to occupant behaviour. Strategies to promote behaviour changes are investigated, and the co-benefits of implementing such actions in the social housing sector are highlighted in order to move from behaviour change to systemic change. Four initiatives in Europe (Italy, the Netherlands, Sweden and UK) are further investigated to understand the effects of occupant behavioural change towards lower energy consumption in the social housing sector. A comparative matrix for the analysis of the four practices is developed to highlight their common characteristics and divergences, to finally point out opportunities and barriers towards energy efficiency.

Keywords: *policy instrument; social housing; behaviour change; renovation strategy*

1. Introduction

In the European Union, buildings are responsible for 40% of energy consumption and 36% of CO₂ emissions. The residential sector, with the 75% of the total energy consumption in buildings [1], is an important target area for energy reduction. In 2012, household energy consumption for space heating, water heating and

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