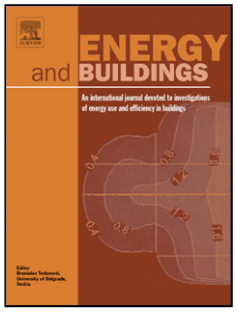

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Towards European targets by monitoring the energy profile of the Cyprus housing stock

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Highlights

- Roof insulation and window replacement are the only refurbishments on pilot buildings.
- Decentralised electric heating is predominant in the new dwellings.
- The calculated energy consumption is 2 to 5 times higher than the actual from bills.
- The current energy trends are inadequate for reaching the Cyprus energy targets.
- The Cyprus energy Directives do not address the cooling energy reduction effectively.

Abstract

Energy efficient renovation of the existing housing stock is imperative to reduce building energy consumption since the building sector in Europe accounts for an estimated 40% of the energy used from all sectors and more than 80% of the buildings today will still exist in 2020. Following Europe's energy objectives, the paper investigates, based on the European Union Directives, the current energy refurbishment rates and examines the future energy performance of the Cyprus housing stock, in order to determine if they are adequate in achieving the Europe energy targets.

The research focuses on pilot houses in Cyprus, which include dwellings from all typologies as classified, according to the IEE project EPISCOPE. The houses were monitored and based on the collected data and the performed simulations, their current and future energy performance are presented in the form of Energy Performance Indicators (EPIs).

From the study, it is observed that with the current trends the national climate protection energy targets are unattainable. This is mainly due to the inadequate rate and depth of energy refurbishment of the existing