Practicing Science and Technology, Performing the Social – EASST 2010

Track 35: Energy Use In Everyday Life – Combining Sustainable Technologies and Practices

Abstract

Energy Use in Everyday Life – Results of an owner occupier survey

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As part of the UK government sustainability agenda a target of 80% reduction in CO_2 emissions by 2050 based upon 1990 levels has been set. To achieve this, the carbon footprint of existing housing must be addressed by capitalising on energy efficiency and the installation of low and zero carbon technologies. There are two inter-related issues that need to be considered: physical improvements to the performance of existing homes; and changes to lifestyle to support sustainable living.

Considering that, due to the very low demolition rates currently observed approximately 70% of the housing stock in 2050 will comprise of that which already exists, 27% of the UK's CO_2 emissions are directly attributable to housing and 68% of all UK housing is privately owner occupied, UK government policy must engage with the private owner occupier if its emissions target is to be met. Average figures suggest that 3000kWh/annum of electricity is used in the housing sector which masks a variability of less than 500 to more than 10,000 kWh/annum. This variability suggests that many households are already living in ways which achieve the government target and are able to manage their homes in such a way that results in significantly reduced energy consumption than the average figures suggest. Thus energy variability arises largely from the way occupants manage their home, so by understanding how homes are occupied; how lifestyle, activity patterns, the building fabric and how the use of technology impacts on energy consumption and quality of life, we will start to decipher this variability and help promote energy reducing practices to other private owner occupiers which do not sacrifice current standards of living.

This paper will present a critical review of a desk study and the findings of a telephone survey of privately owned and occupied homes within the southeast of London. The survey will investigate the daily activities and patterns of occupation, how technology influences such activities and impacts quality of life and attitudes towards energy consumption and conservation and what roles occupant behaviour, building fabric and technology play in that.

The paper will identify the factors that could support the governments' climate change agenda to influence the energy consumption practices of private households and identify the role household technology and occupancy behaviour have in determining energy reducing solutions.

Keywords

Owner occupier; Energy Consumption; Role of technology