EVALUATION OF ENERGY USE IN PUBLIC HOUSING IN LAGOS, NIGERIA: PROSPECTS FOR RENEWABLE ENERGY SOURCES

Abstract

Even though domestic energy can be from either renewable or non-renewable sources, the former is preferred because of its role in reducing both the operational energy intensity and carbon footprint. Given the positive role renewable energy plays in the energy mix, this paper examined the pattern of operational energy use with particular reference to the renewable and non-renewable energy content in medium and high density public residential buildings in Lagos, Nigeria. A survey research method was adopted for primary data collection while data analysis was by descriptive statistics. The study found that renewable energy use in the residential units is very low. In contrast, there was high dependence of the occupants on non-renewable direct fuel combustion through the use of fossil fuel-driven privately-owned electricity generators for electricity supply as a result of the inadequate supply from the national grid. In addition to the relatively high operational energy intensity observed in the studied buildings, the findings have implications for the safety, health and wellbeing of the building occupants as well as for carbon emissions from the buildings and for overall environmental sustainability. Recommendations to increase renewable energy use in new buildings and as retrofits in existing buildings were made.

***Keywords:*** : Lagos, Nigeria, non-renewable energy, operational energy, public housing, renewable energy