Analysis on the Building Energy Performance of a Retrofitted Residential Building with RETScreen Expert Software

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Abstract : Energy efficiency measures for residential buildings in South Korea is a national issue because most of the apartments built in the last decades were constructed without proper energy efficiency measures making the energy performance of old buildings to be very poor when compared with new buildings. However, the adoption of advanced building technologies and regulatory building codes are effective energy efficiency strategies for new construction. There is a need to retrofits the existing building using energy conservation measures (ECMs) equipment's in order to conserve energy and reduce GHGs emissions. To achieve this, the Institute for Global Climate Change and Energy (IGCCE), Kyungpook National University (KNU), Daegu, South Korea employed RETScreen Expert software to carry out measurement and verification (M&V) analysis on an existing building in Korea by using six years gas consumption data collected from Daesung Energy Co., Ltd in order to determine the building energy performance after the introduction of ECM. Through the M&V, energy efficiency is attained, and the resident doubt was reduced. From the analysis, a total of 657 Giga Joules (GJ) of liquefied natural gas (LNG) was consumed at the rate of 0.34 GJ/day having a peak in the year 2015, which cost the occupant the sum of $10,821.
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