Abstract

In this study, an analysis was conducted of energy demand and consumption in the Al-mustaqbal University building. The analysis approach relies on observed changes in behavior and energy usage collected for the Future University. Al-mustaqbal University consists of (4) buildings. The work was applied to the five-story humanitarian building. However, the energy consumption calculation was applied to the human-sized building consisting of five floors. The entire building was inventoried in terms of the equipment used, including fans, lighting, and air conditioning units, as each building varies in energy consumption. The consumption period was from 8 a.m. to 6 p.m., when consumption is highest. It was also found that the fourth month had the highest energy consumption, being a summer month. Buildings consume energy based on building occupancy and the percentage of students present. . The goal is to propose a hybrid energy model that reduces dependence on conventional power, lowers carbon emissions, and enhances energy resilience. The findings aim to guide future renewable energy initiatives for academic institutions aiming to transition toward greener and more sustainable energy systems.

An executive plan has been put in place to install solar cells on buildings to reduce electricity consumption. We would also like to point out the project Using Micro-Technologies to Improve the Efficiency and Sustainability of Electrical Power Systems at the Al-mustaqbal Energy Research Center, where it was shown that the difference in using the smart system to reduce electricity consumption compared to normal use was 30 percent's