ESTIMATION OF THE FACTORS INFLUENCING THE BUILDING ELECTRICITY CONSUMPTION

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Purpose. To investigate the influence of electric consumers on features of the electrical power consumption of a building.

Results of the work. The research of electricity consumption was carried out on the example of the building № 1 IET NAS of Ukraine on the street. Bulakhovskogo, 2. For this purpose, electrical power consumption Wibee monitoring system was used, which allows the Internet and software to display current data on the screen of a smartphone or computer in real-time and to archive them. In parallel with the Wibee monitoring system, current meters were used which can measure a wide range of electrical parameters (voltage in the network; amperage; varieties of AC power: active, reactive, total; angle of phase shift in the network) at the given time, and also save them on a computer at a selected interval of measurement. It should be noted the high sensitivity of this device (even when switching 100 W lamp, changes in the value of amperage have already been observed).

The main electric consumers in the administrative building are: lamps, electric heaters (in the cold season), refrigerators, electric kettles, microwave ovens, etc. Wibee monitoring of the electricity consumption is from November 2018 to the present. As can be seen from the graphs obtained, the highest electricity consumption and the highest power were observed at 13 hours from Monday to Friday (during lunchtime, when electric kettles, microwave ovens were used, etc.), and least electricity consumption were observed at night and at weekends (refrigerators worked), because this building is administrative.

Conclusions. According to the results of the research of electricity consumption, it was possible to qualitatively and quantitatively estimate the influence of the electric consumers on the on features of the electricity consumption of the administrative building. This will allow further developing of technical, technological and organizational measures for efficient and economical energy consumption of the building.