

ABSTRACT

Electrical energy is a very important thing for Telkom Institute of Technology in carrying out its activities. Electrical energy use in IT Telkom is still less efficient because of the lack of awareness of students or employees of related institutions. Therefore, in this study the authors design an application of electric energy saving system that is capable of setting the use of electric energy in accordance with needs. In addition this system also delivers information such as alarm electrical energy use, in real time and historical and save all the changes to the database. The title of this study is "Design Of Electrical Saving Energy Systems Using Energy Management System Equipped With Access Control in 1st Floor Of Laboratory Building IT Telkom."

Designing systems that made adjusting the design of the existing building so it does not provide a drastic change that can disrupt the user's system. The things that become the parameters of this scenario on the electrical system (power socket and lighting), room (in this case refers to the MCB), and time usage. Forms of savings are translated with lighting arrangements, power arrangements directly and setting electricity demand for each room if you need more than a standard electric capacity on a daily basis.

From the results of research conducted, the conclusion that the electric energy saving system using energy management system has access control on the floor of a laboratory building that has been designed with IT Telkom can perform the function of monitoring, control and reporting in real time and based on an analysis of efficiency of the system is obtained from the introduction of the first scenario could reduce electricity costs up to 35.51% and with the implementation of the second scenario could reduce electricity costs up to 50.37%.

Keywords: Energy Management System, Access Control, Automation, Efficient