

ABSTRACT

Energy management is an important means for the success and endurance of an organization that is moving towards achieving critical goals in order to be realized. Many energy savings and budgets can be obtained through energy management. Energy audits are the first step to start good energy management. Energy audits will get concrete data about the conditions that exist in a building. The objectives to be achieved in this study are to determine the level of Energy Consumption Intensity (ICE) and the profile of energy use of buildings for a certain period and to find value for energy savings as an effort to conserve electrical energy in buildings.

To determine the ICE, the measurement data is taken, namely the use of energy consumption in the building, including the detailed use of air conditioning in the building. After taking the measurement data, look at the general ICE criteria in the table. After checking ICE, ESO analysis is performed. If an analysis has been done, a recommendation is made whether there is still an opportunity to achieve energy efficiency from the building. The first step is to collect historical data in advance on the use of electricity as a whole in a certain period. From these results we can find out the ICE criteria of the Building.

In the BCA Gajah Mada building the total IKE value is 162.33 kWh/m² year. This category is efficient because the standard for IKE for buildings is 240 kWh/m² year or 67.6% of the maximum ICE target. In the use of a total ICE building AC load which is calculated through measurements in power and room area, the ICE value is 10,52 kWh /m²/month. The ICE standard in air-conditioned buildings is 14,58 kWh/m²/month. Energy Saving Opportunities (ESO) for AC Gajah Mada building is done through a recommendation to reinstall the use of PK AC. The results of measurements conducted in the study found that a large percentage of the power efficiency of the air conditioner is 9.6% when adjusting the temperature of the air conditioner in accordance with the recommended temperature. In the lighting system of buildings it is advisable to replace TL lamps with LED tube lights. This is because in addition to saving energy, LED lights have a long life. And the calculation results obtained time needed in investment planning (payback period) is for 3 years 1 month.

Keywords: Energy Management, Energy Audit, ESO, ICE, Efficiency