ABSTRACT

Name : Nadya Aprilia Study Program : Electrical Engineering Title : Analysis of Efficiency Opportunities Through Energy Conservation on the Air Conditioning System of the Nurhayati General Hospital Building, Garut City

The study discusses energy conservation in the air conditioning system to increase the efficiency of using electrical energy in buildings because 65% of the electricity used in the Nurhayati General Hospital building is used in the air conditioning system. The purpose of this study is to analyze energy consumption to obtain energy savings in the air conditioning system to achieve more efficient energy consumption. The method used in this study is energy conservation by energy audit calculated energy consumption intensity, and opportunities for energy-saving efforts in the air conditioning system. The results obtained in this study are the value of energy consumption intensity (IKE) at Nurhayati General Hospital for non-AC buildings of 29 kWh/m2/year is included in the category of "efficient" while buildings with air conditioning are included in the criteria of "efficient enough" which is 146,5 kWh/m2/year. The energy consumption of the AC system is 376.641 kWh/year of the total energy use in the building. The recommended energy saving opportunity with the most efficient results is using an energy-efficient and inverter AC type, and a savings of 95.594 kWh/year or 44% per year, and the IKE value after saving becomes 109,3 kWh/m2/year into the "efficient" category, with a payback period of 4 year and 6 months from the savings obtained.

Keywords: Air Conditioning, Energy Conservation, Energy Consumption Intensity, Energy Saving Opportunities