ABSTRACT

Electrical energy is the primary energy required for electrical / energy, through the electric current to the units of ampere (A) and voltage with volts (V) with provision needs electrical power consumption with the unit Watt (W). Benefits of electric energy for daily human life is important both for industrial activities, commercial activities and in everyday life. Various power tools, transform electrical energy into other energy as a function of the tool. The process of changing a need for electrical energy cost which depends on the amount of electrical power used. Excessive usage of electric energy regardless of its usefulness is a waste that results in reduced energy supplies because of the limitations of the source of electrical power itself, which is non-renewable resources, and to ensure the supply of the source of electrical energy is necessary strategic efforts to support supply of electrical energy in an optimal and affordable.

In this thesis, the author designed and implemented a greedy algorithm in electric power management scale office buildings or households. The system is designed to be using a PLC (Programmable Logic Controller) controllers and use the 0/1 Knapsack problems with the implementation of the algorithm Greedy. This design will regulate the use of power tools based on the priorities of those tools that have previously been set via PLC and based scheduling that adjusts the cost desired by the user.

Keywords: PLC (Programmable Logic Controller), 0/1 Knapsack Algorithm Greedy