

ABSTRACT

Electricity is a necessity in life. Industry and households are highly dependent on the supply of electricity to be able to carry out their daily activities. Electricity or energy is needed in carrying out economic activities, therefore energy must be utilized as much as possible. Energy sources or power plants in Indonesia predominantly use fossil fuels. However, in the future, fossil fuels themselves can run out, so there is a need for a solution to energy limitations. Therefore, there is a transition from fossil fuels to renewable energy. Renewable energy is energy that comes from unlimited natural sources such as sunlight, wind, water, geothermal and biomass. The use of solar energy in Indonesia has very good potential, which geographically Indonesia is a tropical country. Indonesia has the potential to utilize solar energy which has a relatively high average daily sunshine hour. Therefore, in this project we use a photovoltaic system as an alternative to existing problems. However, the photovoltaic system has a problem, namely the system cannot convert energy optimally. So that MPPT control (maximum power point tracking) is needed to track the maximum power. MPPT has a function to track the maximum power generated by photovoltaics in various conditions of temperature and solar radiation and keep it at the point of maximum power.

Keywords: fossil fuels, renewable energy, photovoltaic systems, maximum power point tracking