

ABSTRACT

Photovoltaic is a technology that is useful for converting or converting solar energy into electrical energy. In reality, the power generated by photovoltaic is influenced by environmental conditions such as dust density, temperature, and humidity. With problems and conditions such as the following, it is necessary to have a system that can predict power output. The importance of this power forecasting research is to improve the performance of energy management systems for PV mini-grid operations and planning needs for the community.

In this study, a short-term photovoltaic output power forecasting system was designed using the Fuzzy Logic method where fuzzy logic is a logic that has a fuzzy value between true or false logic with values between 0 to 1. forecasting is done by making a fuzzy system with 3 inputs. environmental parameters, namely dust density, humidity and temperature along with 1 predictive power output. Fuzzy formation is done by making operating variables, membership functions and rules whose formation is based on short-term research data for 7 days. So that the system test is carried out by entering environmental parameter data that produces forecasting power output.

This study succeeded in forecasting power output through a comparison between actual power and predictive power with a Mean Absolute Error (MSE) forecasting error value of 54.83 and a Mean Absolute Percentage Error value of 14% so that the forecasting system is of good value..

Kata Kunci: *Photovoltaic, Fuzzy Logic, Forecasting*