

ABSTRACT

Electrical energy is the most widely used energy by humans around the world, therefore a lot of effort is being made to create alternative power plants, due to the increasing need for electricity supply, utilizing solar power derived from the heat of solar energy as a renewable power source is an option. right.

The problem is that the weather is fluctuating where conditions or conditions are unstable and always change every day, making solar radiation to the solar panels not optimal, therefore forecasting or forecasting analysis techniques are needed using a method. will be used, namely Time Series Analysis with the SARIMA (Seasonal Autoregressive Inegrated Moving Average) algorithm for the Seasonal model, with the aim of knowing the estimated energy production (kWh) in the future by using reference data from the past.

In this final project, an analysis of the Seasonal model is carried out, namely SARIMA(1,0,1)X(2,1,1)₂₄ SARIMA (1,1,1)X(2,1,1)₂₄SARIMA(1,0,1)X(2,0,1)₂₄ , SARIMA(1,1,1)X(2,0,1)₂₄, where the model has been validated by MSE (Mean Square Error) and RMSE (Root Mean Square Error). The best model based on the validation results for the Seasonal model is the SARIMA(1,1,1)X(2,1,1)₂₄ model with MSE Training value =0,0000035, RMSE Training =0,0018708, MSE Testing = 0,0000067 dan RMSE Testing = 0,0025884.

Keywords: Supply Side Energy Management, Solar Panels, Forecasting, Time Series Analysis, SARIMA