

## **ABSTRACT**

Electricity consumption forecasting is currently one of the most important challenges for the industry. Due to the increasingly high level of electricity consumption, every company needs to use electrical energy efficiently so that the electricity consumption used does not exceed the company's budget.

In technological developments, various applications of machine learning have been widely carried out to overcome the problem of predicting electricity consumption such as Recurrent Neural Network (RNN) and Long ShortTerm Memory (LSTM) to find complex patterns in electricity consumption data. Temporal Convolutional Networks (TCN) is a special architecture that has advantages in terms of computational efficiency and is able to explore patterns in the long term compared to RNN and LSTM. This study aims to create a prediction system for the use of electrical energy in the future using the TCN algorithm with high accuracy.

After testing the parameters, the best parameters for the TCN model were obtained with a data sharing ratio of 80% training and 20% testing, resulting in the best prediction result with an error of MAE 0.526019, MSE = 0.924949, RMSE 0.961743 and R2 score of 76.5%.

**Key Words:** TCN, Electrical Energy Consumption, Forecasting