

ABSTRACT

Household expenses are electronic appliances that are often used at home. The household burden is supplied from two sources of solar panels and the state power plant, to choose the supplied load from which source, it requires an automatic switch system of the load. To improve household load and resource optimization and avoid overload, the solution to the load problem is with load balancing techniques. With a switch system using a relay, determined by solar panel power output.

The research discusses the design of an automatic switch system of household loads from solar panels and PLN using artificial neural networks. The JST controller system compiled using JST backpropagation consisted of 4 inputs, four layers hidden each consisting of 4 neurons and one neuron on the output layer. In this test to know the established work network provides a change in loading.

Test results The parameter used to get the smallest error rate in the process of setting an automatic power load switch is the best to use a number of repetitions of 2000 times with an accuracy of 5.3%. Artificial Neural Networks can experience convergent failure or not close to output because the initial guess is not good. Initial experiments with actual solar panel data with as many as 98 data produced non-convergent output values. The solution to improving the initial experiment is to simplify learning data 40 data produces convergent output.

Keywords: *Automatic Switch, Load, Solar Panels, PLN, Artificial Neural Network*