# Summary

Biswas et al. introduce about prediction of residential building energy consumption, in a neural network approach. Prediction of residential building is being significant in recent decades, but the modeling of it is still underdeveloped. They use Artificial Neural Network for modeling because ANN is good for nonlinear data than statistic method, and has robust calculation of large and dynamic data. The development and validation on TxAIRE research house has been demonstrated in this paper. They compared 2 ANN models. The input variables are same and they are number of days, outdoor temperature and solar radiation while the output variables are house and heat pump energy consumption in each model. The model based on LM and OWO-Newton algorithm had good results of coefficient of determination within 0.87-0.91.

# Paraphrasing

In past, the distribution network had a passive form and distributed energy resources (DERs) were not able to participate in ancillary services market. But today, due to environmental issues, fossil fuel shortage, and global warming problems, the number of DERs, especially renewable energy sources (RESs) and electric vehicles (EVs), have increased significantly in power systems [1]. However, due to the limited capacity of the DERs, they still cannot participate in energy and frequency markets in a standalone manner. Furthermore, RESs generation and EVs demand have intermittent nature and high stochastic behavior, which must be handled carefully. Thus, we need a structure that can aggregate various DERs to enable them to participate in energy and ancillary services markets and provide a framework to overcome their stochastic nature.

* According to Gouhgeri et al., the distribution network has a passive form and the distributed energy resources (DERs) were disable to participate in the past. But recently, the number of DERs, especially renewable energy sources and electric vehicles account in power systems because of environmental issues, such as fossil fuel shortage and global warming problems. However, due to the limited capacity of the DERs, they still cannot participate in energy and frequency markets in a standalone manner. In addition, RESs generation and EVs demand that must be handled carefully have intermittent nature and high stochastic behavior.