Energy Audit -Forecasting energy by implementing Arima model to the energy consumption dataset

R.Parkavi[1], S.Kaveri Kanmani[2], C.Kokila[3], K.G.Monika[4], V.V.Muthu Priya[5]
[1,2,3,4,5]*Thiagarajar College of Engineering, Madurai, Tamil Nadu*
** Corresponding author: parkaviravi@gmail.com*

Abstract

Now a day's all the organizations focus on energy conservation. This is a major issue and researches are going on in conserving energy. An energy audit can be performed to investigate where the energy can be saved. We can find the usage of electricity in different areas in an organization and we can find the area where it can be saved.

Therefore we intend to take a time series data on energy usage and we applied time series model to predict the future usage of energy. By this prediction we can find the status of energy usage and we can also predict the areas of high energy usage so that we can initiate steps to conserve the energy. Thus saving the energy for the future generation and could find the best alternative source of energy for the existing energy sources by taking into concern that the alternative we should not harm the environment.

Therefore in our paper we forecasted how the energy consumption will be in the upcoming years based on the previous year's consumption values and could take the decision based on the forecasted value like whether to use alternative source or to minimize the energy consumption in selected targeted area. This may have a major impact on the environment regarding energy consumption and energy conservation.

References:

1. *Jason Brownlee ,Machine learning Mastery , How to Create an ARIMA Model for Time Series Forecasting in Python,Time Series, January 9,2017.*
2. *Matteo Dongellini, Cosimo Marinosci, Gian Luca Morini,Energy Audit of an Industrial Site: A Case Study, Energy Procedia, Volume 45,2014,Pages 424-433.*
3. *Cosimo Marinosci, Gian Luca Morini, Giovanni Semprini, Massimo Garai, Preliminary energy audit of the historical building of the School of Engineering and Architecture of Bologna, Energy Procedia, Volume 81, 2015,Pages 64-73.*
4. *Sanjay Kumar, Tarlochan Kaur,Energy Audit: A Case Study by, International Journal of Research in Management, Science & Technology (E-ISSN: 2321-3264),Vol. 1; No. 1, June 2013.*