

## **ABSTRACT**

Energy consumption plays a vital role in the economy of Pakistan. Situations in Pakistan concerning energy consumption are very alarming and going poorer day by day. There are various reasons such as poor leadership, poor decisions and global economic instability etc. How to handle and stay alive in these conditions needs great decisions, definitely from the leaderships as well as from the public.

In this research paper various ARIMA models have been obtained to forecast yearly consumption of the two energy sources; petroleum and natural gas are studied which plays an important role in the economy of Pakistan. The study aim is finding of suitable ARIMA (autoregressive integrated moving average) models for forecasting of the future consumption of petroleum and natural gas, considering different sectors of consumptions. This study attempts to outline the practical steps which need to be undertaken to use ARIMA time series and Econometric models to forecast Pakistan petroleum and natural gas consumption. A summary of the research work is given below.

Firstly, the energy concepts, the roll of energy consumption on economy of a county, past and present energy picture in Pakistan have been carried out. A sector wise petroleum and gas consumption also has been studied.

Secondly, review of literature is given, which indicates different methodologies and conclusions drawn by different researchers.

Thirdly, various techniques have been discussed, which tells about the most economical model obtained from historical data.

Fourthly, analysis of the data has been discussed. The results obtained from the analysis also have been given in this section along with interpretation. Various comparative studies have been made for sector wise non renewable energy consumption and tried to obtain the most economical model.