

NATURAL GAS PRICE PREDICTION

TEAM-13

TEAM MEMBERS:

SPANDANA J

MEGHANA M

MEGHANA K S

SANJANA G P

LANCHANA GUDAMI

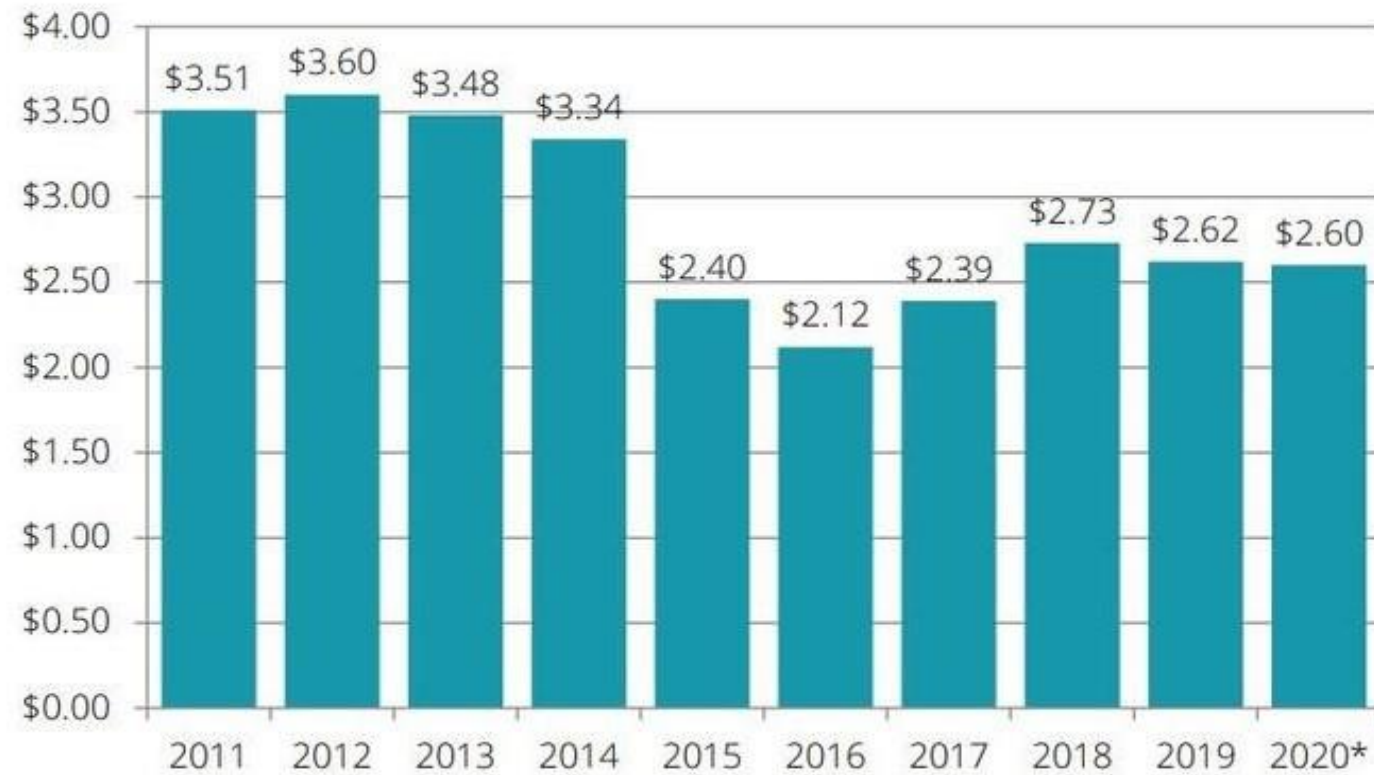
INTRODUCTION

- Natural gas constitutes one of the most actively traded energy commodity with a significant impact on many financial activities of the world. The accurate natural gas price prediction and the direction of price changes are considered essential since these are utilized in energy sustainability planning, commodity trading and decision making.
- In this project, a new deep learning prediction model is proposed for forecasting natural gas price. Additionally, a significant advantage of the proposed model is its abilities to predict the price of natural gas on the following day (regression) and also to predict if the price on the next day will increase, decrease or stay stable (classification) with respect to today's price.

PURPOSE

- Natural gas has been proposed as a solution to increase the energy supply and reduce environmental pollution around the world. The aim of this study is to investigate natural gas price forecasting based on machine learning and data-driven models for natural gas price to extract the libraries for machine learning for the price prediction of natural gas.
- Accurate natural gas price forecasting provides an important guide for significant in economic planning, energy investment, and environmental conservation.
- We will introduce the basic concepts, and major technical features of each machine learning approach. Then we analyze and compare their practical applications in natural gas price prediction and investigate future developments

Yearly U.S. national average price of gasoline:



THIS IS AN ANALYSIS OF NATURAL GAS PREDICTION PRICE

PROBLEM STATEMENT

- It has always been a difficult task to predict the exact daily price of the stock market index. The accurate and reliable predictions are almost impossible since these problems are close to random walk processes.
- Though we all are aware of the fact that, gas consumption is traditionally high which leads to rising market prices. The problem is that, in contrast to popular belief, there is remarkable deviation in price almost throughout the year.
- In order to target the said problem, we use machine learning algorithm to examine if we can predict the future price by adding different parameters which may have external direct or indirect effect on natural gas price.

SOLUTION

- Here, we have applied several input variables to predict the price direction. The models in the experiment have solved the problem as a regression. Regression model can be combined with Classification model predicting and to improve the directional accuracy for prices predictions.
- The same model need to be tested with large amount of data for prediction accuracy because non-parametric modeling approach requires a lot more training data to estimate the mapping function.
- And also we have created an UI using the Flask for the price prediction, this UI will allows us to predict the price. We use machine learning algorithm to examine if we can predict the future price by adding different parameters which may have external direct or indirect effect on natural gas price.

SOFTWARE DESIGNING

- Jupyter Notebook Environment
- Spyder Ide
- Machine Learning Algorithms
- Python(pandas,numpy,matplotlib,sklearn)
- HTML
- Flask

RESULT AND ACCURACY

In this project, Random Forest Regression is used to predict Natural gas price prediction. We get a validation accuracy of 98.00% which is pretty good.

CONCLUSION

- The present model has presented the current state in the field of natural gas forecasting. The empirical results demonstrate the prediction methods have decent performance in forecasting natural gas price
- And the simple Gas Price model which is easy to use and significant advantage of the model is that it has the ability to predict the price of natural gas on the next day (regression) and also predicts if the price on the next day will increase, decrease or stay stable (classification) with respect to today's price.
- The main contribution of this work is the development of a new forecasting model for the short-term prediction of natural gas price and movement

THANK YOU

