

An aerial photograph of the London skyline at dusk. The Shard is the most prominent building on the left, its glass facade reflecting the dark sky. The city extends to the right and into the background, with various buildings and the River Thames visible at the bottom. The sky is a mix of dark blues and oranges from the setting sun.

ENERGY CONSUMPTION IN LONDON: PREDICTING FUTURE TRENDS ACROSS DIFFERENT SECTORS

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INTRODUCTION

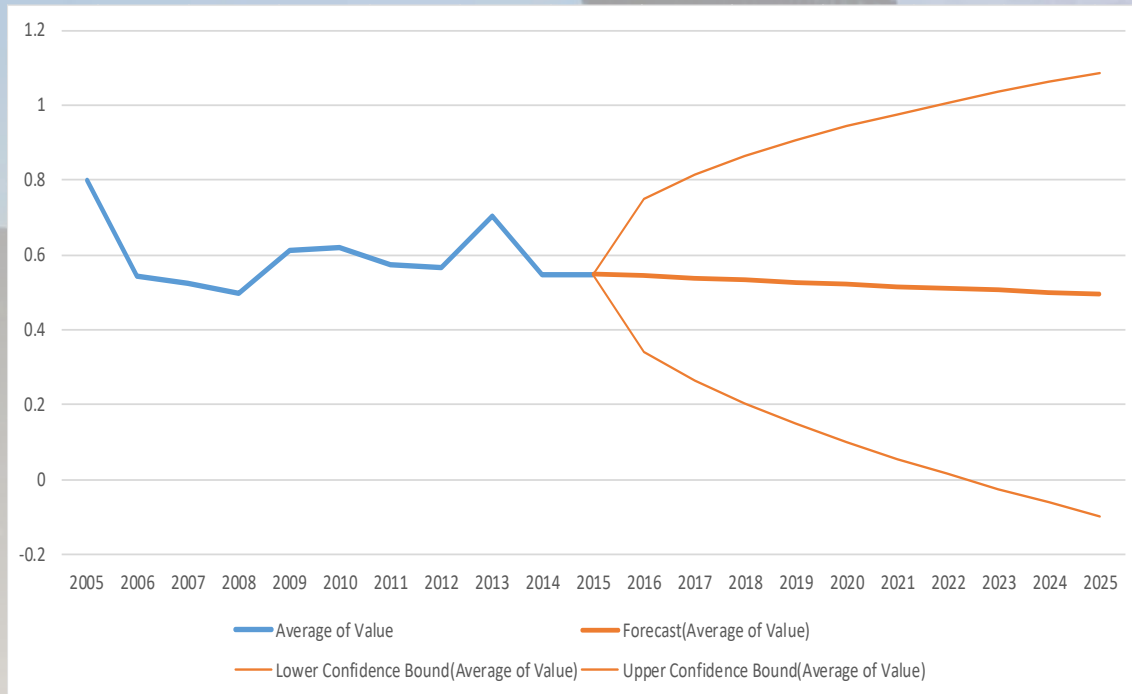
- Energy companies contributed 2.5 percent of gross value added (G.V.A) to the UK economy in 2021.
- Each year, Londoners spend billions of Pounds on energy bills.
- This project uses the previous yearly energy consumption from 2005-2015 across different sectors namely coal, electricity, bioenergy and wastes, manufactured fuel, petroleum products, and gas to make a 10 years forecast.

METHODOLOGY

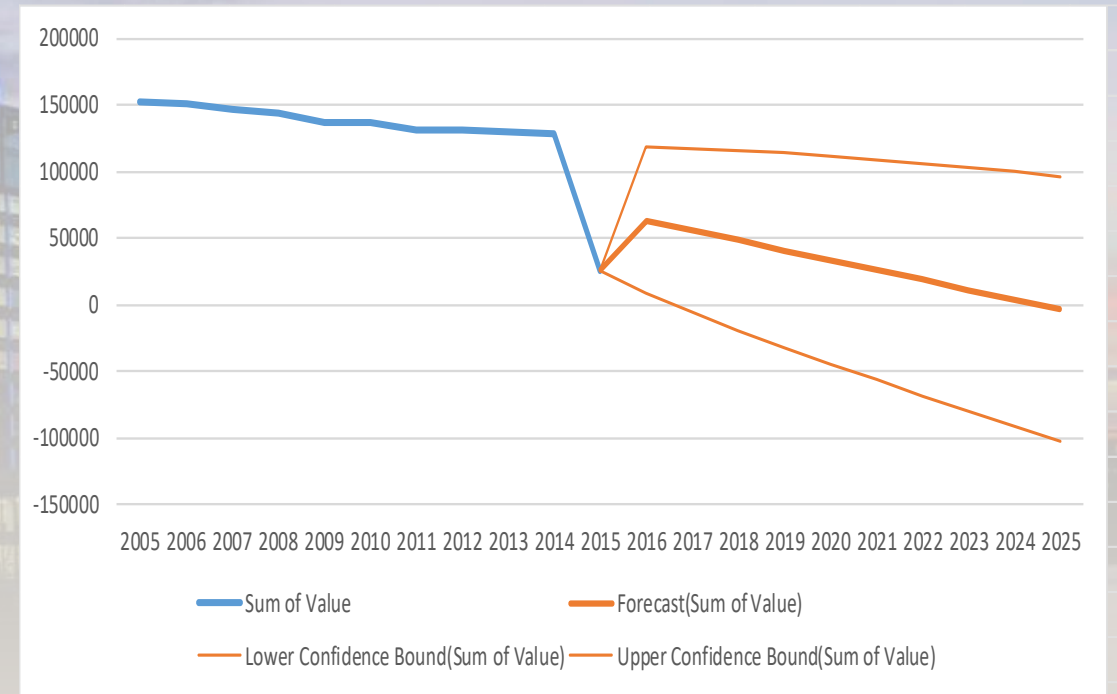
For this project, Triple Exponential Smoothing or Holt-Winters Model was used. It applies to dataset that has seasonality, trend, and error. SEMMA methodology was used because of the size of the project and its straightforwardness. The stages of SEMMA include: Sample, Explore, Modify, Model, and Assess.

RESULTS (DATA VISUALIZATION)

COAL

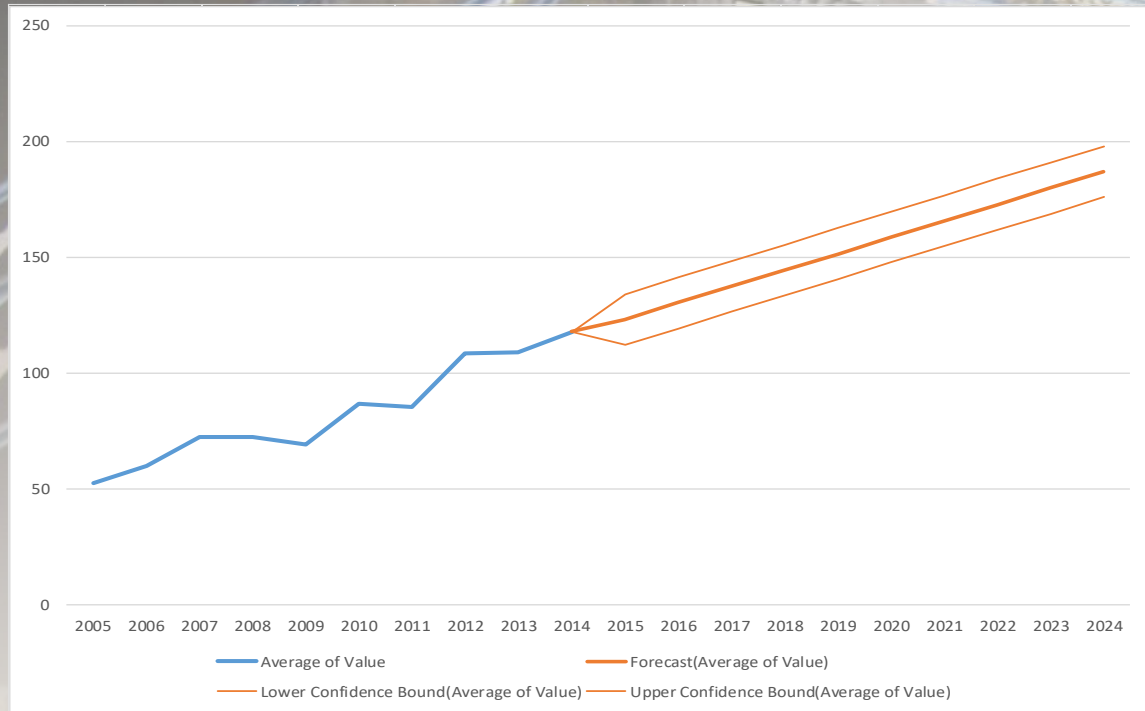


ALL FUEL

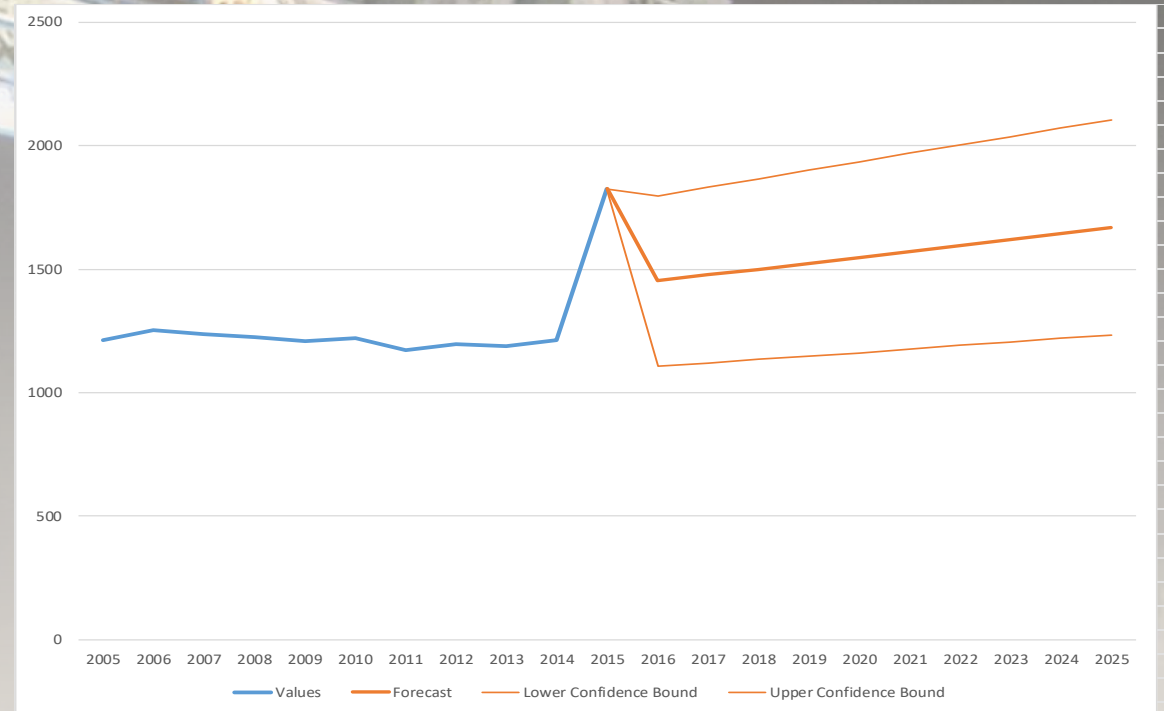


RESULTS(DATA VISUALIZATION)

BIOENERGY AND WASTES

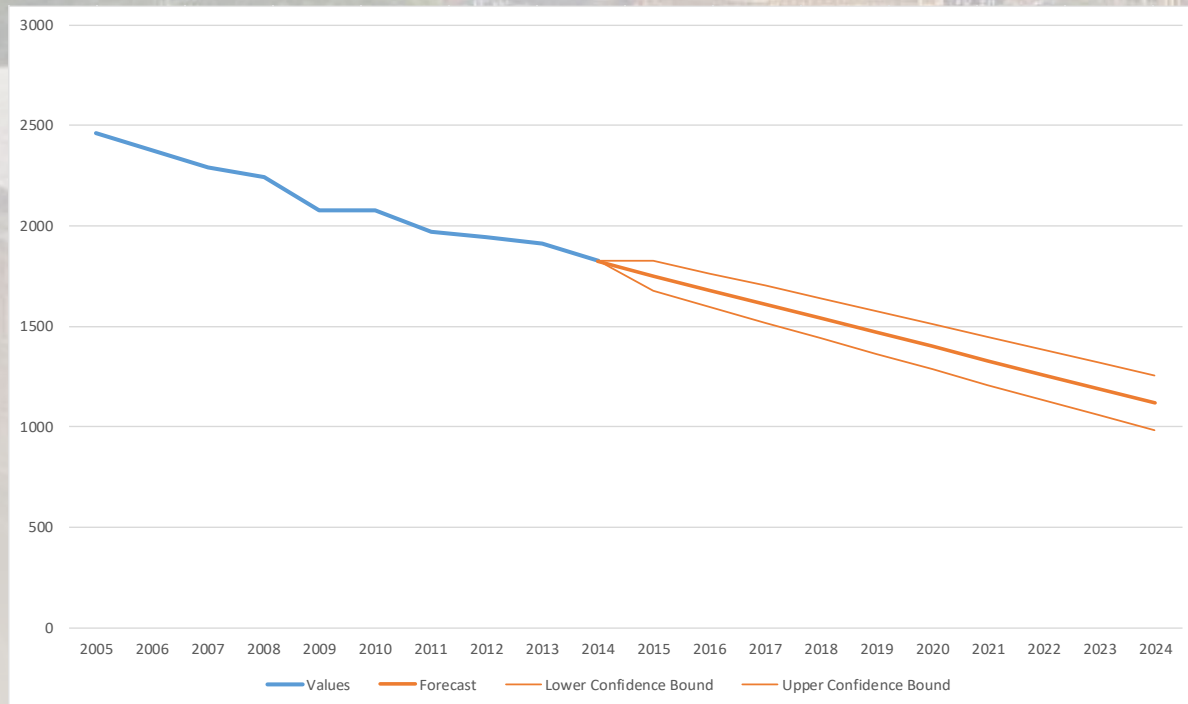


ELECTRICITY

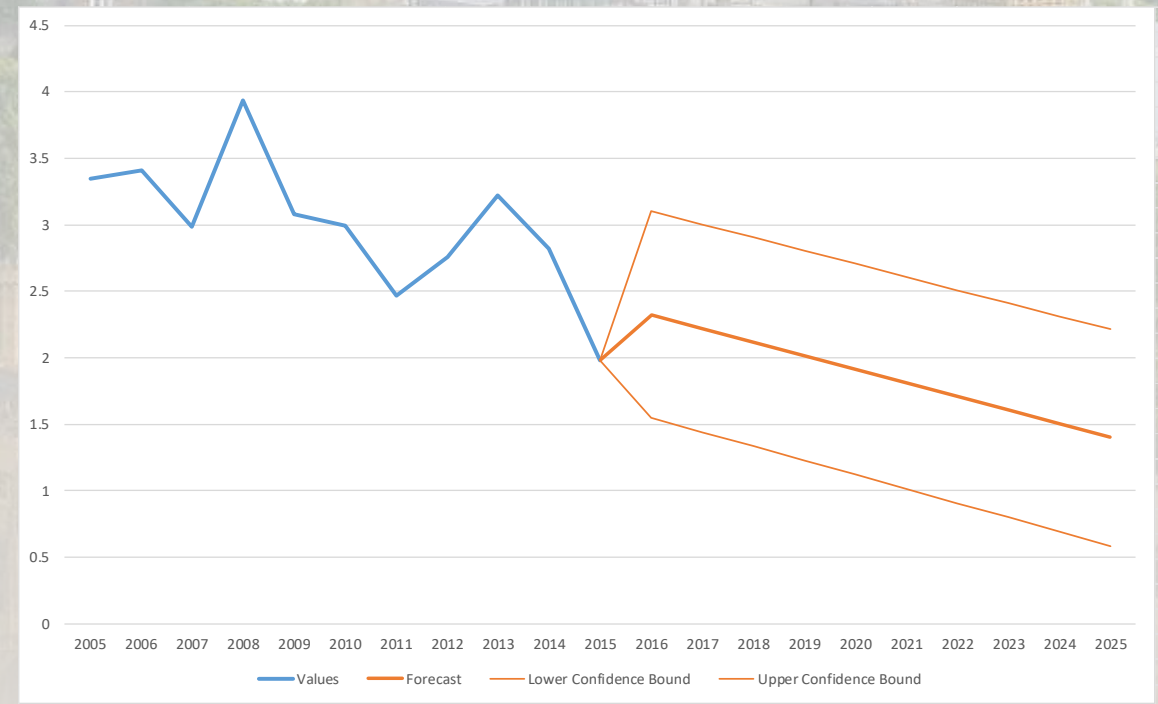


RESULTS(DATA VISUALIZATION)

GAS

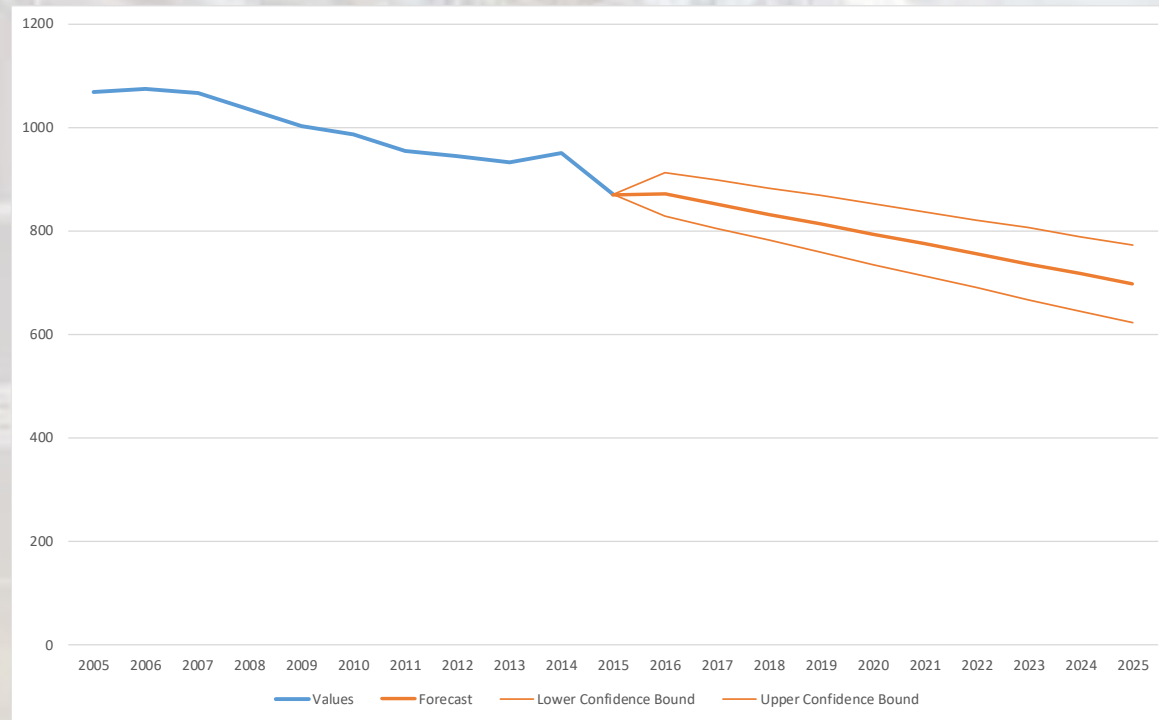


MANUFACTURED FUELS



RESULTS(DATA VISUALIZATION)

PETROLEUM PRODUCTS



RESULTS(DATA ANALYSIS)

- Interpreting the visualization, it can be deduced that there will generally be a fall in the electricity consumption of the 32 boroughs of London across different sectors except for electricity and bioenergy and wastes.
- Coal's forecast falls linearly throughout the years.
- The forecast for bioenergy and waste is on the rise
- Electricity forecasts witnessed a drop in the year 2016 but then falls in the year 2017. It then gradually rises from the year 2018 to 2025.
- Petroleum products witnessed a fall from the year 2005 to 2014, then rises in 2015. It continues to fall to 2025.
- Manufactured fuels forecasts will keep falling.
- Gas, on the other hand, has been falling over the years. It is not surprising seeing the energy consumption of gas continue to fall over the next 10 years.

CONCLUSION

The above dataset has shown that the energy consumption in London will reduce over the years across the different sectors except in electricity and bioenergy and wastes. This is due to the available dataset and the pattern of consumption across these sectors.