Title:
A Time Series-Based Study of Energy Consumption Patterns Across UK Regions (2005–2030)

Introduction:
This project was part of my MSc Data Science dissertation at the University of Salford. The study aimed to analyse historical energy consumption trends across UK regions and forecast future demand to support energy planning and policy decisions.

Tools & Methods:

- SQL Server → Used for data preprocessing, handling missing values, and exploratory queries.
- Power BI → Developed dashboards with KPIs (total energy, fuel breakdowns) and interactive year slicers for visual insights.
- Python (Google Colab) → Implemented ARIMA and ETS forecasting models to predict energy consumption for 2021–2030.

Dataset:

- Source: UK Government energy statistics (2005–2020).
- Variables: Year, Fuel type, Region, Energy consumption (ktoe).

Key Findings:

- Sharp decline in coal usage and steady growth in renewables.
- London and other major cities remain the highest consumers of energy.
- Forecasts show a continued upward trend in renewable energy demand, with overall consumption expected to increase moderately by 2030.

Results & Impact:

- Delivered end-to-end analysis pipeline (SQL → Power BI → Python).
- Produced actionable insights for policymakers and urban planners on energy sustainability.
- Demonstrated technical integration across data engineering, BI, and time series forecasting.