

① Intro Juction and Project Goal

Forecast Germany's electricity consumption for the next 10 years using economic, demographic and renewable energy trends.

main outputs: historical analysis, scenario-based forecasts, API for data & predictions.

② Data

Source: **OWID Energy dataset**

Columns: year, electricity-generation (TWh), Population, gdp, renewables-share-energy.

Period: 198-2025

③ Models

* **Prophet (time-series)**

Input → year + generation

→ 10-year forecast with uncertainty bands

* **ML Regression (scikit-learn)**

Features: Population, gdp, renewables

models:

Linear Regression (baseline)

Random Forest (non-linear patterns)

XGBoost (optional - higher accuracy)

Lstm / RNN