

① Introduction 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 forecast, API for data & predictions.

② Data

Source: OWID Energy dataset

Columns: year, electricity-generation(twh), population, gdp, renewables-share-energy.

Period: 1981-2025

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)

XG Boost (optional - higher accuracy)

LSTM / RNN