# Predicting Daily Electricity Consumption in Norway

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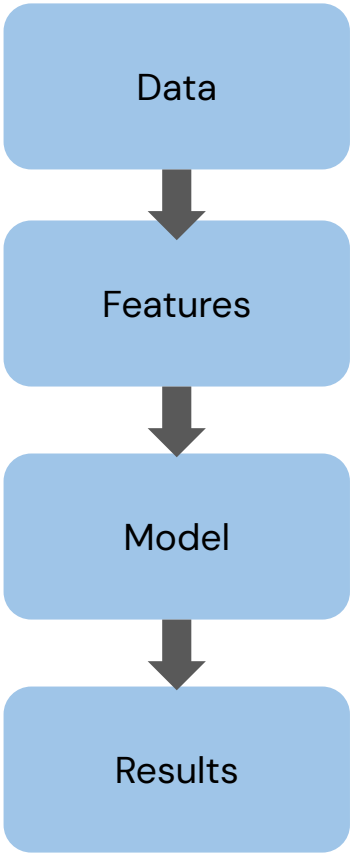
# Why this matters

- Norway’s electricity is nearly 100% hydropower
- Demand forecasting = grid stability + smart reservoir use
- Electrification (EVs, heating) keeps demand high but stable
- Climate trends: colder summers, milder winters reshape demand

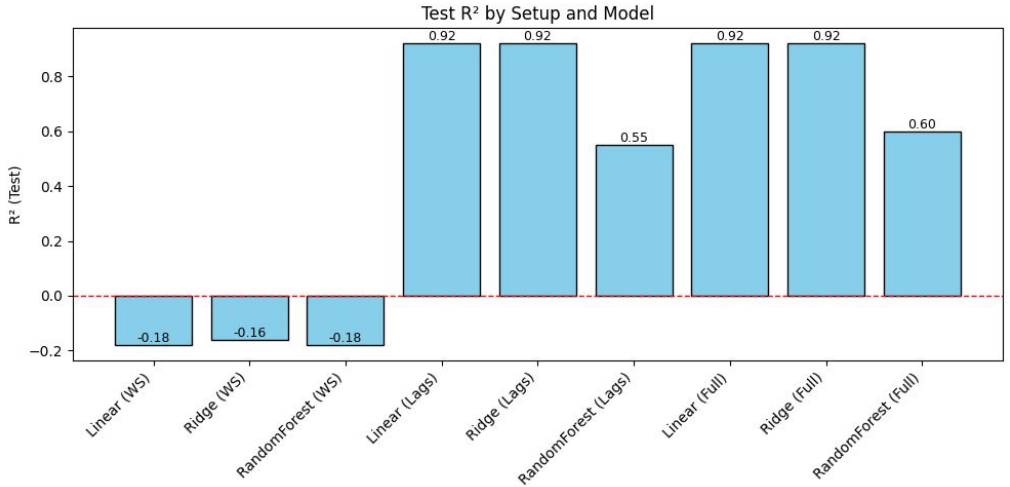
# What we did

- Collected open data:
  - ENTSO-E (daily consumption 2015–2025)
  - MET Norway (temperature, precipitation)
- Built and tested models:
  - Weather + Seasonality
  - Lag features (yesterday, last week)
  - Full model (all features combined)



# What we found

- Weather & seasonality → weak predictors (negative $R^2$)
- Lag features → strong predictors ($R^2$ = 0.92 with Ridge Regression)
- Random Forest → tended to overfit, less reliable
- Daily demand = best explained by recent consumption patterns



# Why it matters for Norway

- Sustainability: smarter hydropower, fewer imports
- Electrification: nearly 90% of new cars in 2024 electric → stable demand
- Climate adaptation: forecasts must evolve with changing conditions
- Ethics: public data only, transparent methods, clear limits

Daily electricity demand is best predicted by yesterday, not the weather.