POWER CONSUMPTION OPTIMISATION—

import pandas as pd

import numpy as np

from statsmodels.tsa.arima.model import ARIMA

import matplotlib.pyplot as plt

# Load energy or water consumption data

data = pd.read\_csv('water\_energy\_consumption.csv', index\_col='date', parse\_dates=True)

# Fit an ARIMA model

model = ARIMA(data['consumption'], order=(5, 1, 0))

model\_fit = model.fit()

# Make predictions

forecast = model\_fit.forecast(steps=30) # Predict next 30 days

# Plot results

plt.plot(data.index, data['consumption'], label='Observed')

plt.plot(pd.date\_range(data.index[-1], periods=30, freq='D'), forecast, label='Forecast')

plt.legend()

plt.show()