Renewable power plant

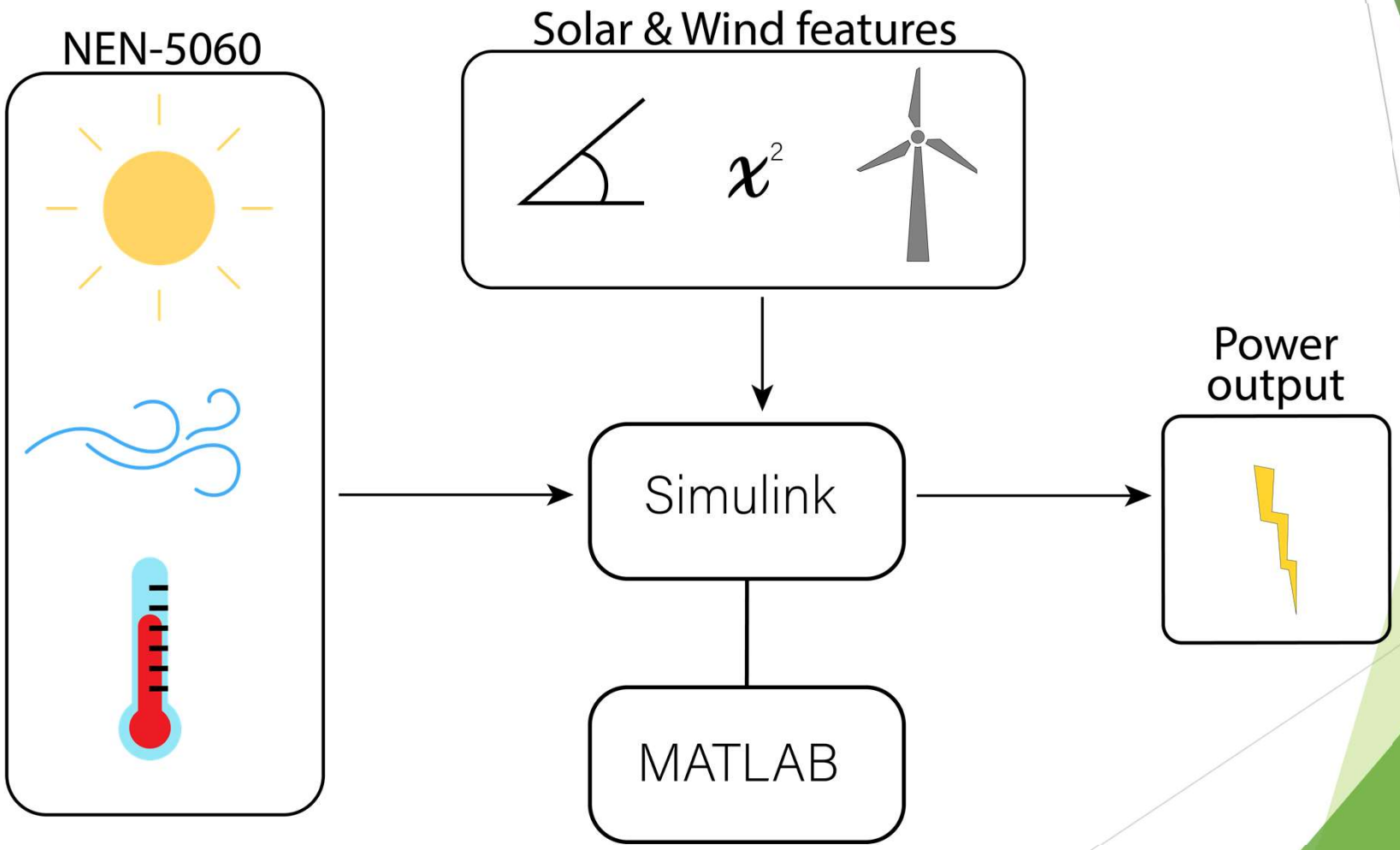
The problem

- Renewable powerplant with windturbines and solar panels
- Constant supply of 6MW
- Lowest possible cost
- Simulink simulation

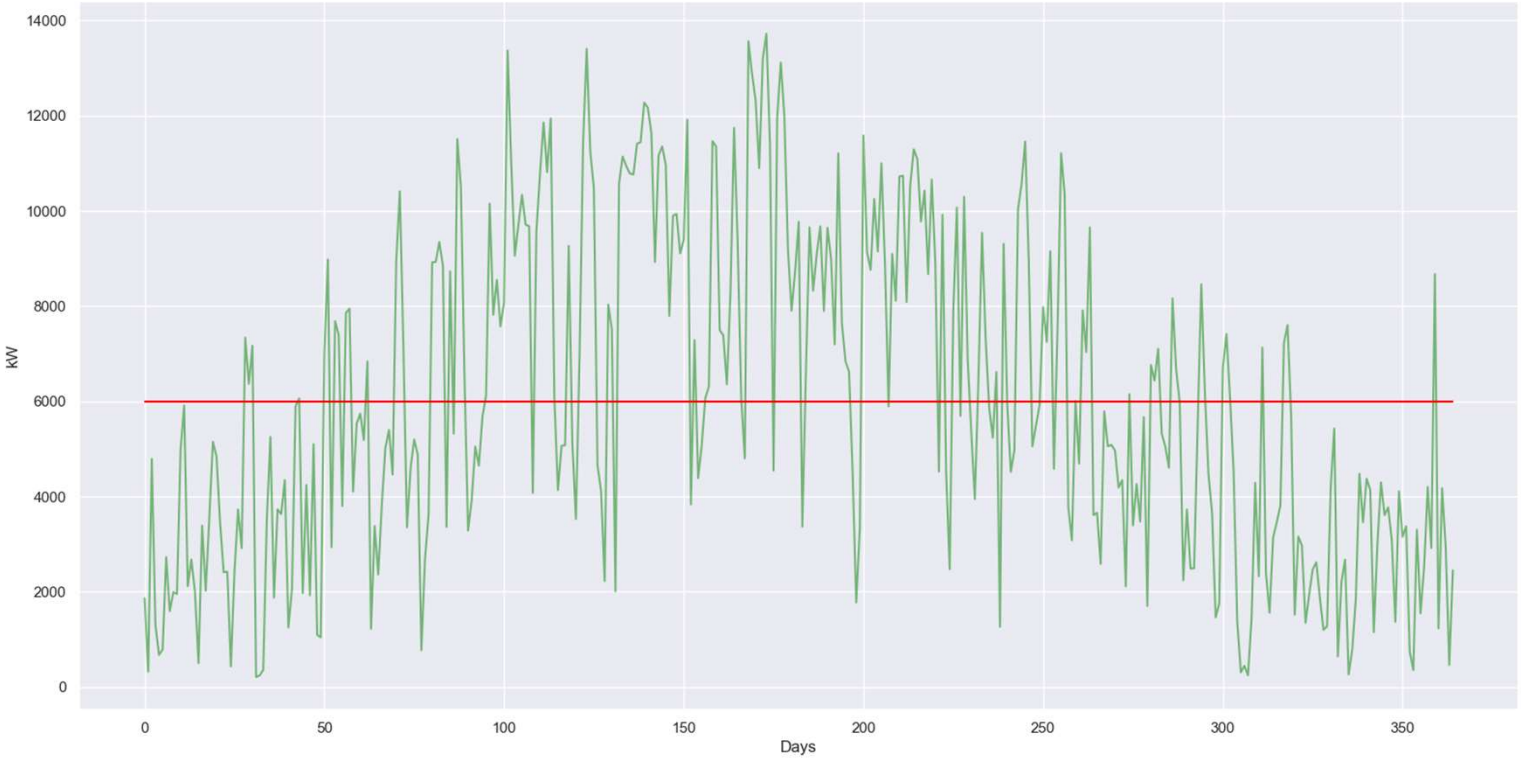
Our solution

- Call simulink simulation from python
- Calculate the cost of the setup
- Minimize the cost with a genetic algorithm

Simulation


NEN-5060
Solar & Wind features
x^2
Simulink
MATLAB
Power output

Simulation output



Cost calculation

- Solar panels
- Windturbines
- Required storage
- Extra high cost when not producing at least 6 MW

Genetic algorithm

- Start with pool of 100 setups
- Run simulations and calculate costs
- Keep ones with lowest cost
- Make new pool setups based on these ones
- Add random mutations
- Repeat

Questions