

## Project reference

# Sensitivity analysis for power plant and storage investment decisions

## HOW WAS THE PROPOSITION?

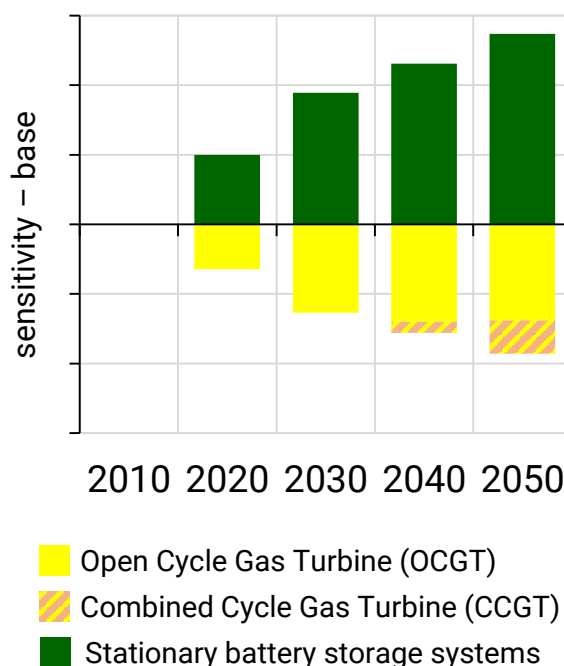
Power plant investment decisions are subject to a number of uncertainties. Against this background, the objective is to identify the relevant uncertainties and to analyze their potential impact in Germany.

## HOW WAS THE PROCEDURE?

To analyze the impact of structural changes, uncertainties from the economic, natural, political, technical and social environment were determined and examined in detail. The effects of uncertain influence factors on the power system were deduced via a sensitivity analysis with the help of an optimization-based investment decision model. One base scenario and multiple sensitivity scenarios were calculated. Thereby, fundamental driven differences between generation and storage investments were derived.

## INSTALLED CAPACITY CHANGE

sensitivity  $\triangleq$  low battery investment costs



## WHAT WERE THE RESULTS?

The higher the CO<sub>2</sub> price, the more OCGT and CCGT are installed. If the CO<sub>2</sub> price falls and the price of natural gas rises, lignite and hard coal-fired steam turbines are preferred to be build instead of gas turbines. In case of low battery costs, batteries appear optimal in terms of system costs.