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# How can conventional generation survive in Europe?



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# Understand the future: use KyPF

## Key features

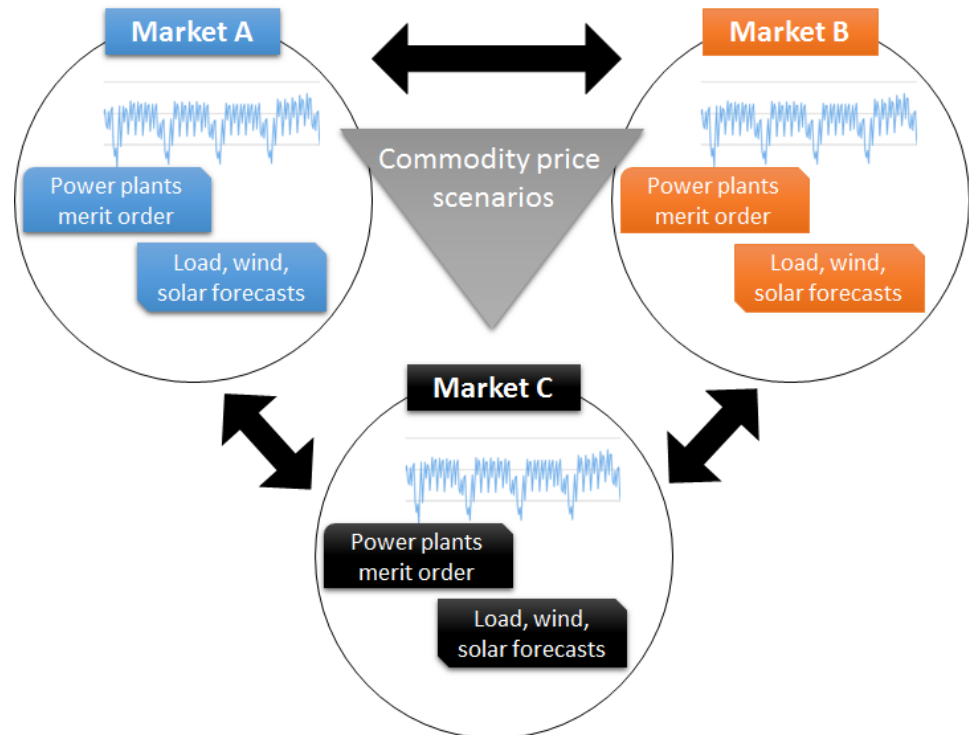
- Hourly power price (deterministic mode) or price distribution (stochastic mode)
- Detailed hourly dispatch of each individual power plant, considering efficiencies, start costs, availabilities, etc.
- Multi-market scenarios, including optimization of interconnection flows

## Key applications

- Investors, strategists: value deals, opportunities
- Power traders: forecast power prices
- Policy makers: understand impact of policy decisions

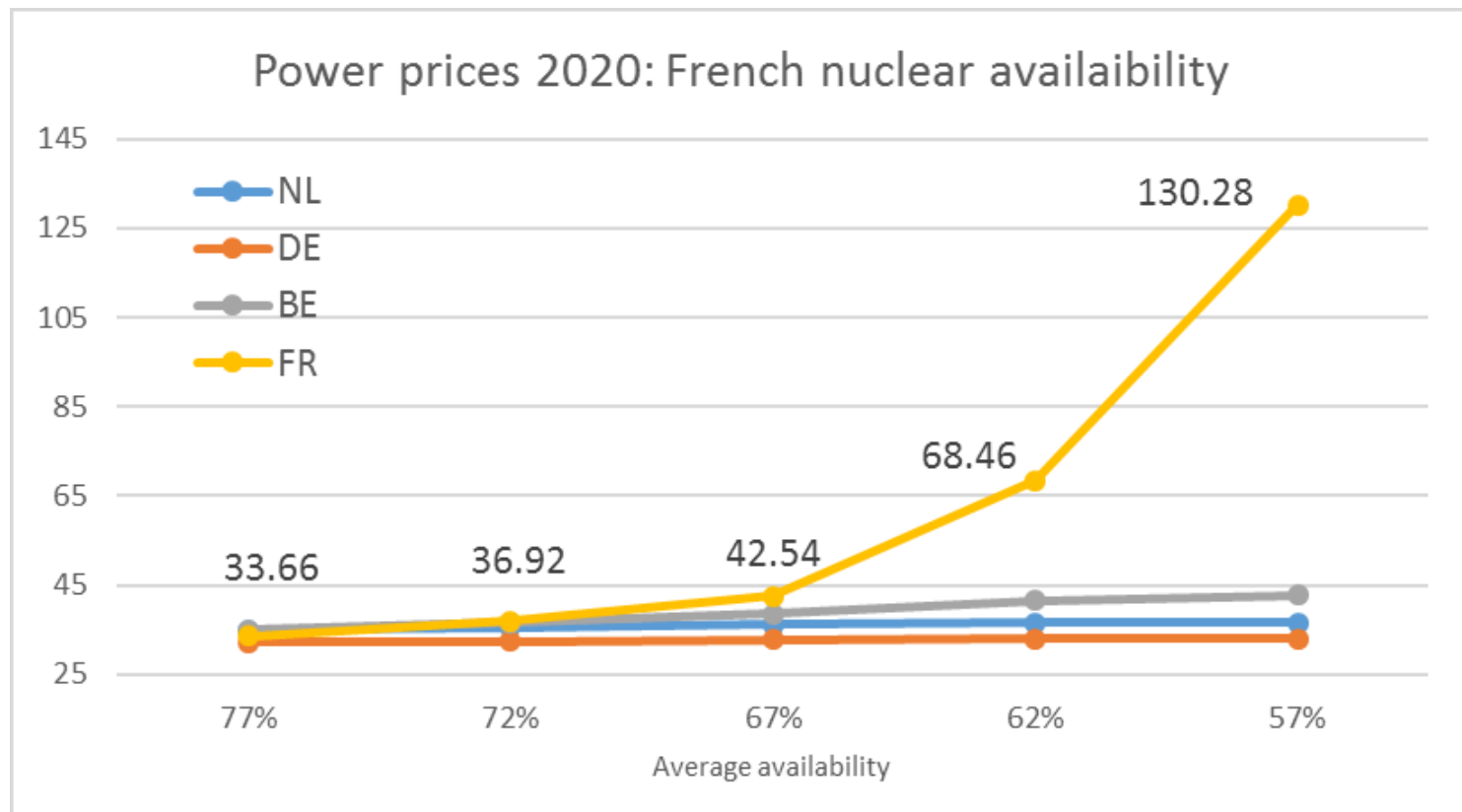
## Market study:

- Power market in 2020
- Germany, France, Netherlands, Belgium



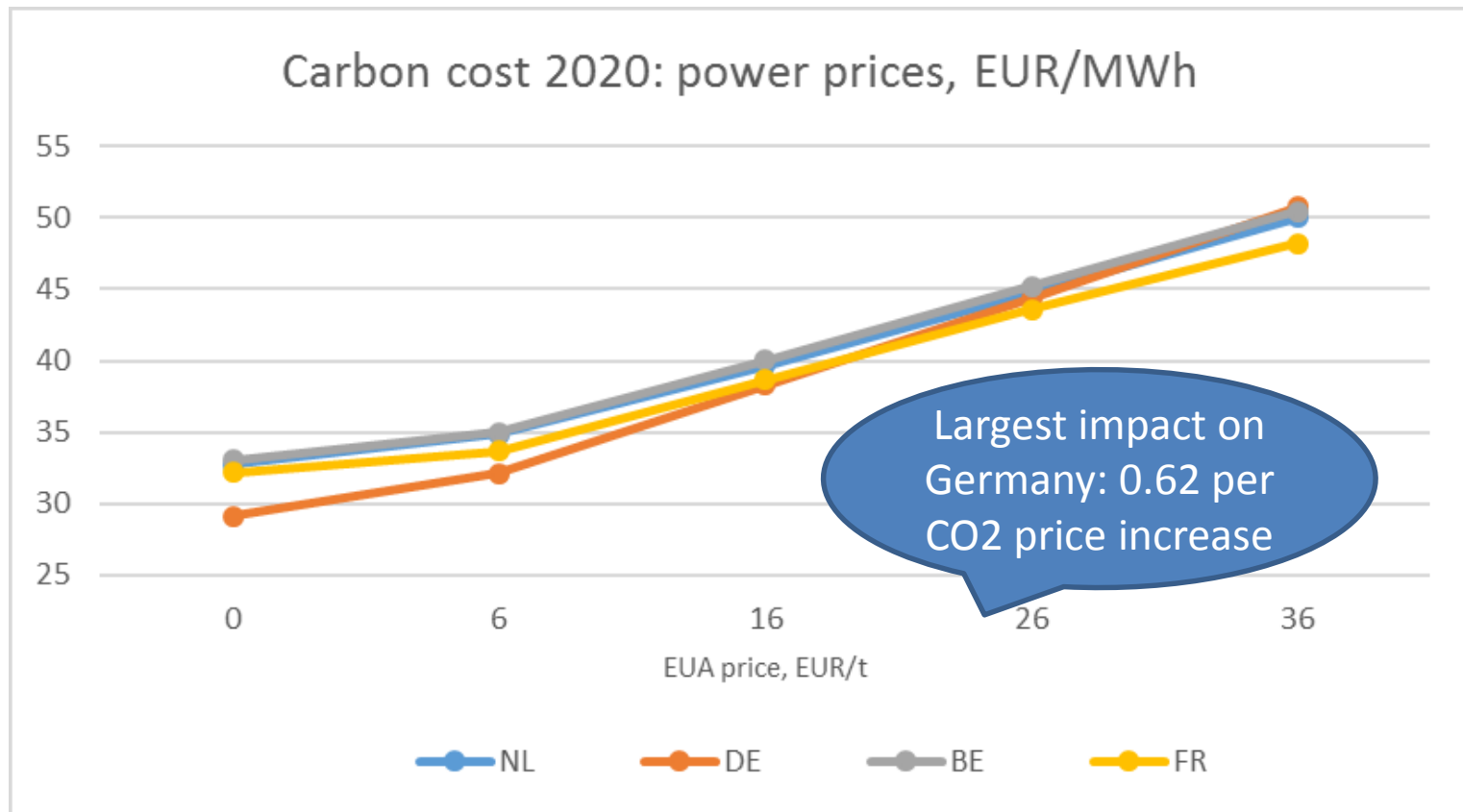
# Scenario: French nuclear availability

Base case: French nuclear availability 77%, more in winter than in summer. But inspections / maintenance may reduce this



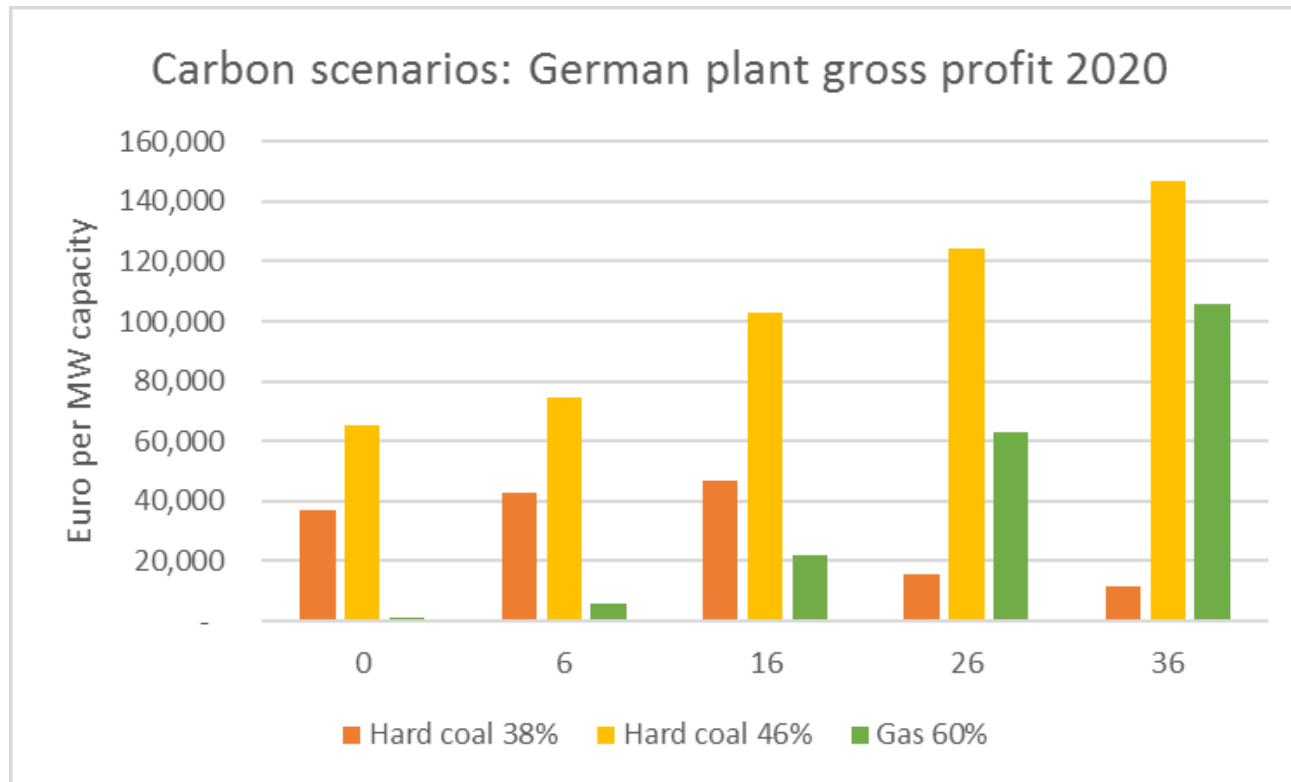
# Scenario: CO2 price

- Interest to revive the EU-ETS mechanism
- Much more effective than national green energy policies
- Paris agreement: reduction of carbon emissions is top priority



# Scenario: CO2 price

- Profitability depends strongly on carbon price levels
- Higher price beneficial for efficient gas, and also efficient coal
- Older coal (and lignite) automatically phased out



# KyPowerFundamentals: Monte Carlo simulations

## **Traditional approaches for fundamental modelling**

- A typical fundamental market model generates a single deterministic forecast
- Some models allow for user-defined scenario analysis

## **The next step in fundamental modelling**

- Integration of stochastic Monte Carlo simulation with fundamental model

## **The benefit of hybrid approach**

- More realistic variety of scenarios to assess market price uncertainty
- Better forecasts of prices and plant profitability
- More accurate assessment of flexibility value in the system