

END OF THE ENERGY CRISIS? OUTLOOK FOR NEXT WINTER - POWER

No power without gas



Tobias Federico
Montel German Energy Day

19th of April 2023
Düsseldorf

ONCE UPON A TIME....

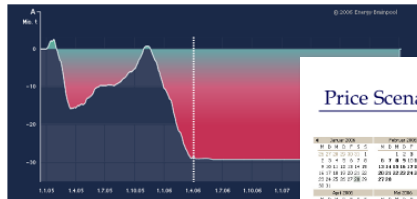


Focus on Germany:
Wind vs. Nuclear and Gas
Price Scenarios for 2006

Montel-Powernews Conference
FUNDAMENTAL PRICE DRIVERS 2006
Key Factors in Focus

Tobias Federico
Managing Director
Oslo, 5th April 2006

Emission Balance Deviation in Europe (EU ETS)



- Deviation from Normal Weather
- Variation from +15 Mt to -31 Mt CO₂

Price Scenarios in 2006

Scenario	Q1 2006	Q2 2006	Q3 2006	Q4 2006
Scenario 1	1.1	1.2	1.3	1.4
Scenario 2	1.5	1.6	1.7	1.8
Scenario 3	1.9	2.0	2.1	2.2
Scenario 4	2.3	2.4	2.5	2.6
Scenario 5	2.7	2.8	2.9	3.0
Scenario 6	3.1	3.2	3.3	3.4
Scenario 7	3.5	3.6	3.7	3.8
Scenario 8	3.9	4.0	4.1	4.2
Scenario 9	4.3	4.4	4.5	4.6
Scenario 10	4.7	4.8	4.9	5.0

- Market Concentration
- New Power Plants
- Wind vs. Nuclear & Gas
- CO₂ Emissions EU 25 in 2005
- Ukrainian Gas Dispute
- Summer & Winter 2006

Muscovitean Buffer Area

Increasing since
1667 until the end
of the Soviet Age



In 200 Jahren dehnt sich die russische Muscovitean-Buffer-Area über Europa aus.
Quelle: Fischer, J. von Lohmann: 'Muss die Muscovitean-Buffer-Area in Europa ausdehnen?'
Zweite Auflage 1991, S. 29f.

DO NOT FORGET !

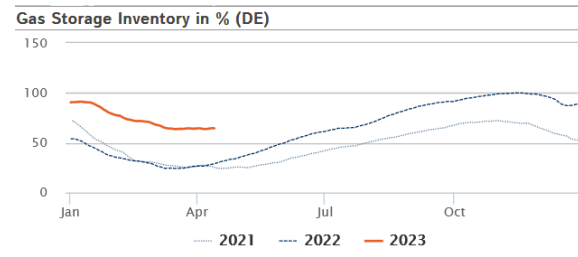
Capacity

- Currently Germany is not missing production capacity
- Due to the coal phase out, coal power plants were reserve capacity
- In the winter 2022/23 to biggest fear was missing fuel not secured capacity (at least in Germany)
- Germany has not capacity shortage it had an expected fuel shortage in the last winter
- Therefore shutting down the last nukes is not a big deal (beside the political discussions)

Fuel

- Germany needed to replace its Russian gas deliveries and ...
- ... to fill up the gas storage in the winter 2022/23.

- This process is still ongoing, but
 - Gas storage is at 65 % level



- Building up LNG capacities

Source: Montel Online

WINTER IS COMING AND WE ARE PREPARED

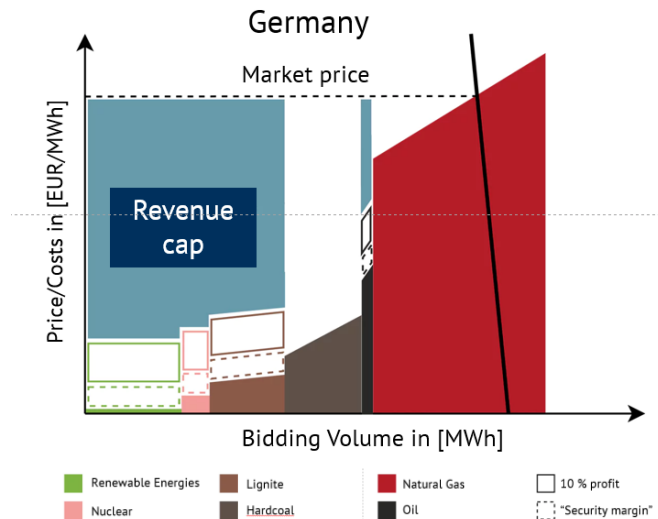


Source : HBO

THERE ARE A FEW THREATS

Politics...

- Revenue cap in place gives high insecurity in the market



- Good news: Power prices are so low, that the political pressure is gone
- Bad news: CfDs might come

...and politics

- Understanding market design:
 - Not speaking about power market design and the “Merit Order model”
 - The different market behaviour of a global LNG market compared to the pipeline gas business
 - “You can only play the LNG market correctly in case you can handle all the different overcapacities”*

Source: Montel Online

WITH THE NUKES GONE IN GERMANY, WEATHER DEPENDENT VOLATILITY WILL INCREASE

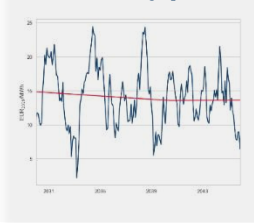
Our answer: calculating fundamental swarm scenarios

Variation of volatile model parameters

Fundamental swarm with $n > 1000$ scenario runs

Future distributions as results

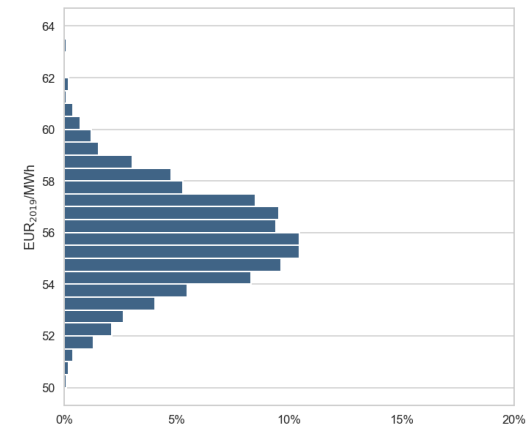
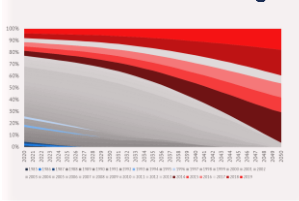
Commodity prices



Power demand



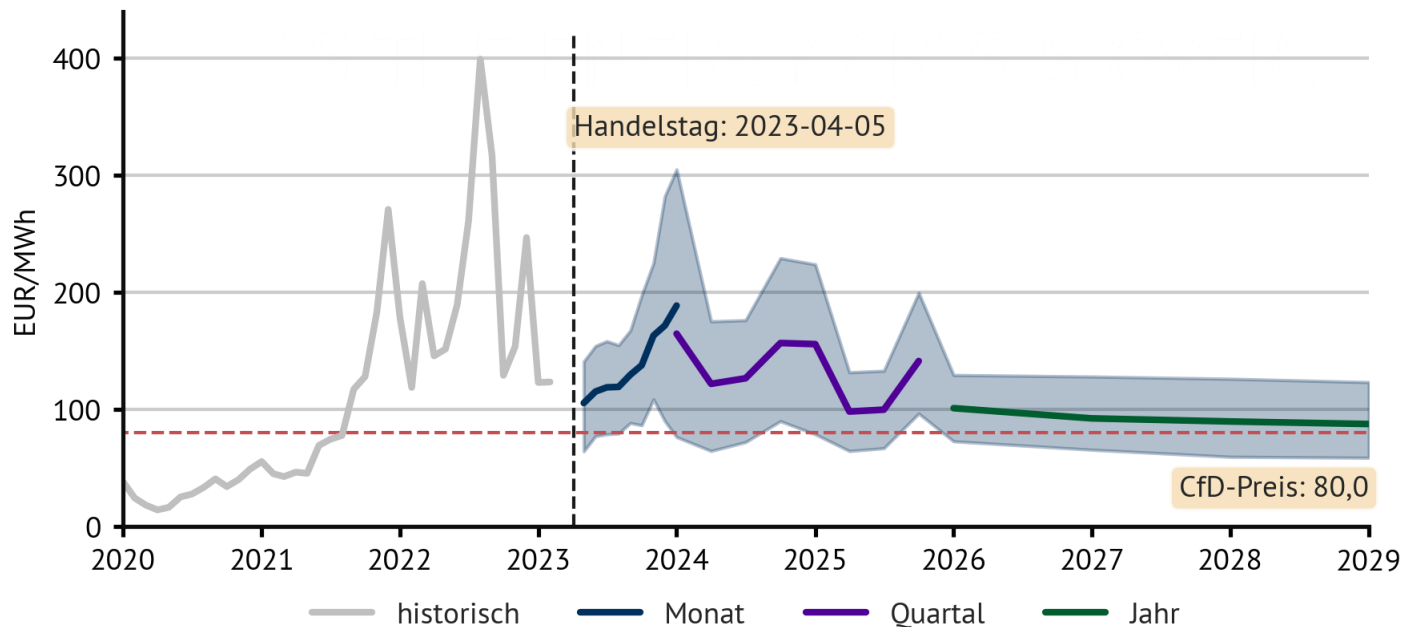
Weather years



Source: Energy Brainpool

DO NOT UNDERESTIMATE THE WEATHER RISK IN THE UPCOMING YEARS

- Output of 1.000 scenario runs for the capture rate for PV in Germany
- Based on the PFC from the 05.04.2023
- Compared to a assumed CfD price of 80 EUR/MWh



Source: Energy Brainpool

Thank you very much!

What questions do you have?

Tel.: +49 (0)30 76 76 54-10
Fax: +49 (0)30 76 76 54-20
www.energybrainpool.com
kontakt@energybrainpool.com