

DISENTANGLING THE GERMAN DISCUSSION ON CAPACITY MECHANISMS

Enerday 2013, Dresden
Jenny Winkler & Dogan Keles



UNTERSUCHUNGEN ZU EINEM ZUKUNFTSFÄHIGEN STROMMARKTDESIGN

What Lies "Beyond Capacity Markets"?

Delivering Least-Cost Reliability Under the New Resource Paradigm

Endbericht, März 2012

A "straw man" proposal for discussion, issued August 14, 2012

consentec

Versorgungssicherheit effizient gestalten –

Erforderlichkeit, mögliche Ausgestaltung und Bewertung von Kapazitätsmechanismen in Deutschland

Energiewirtschaftliches Gutachten zu den Erfordernissen zur Ausgestaltung des Marktdesigns für einen Kapazitätsmarkt Strom

Fokussierte Kapazitätsmärkte. Ein neues Marktdesign für den Übergang zu einem neuen Energiesystem

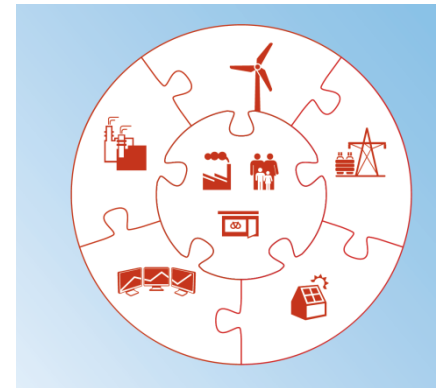
Studie für die Umweltstiftung WWF Deutschland

RAUE LLP

Berlin, 8. Oktober 2012

Änderungen an ein zukunftsfähiges Strommarktdesign

Änderungen des Markt- und Regulierungsdesign vor dem Hintergrund der Energiewende



Ein zukunftsfähiges Energiemarktdesign für Deutschland

Background

Capacity mechanism	Proposed by (examples)
Strategic reserve	Consentec, r2b
Capacity options	Ewi
„Focussed“ capacity market	WWF, RAP
Decentralised capacity market	VKU

- Capacity mechanisms currently under discussion in Germany and other European countries
- **But:** Questions have not yet been answered that need to be clear before introducing a capacity mechanism

Agenda

- Current and future capacity needs
- The functioning of the energy-only-market
- Further issues to clarified
- Conclusion

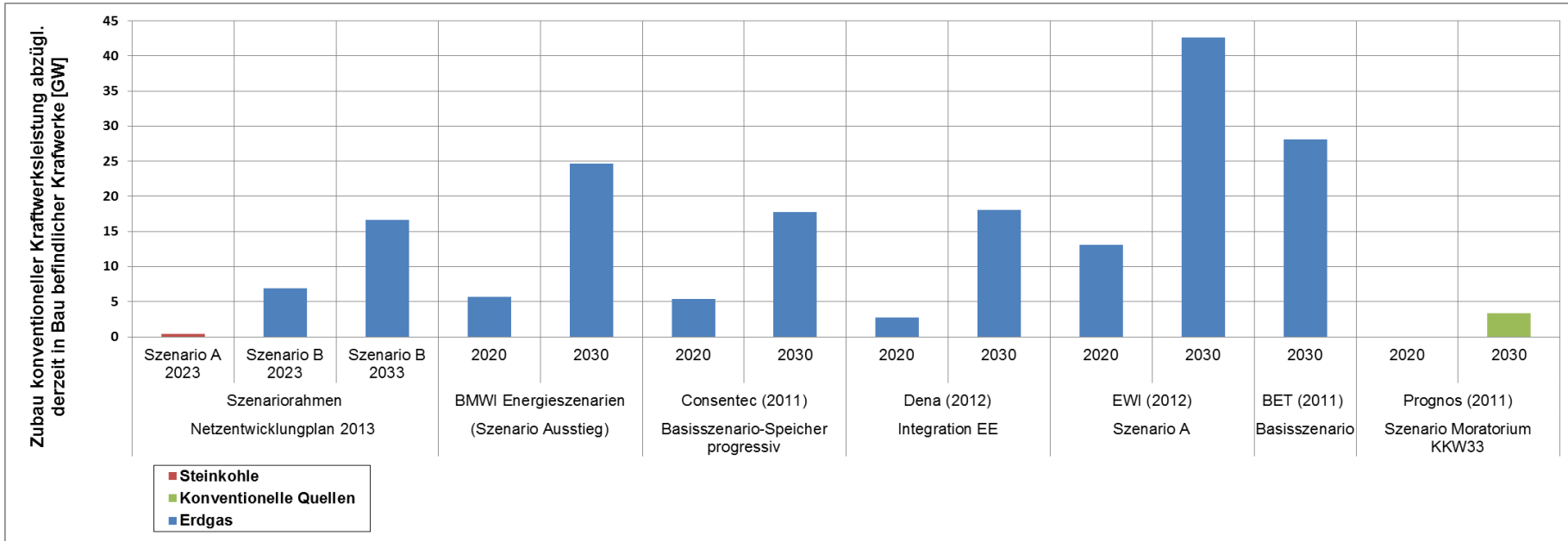
Uncertainties regarding current capacity needs

December 2011, 17:45

Peak load	81.2 GW
Estimated firm capacity (Analysis TSOs)	80.1 GW
Available capacity (reality)	96.7 GW

- Estimation of capacity highly dependent on assessment of contribution of different flexibility options (renewables, storage, interconnectors, demand side management) to firm capacity
- Currently no need for new capacities for Germany as a whole unless very conservative assessment is implemented

Future capacity needs



- Different studies and models come to divergent conclusions regarding future capacity needs (0-13GW for 2020)
- Estimation depends again on assessment of different parameters such as electricity demand, renewables deployment and different contributions to firm capacity
- Need for capacity \neq need for new power plants

Investment incentives in the energy-only market

- ‚Normal‘ pricing (supply > demand) based on marginal costs of most expensive power plant needed to cover demand
- ‚Peak load pricing‘: Prices above marginal costs in scarcity situations induce investment incentives

- Question: Can high scarcity prices be reached?
 - Studies conclude: Current low price levels show that these prices cannot be reached
 - But: Current low prices can also be explained by existing overcapacities due to European market coupling and increasing shares of renewables

- Question cannot be answered yet as most countries have started into liberalization with overcapacities and realized investments might not be purely market-based

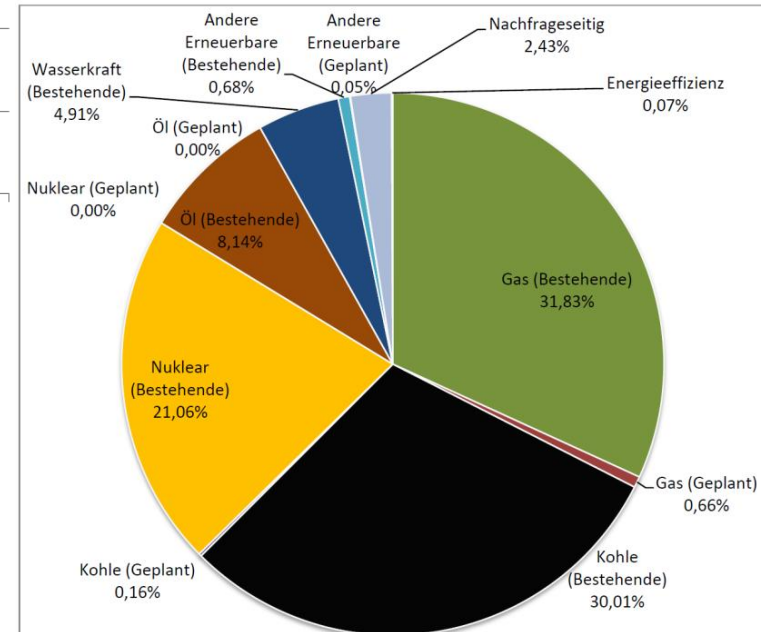
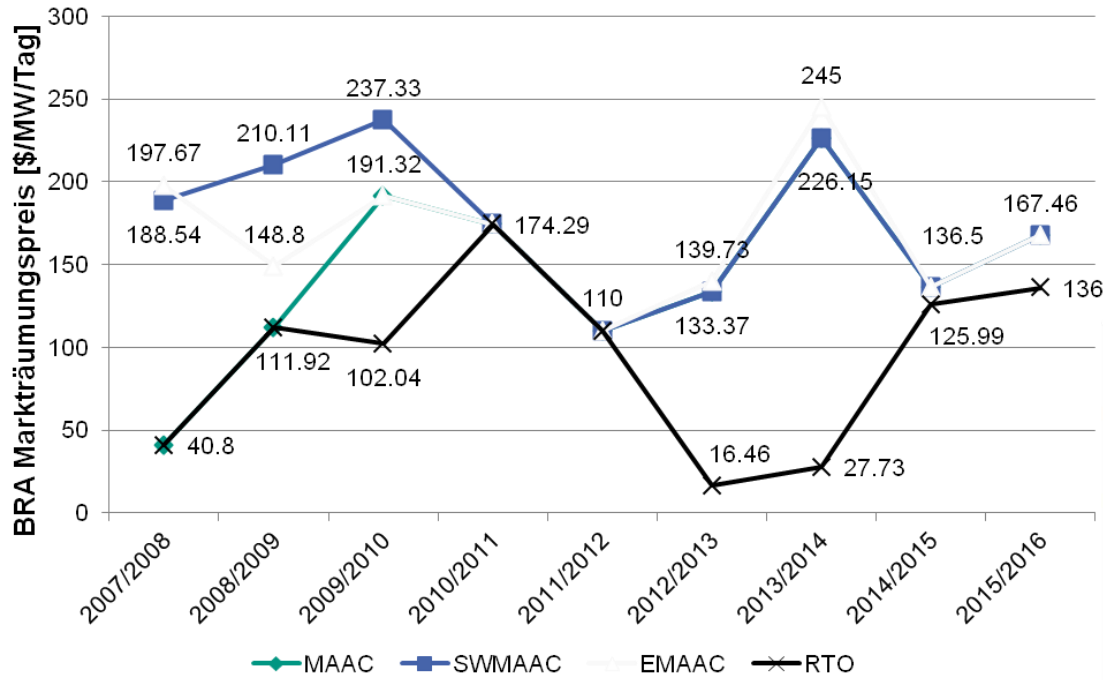
- European energy-only market cannot provide national security of supply

Further issues to be considered

- Unclear objective of introducing a capacity mechanism in Germany
 - Local scarcity in Southern Germany
 - Firm capacity for peak load
 - Transition to more flexible and cleaner power sector
 - Efficient design dependent on objective

- Effectiveness and efficiency of capacity mechanism
 - Energy-only market enables competition between different flexibility options, in a capacity mechanism this is more complicated
 - Influence on energy markets (reduced prices and volatility)
 - Potential high costs of ‚wrong‘ parameterization (e.g. inadequate estimation of capacity needs)
 - Investment incentives in capacity markets

Effects and challenges of implementing a capacity mechanism



Conclusion

- Capacity needs are unclear
 - Functioning of energy-only-market is unclear
 - Objectives are unclear
 - Design of efficient and effective capacity mechanism complex
- Before introducing a capacity mechanism **further research** to clarify these questions is necessary
- In the short term:
- Measures to improve the functioning of the energy market
 - possibly a more market-oriented design of the grid operators' winter reserve or strategic reserve as 'insurance' for the energy-only market

Thank you for listening!
Any questions?