Federal Ministry of Economics and Technology

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Generation adequacy and security of supply –Member State responsibilities in a regional context

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Brief historic review: Energy policy in Germany

1950 / 60	Hard coal production: Backbone for „Wirtschaftswunder“
1970 / 80	Nuclear power: „Replace-fossile-strategy“
1998	EU Liberalization of energy markets
2000	German Renewable Energies Act (EEG)
2002	German Nuclear Energy Amendment („Nuclear phase-out“)
2005	Start EU Emission Trading System ETS
2008	Record oil price July: 145 $/Barrel
2009	Second RUS-UKR gas crises
2010	German Energy Concept until 2050
2011	German Energy Package: Phase-out of nuclear energy by 2022

Energy Concept: ambitious targets (selection)

	today	2020	2030	2040	2050
Reduction in greenhouse gas emissions (base year: 1990)	- 23 %	- 40 %	- 55 %	- 70 %	- 80 %
Share of renewable energies in total final energy consumption	13 %	18 %	30 %	45 %	60 %
Share of renewable energies in electricity consumption	22 %	35 %	50 %	65 %	80 %
Reduction of primary energy consumption (base year: 2008)	- 6 %	- 20 %			- 50 %

Challenge: SoS requires non-fluctuating capacity

Background

- 8 NPP shut down in 2011, remaining 9 NPP follow from 2015-2022
- Electricity produced from renewables is volatile

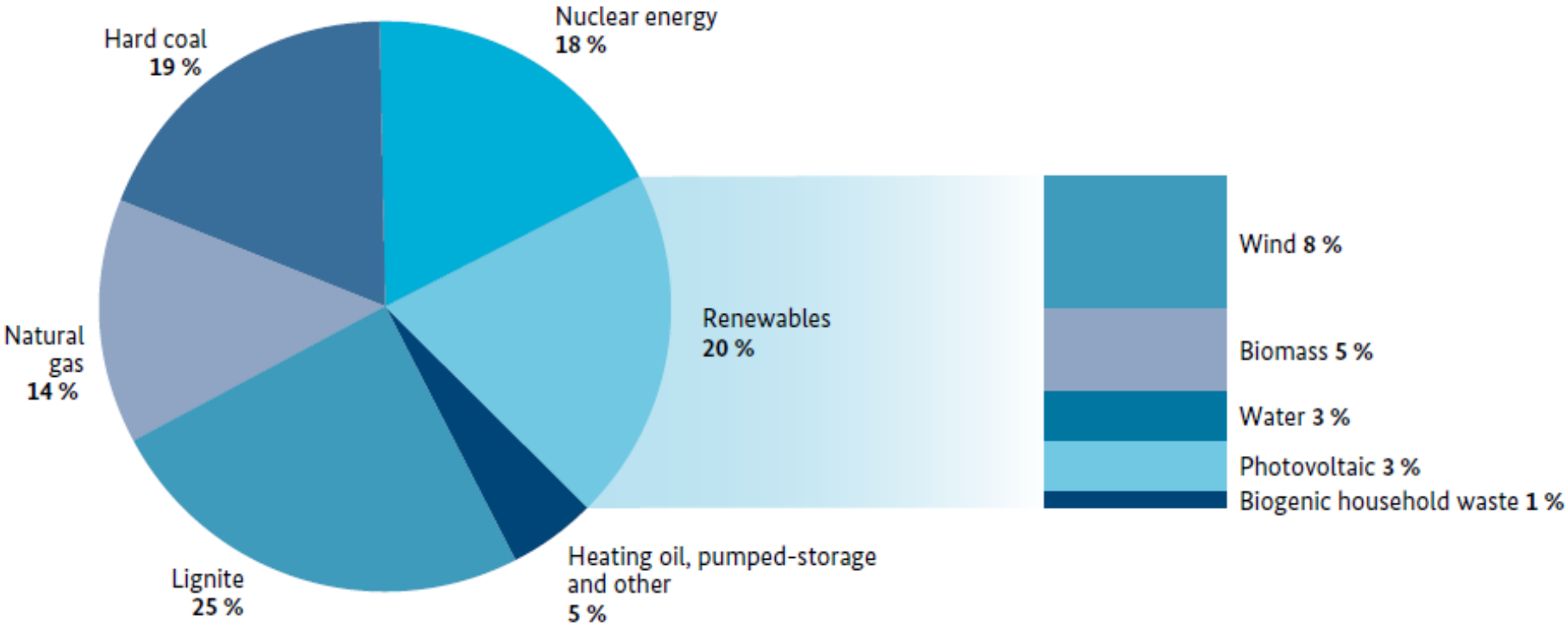
Short-term challenge

- Security of supply in the upcoming winter (reserve capacity needed)

Mid-term challenge

- Profitability of conventional power plants, i.e. new and existing plants
- Ongoing discussion about **capacity markets** in Europe

The Electricity production (2011) illustrates the challenge



Source: Working Group on Energy Balances (AGEB), German Energy and Water Industry Association (BDEW)

German Interconnectors

Net Transfer Capacities (NTC) between Germany and its neighbours in winter 2010/2011* (MW)

	To Germany	From Germany
Austria	2 000	2 200
Czech Republic	2 300	800
Switzerland	3 500	1 500
France	2 700	3 200
Luxemburg	N/A	980
Netherlands	3 000	3 850
Denmark West	1 500	950
Denmark East	585	600
Poland	1 100	1 200
Sweden	610	600
Total	**17 295**	**15 880**

*The NTC values represent an ex-ante estimation of the seasonal transmission capacities of the joint interconnections on a border between neighbouring countries, assessed through security analyses based on the best estimation by TSOs of system and network conditions for the referred period.

The benefits of the IEM

- open, integrated and flexible energy markets
- more choice for consumers
- competitive and market-based pricing
- growing price convergence through market coupling
- cooperation in external energy relations
- …

Cross-border trade in electrical energy…

- "telescopes" the respective Member States´ merit orders, thereby
- increases allocation efficiency in the utilisation of power plants,
- helps reducing electricity prices,
- triggers innovation,
- …

But does the EOM determine a reliable level of capacity?

Cramton/Stoft 2008:

(1) “Those who believe an energy market can solve the adequacy problem have simply misunderstood the economic theory of optimal investment.”

(2) “In a competitive market, optimal investment has nothing to do with reliability.“

What can Member States do to strengthen system adequacy?

Cramton/Stoft 2008:

(3) “Of course if reliability is sold as a product, so that the customer can pay more to gain reliability, the market can answer the reliability question.”

But can Member States do so on their own?

- Member States action should follow regionalisation patterns, i.e. Member States should cooperate regionally in
  - evaluating their need for capacity
  - designing possible capacity mechanisms
  - analysing the interaction of possible capacity mechanisms

Potential of the Regions

- Member States could agree regionally on a
  - common minimum level of security of supply,
  - coordinated action in connection with generation adequacy (e.g. coordinated monitoring),
  - joint risk assessments.

What could the European Union do?

The EU could help developing a framework that facilitates

- regional coordination between Member States
- regional common adequacy strategy-building between Member States

Thank you for your attention!