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ENERGYECONOMICS
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The German Power Market 2.0

Session 2: Adapting liberalised power markets
– Minor tweak or major overhaul?

Dr. Marco Nicolosi

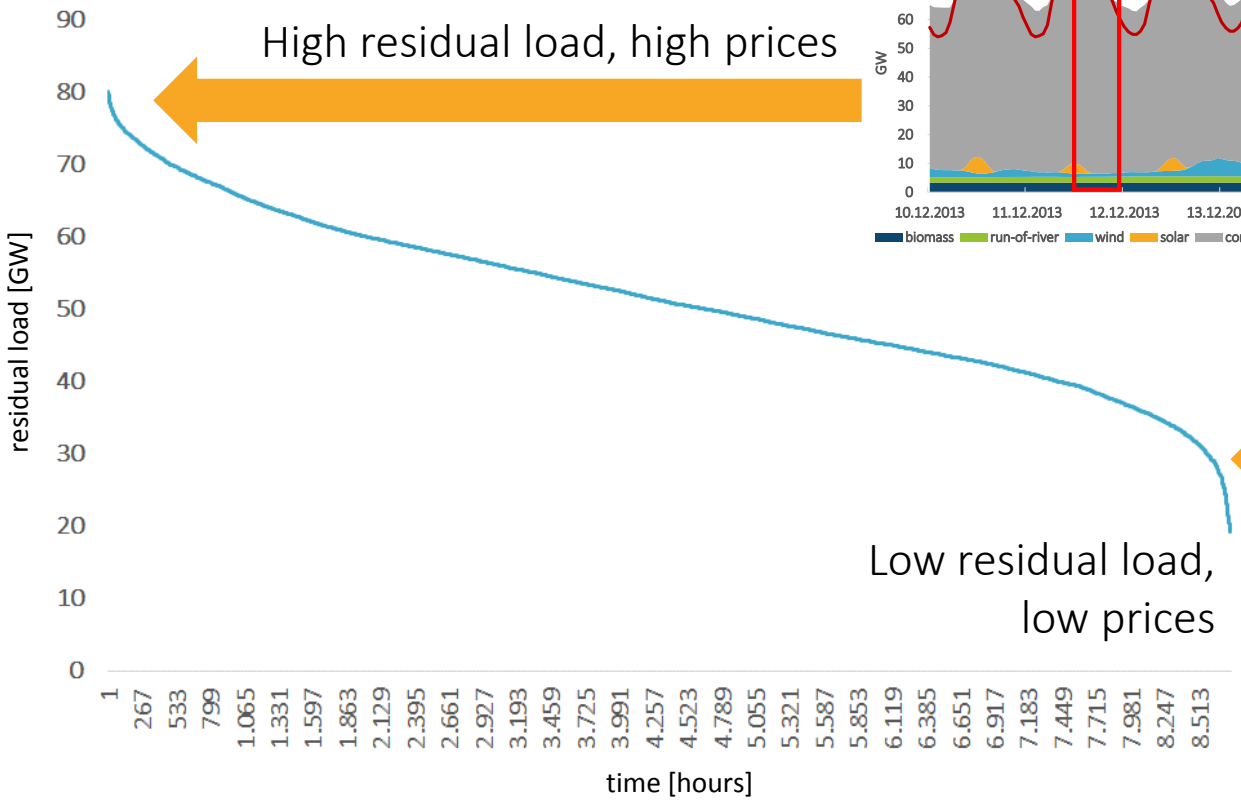
IEA Workshop: Renewables in the Mainstream

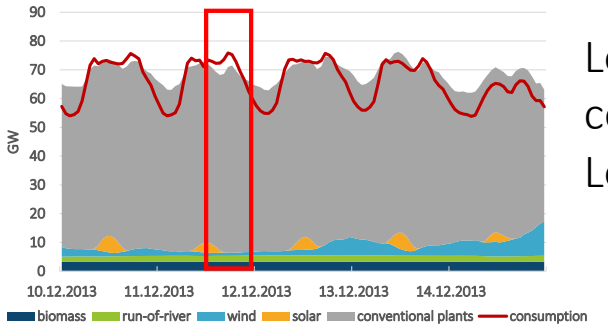
Paris, March 24th 2015

Take-aways

- A flexible power market can guarantee security of supply and support renewable integration simultaneously
- Some flexibility options can increase the market value of variable renewables
- To achieve a level-playing-field for flexibility options, barriers and price distortions need to be removed
- A capacity reserve can secure the transition period until the market is sufficiently flexible

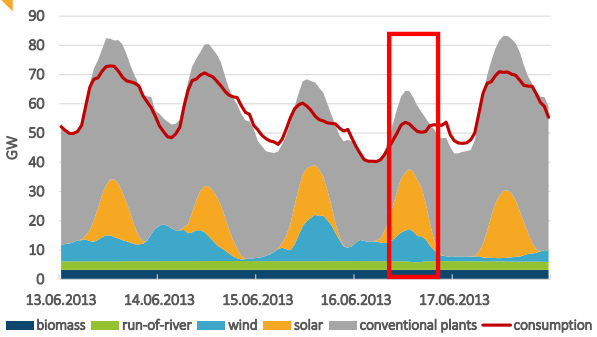
Two sides of the challenge





Low wind feed-in,
cold winter evening:
Low RES, high load

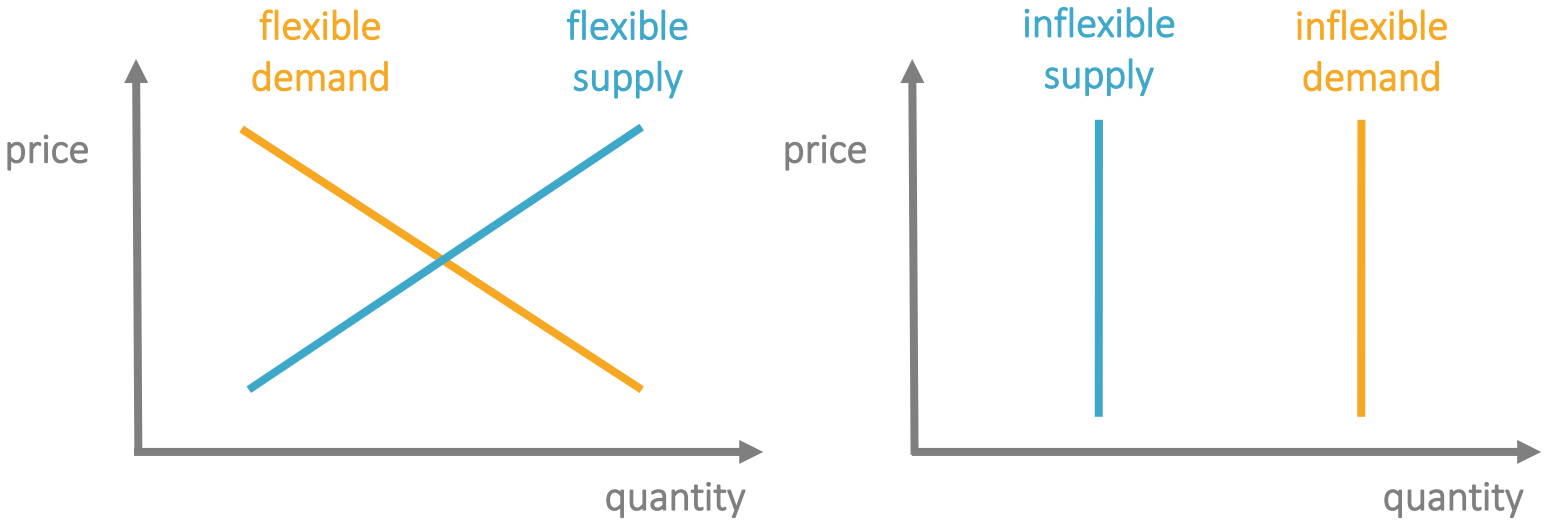
Windy, sunny
Sunday noon:
High RES, low load



Source: Data from Entso-e (2013) and EEX (2013)

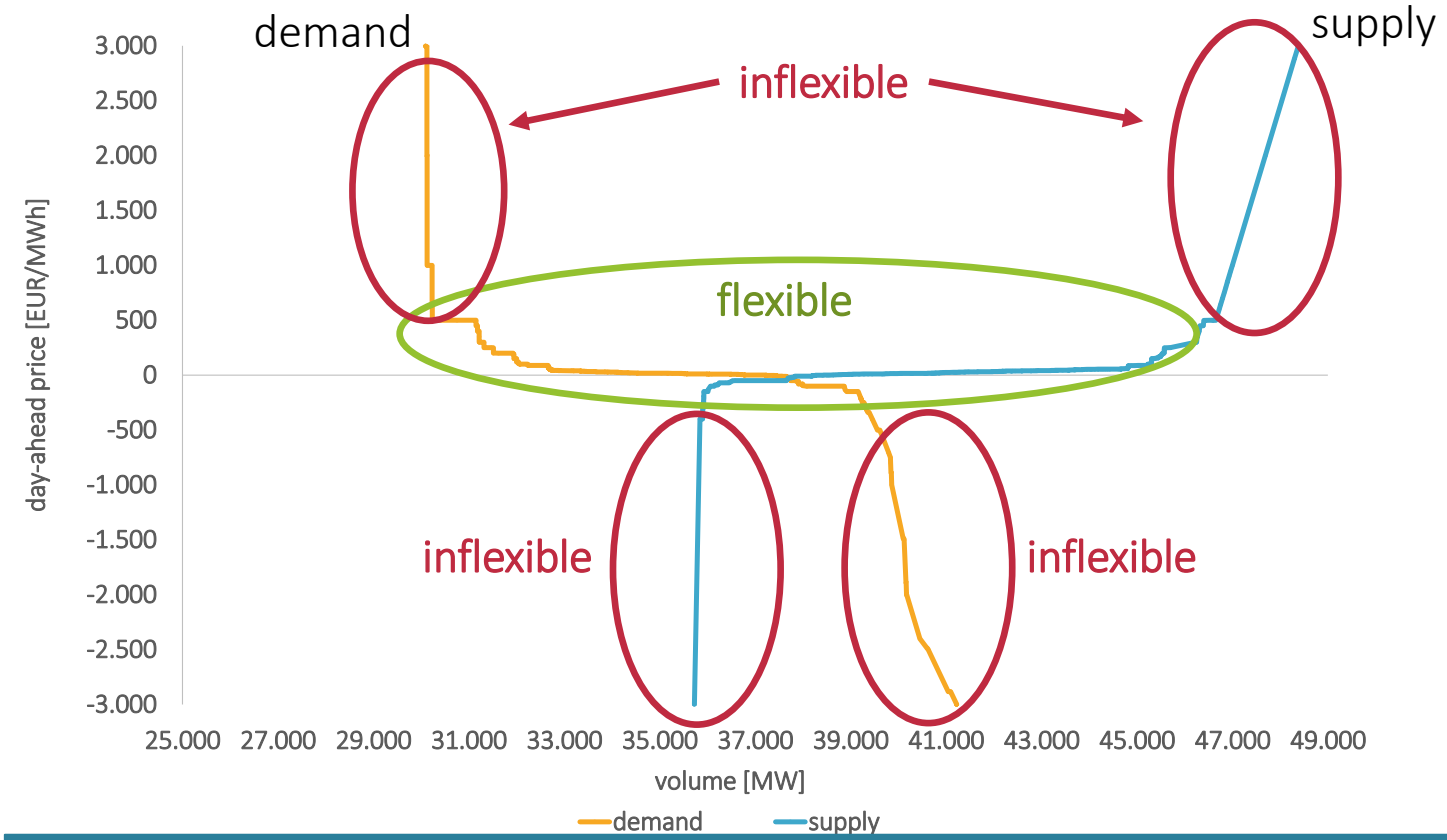
Definition of flexibility

- Finding a match between demand and supply requires ‘flexibility’
- Flexibility adds the time dimension to the static concept of the economic term ‘elasticity’



Sufficient flexibility in relevant areas of the supply and demand curve guarantees security of supply

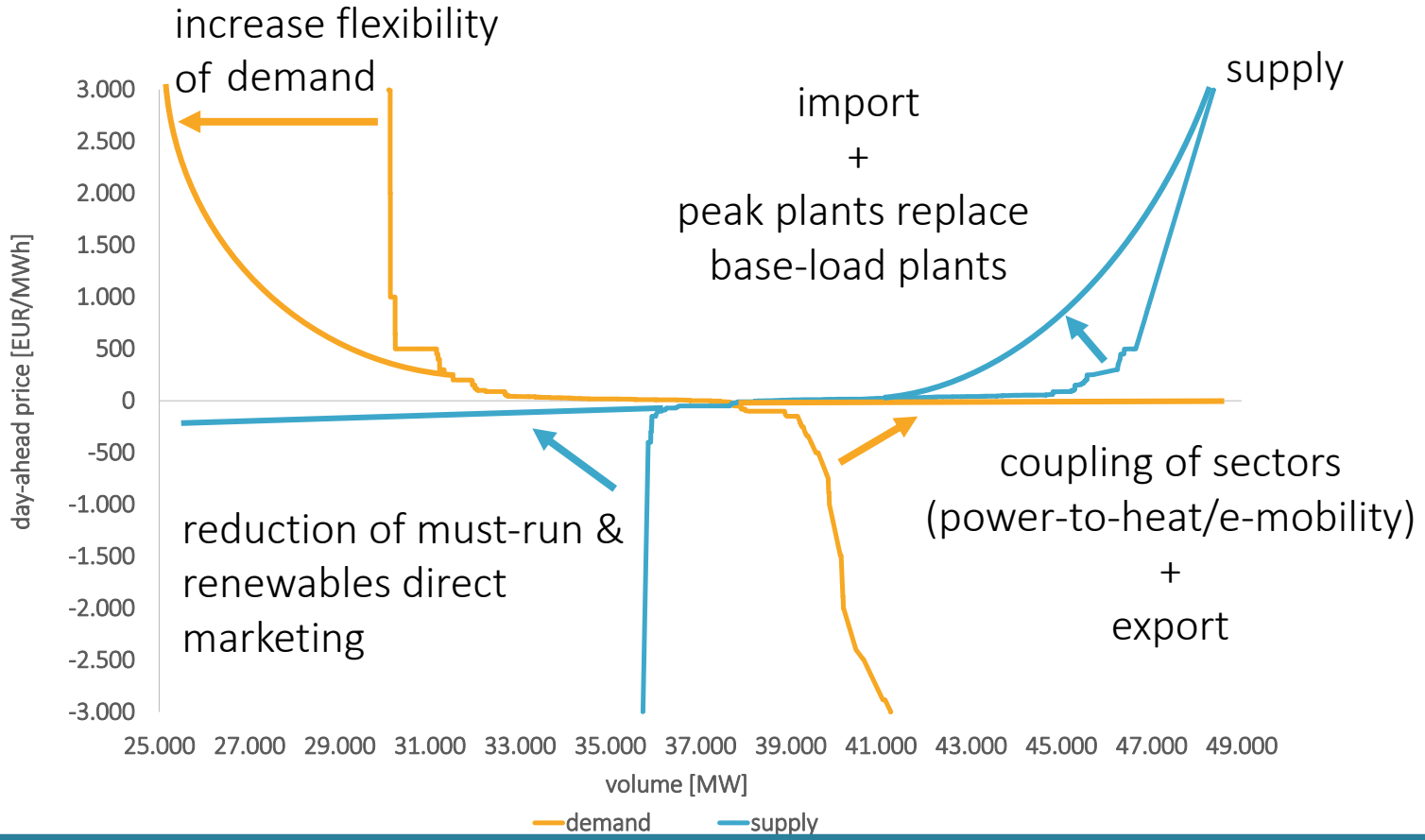
Flexibility supports security of supply and renewables integration I



- Some areas of the supply and demand curve are inflexible
- Inflexible areas could (theoretically) lead to a mismatch

Source: Own illustration, Data from EEX (2013).

Flexibility supports security of supply and renewables integration II



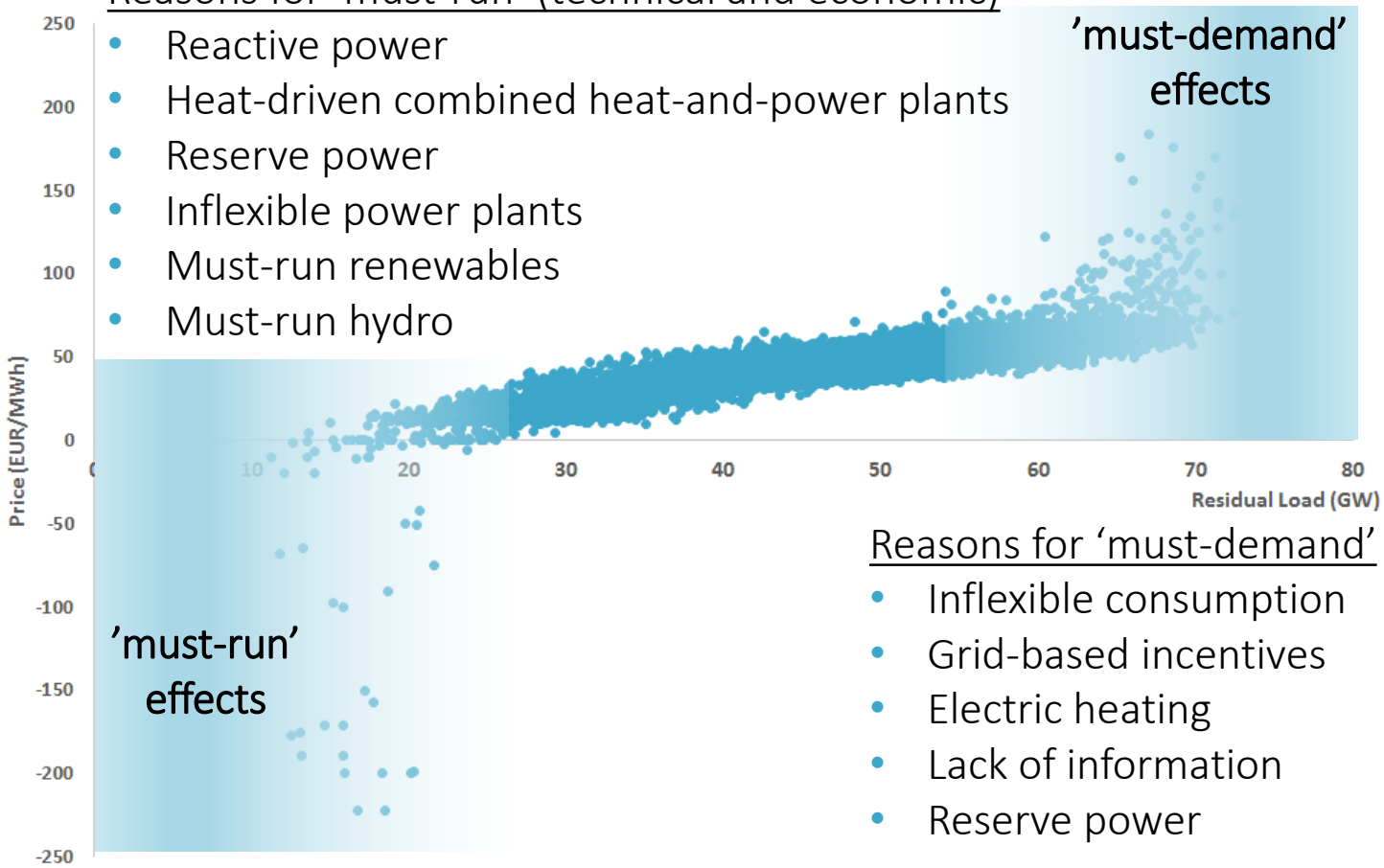
- An increase in flexibility leads to security and more meaningful price signals
- More flexibility options are available than the energy transition requires

Source: Own illustration, Data from EEX (2013).

Market effects of barriers

Reasons for ‘must-run’ (technical and economic)

- Reactive power
- Heat-driven combined heat-and-power plants
- Reserve power
- Inflexible power plants
- Must-run renewables
- Must-run hydro



Reasons for ‘must-demand’

- Inflexible consumption
- Grid-based incentives
- Electric heating
- Lack of information
- Reserve power

Reduce barriers to flexibility

Market design

- Open reserve power markets
  - Short-term auctions & products
  - prequalification
- Improve balancing responsibility
- Avoid price caps
- Competitive wholesale markets
- Enable efficient cross-border trade
- Avoid explicit capacity remuneration, which weakens price signal

Regulatory design

- Adjust implicit incentives for privileged consumers (e.g. grid tariffs & RES support) to react on wholesale power price
- Increase combined heat-and-power flexibility
- Avoid price distortions in all policies
- Enable renewable market access
- Provide reactive power must-run-free

In a nutshell

- Security of supply and RES-integration require flexibility
- Sufficient flexibility potential is available to allow for market-based competition
- Competitive and well connected markets are a great and efficient source of flexibility
- The EOM incentivises the optimal flexibility mix on the basis of reduced market and regulatory barriers
- Capacity markets are likely to create path dependencies and regulatory uncertainty, while reserve mechanisms are reversible, once the market is sufficiently flexible

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