Market integration of renewables

Challenges facing traders

DANSKE COMMODITIES
Bo Tranberg
PhD Student
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We trade energy all across Europe and connect customers to the opportunities of the European energy market.

Trading in 30+ countries

- Power Purchase Agreements (PPAs) for renewable energy production and active portfolio management.
- Reduced market risk for investors and asset owners.
- Certificate Management to ensure optimal value for the customer.
- We offer various solutions to renewable assets.
- Balancing management by optimising forecasted production using our 24/7 Intraday trading team.
1. DECREASING SPOT PRICE

2. SHORT TERM: FLEXIBILITY

3. LONG TERM: RISK MANAGEMENT
Increasing renewable generation leads to decreasing spot price
Volatility in energy prices is the basis for energy trading. This volatility is created by different factors:

- Interruptions and outages
- Fuel prices (OPEX)
- Energy production mix
- Weather conditions
- Technology
- Consumption patterns

**PRICE VOLATILITY**

**SPOT PRICE** NOV 2015 - JUNE 2016
1. DECREASING SPOT PRICE

2. SHORT TERM: FLEXIBILITY

3. LONG TERM: RISK MANAGEMENT
Need for flexibility: increasing volume on intraday markets

Trends:
- Value of flexibility increases
- Shorter lead times – from hours to minutes
- Need for easier participation in reserve markets
1. DECREASING SPOT PRICE

2. SHORT TERM: FLEXIBILITY

3. LONG TERM: RISK MANAGEMENT
Production mix anno 2015

**ENERGY PRODUCTION MIX**
EUROPEAN AVERAGE, 2015

- Coal: 7%
- Gas: 13%
- Other fossil fuels: 26%
- Nuclear: 15%
- Wind: 8%
- Solar: 2%
- Other renewables: 29%

All data provided by ENTSO-E, 2016

**ENERGY PRODUCTION MIX**
SELECTED COUNTRIES, 2015

[Bar charts and maps showing energy production mix for selected countries in 2015]
Risk management: hedging through portfolio effects
Thank you!