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# Heiskanen Power MARKET UPDATE

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# Agenda

- TII – Trading and Industrial Intelligence
- Nordic power market
  - Key drivers
  - Recent development
- Conclusions

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# Trading and Industrial Intelligence (TII)

– centralised portfolio management and trading

## Divisions:

Power

Heat

ESD

Russia\*

TII

## Role:

- One market view covering all time horizons
- Hedging of group level result (not only electricity price)
  - proposal for mandates and references
  - development of hedging strategy and execution of actual hedges within set mandate
- Integrated fuel procurement (excl. local fuels)
- Environmental value trading
- Proprietary trading

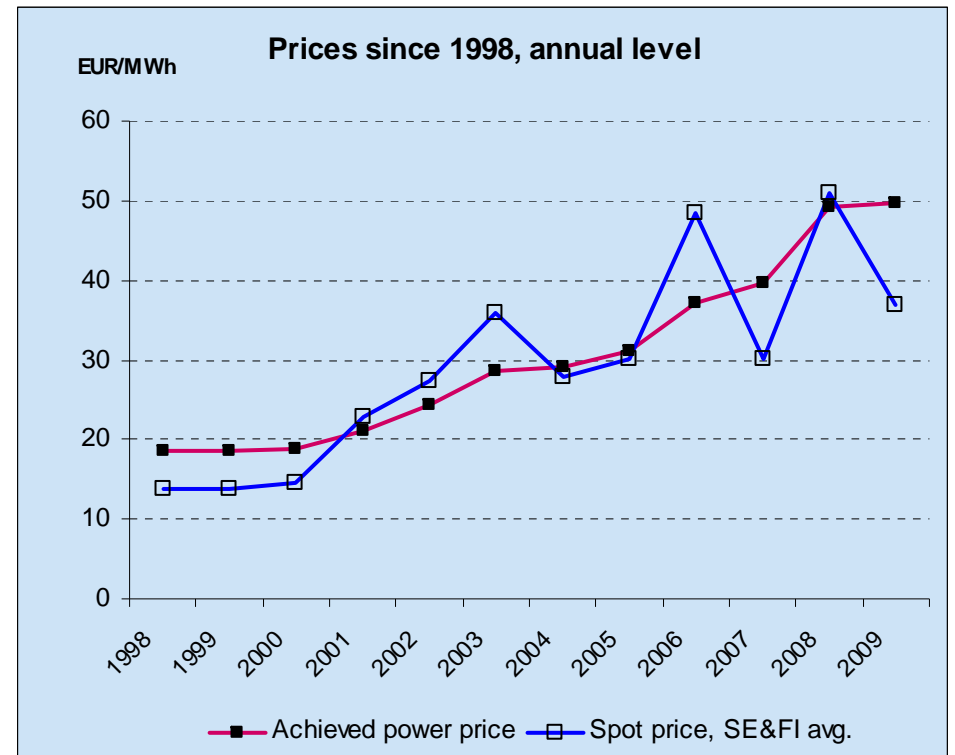
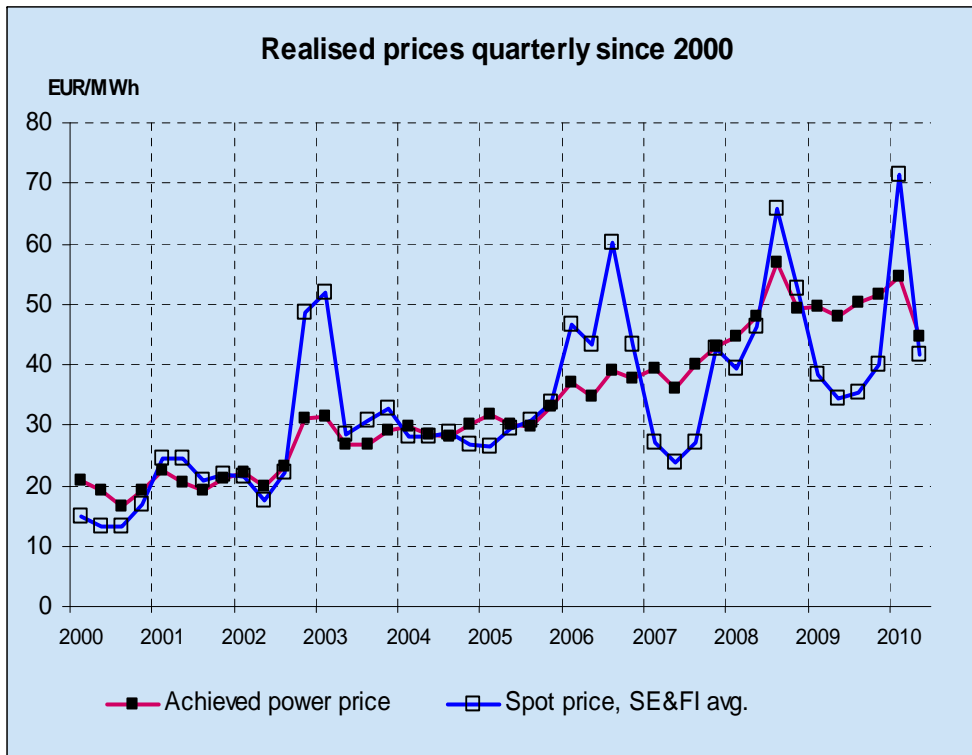
**Right big picture with outstanding insights**



**Achieved power price**

\*) In Russia, electricity derivatives market was launched on June 21, but it is still illiquid

# The right big picture – achieved power price is the prime goal



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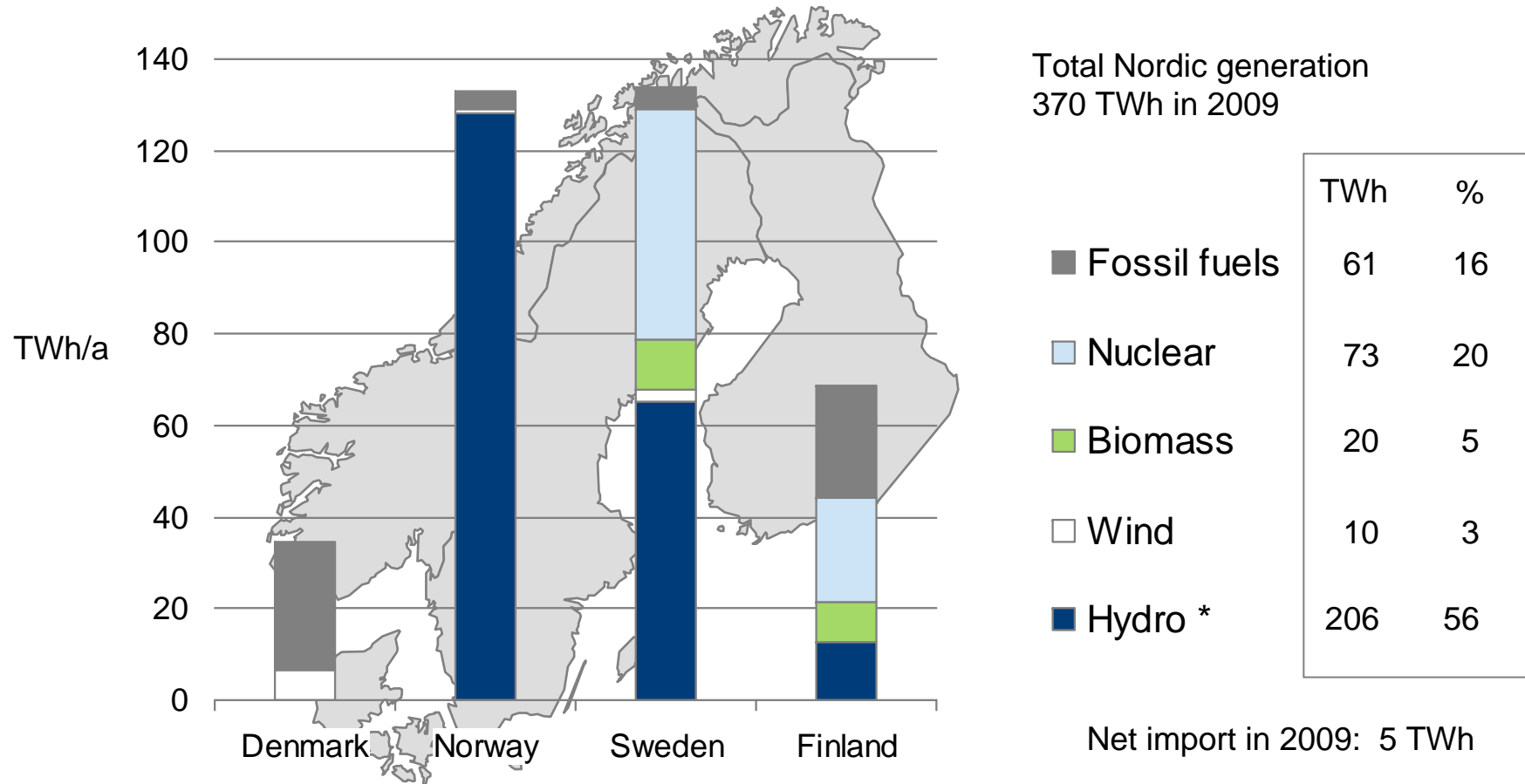
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# Nordic power generation

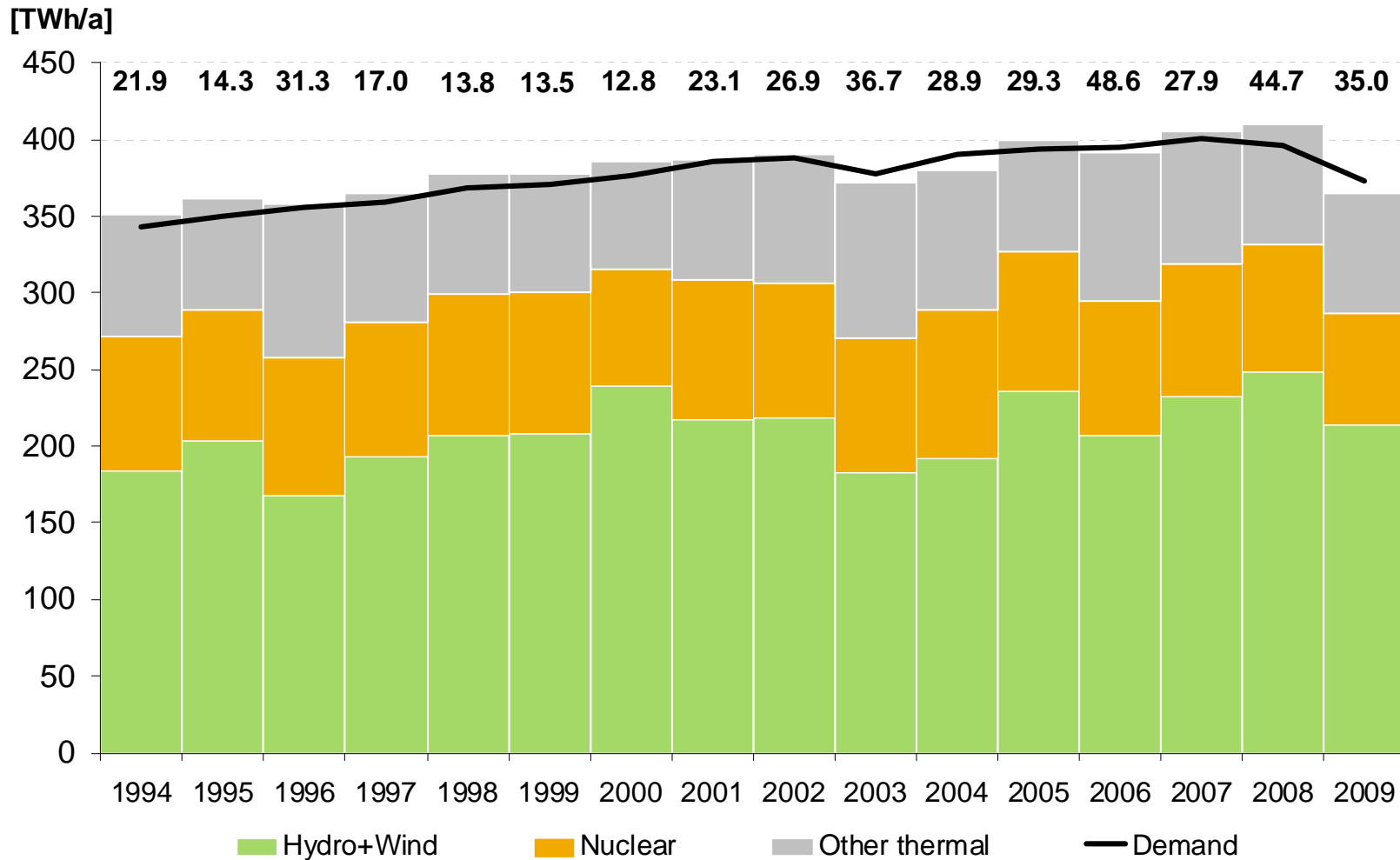
– dominated by hydro, but fossil needed



Source: ENTSO-E Memo 2009, wind generation Eurostat

\*) Normal annual Nordic hydro generation 200 TWh, variation +/- 40 TWh.

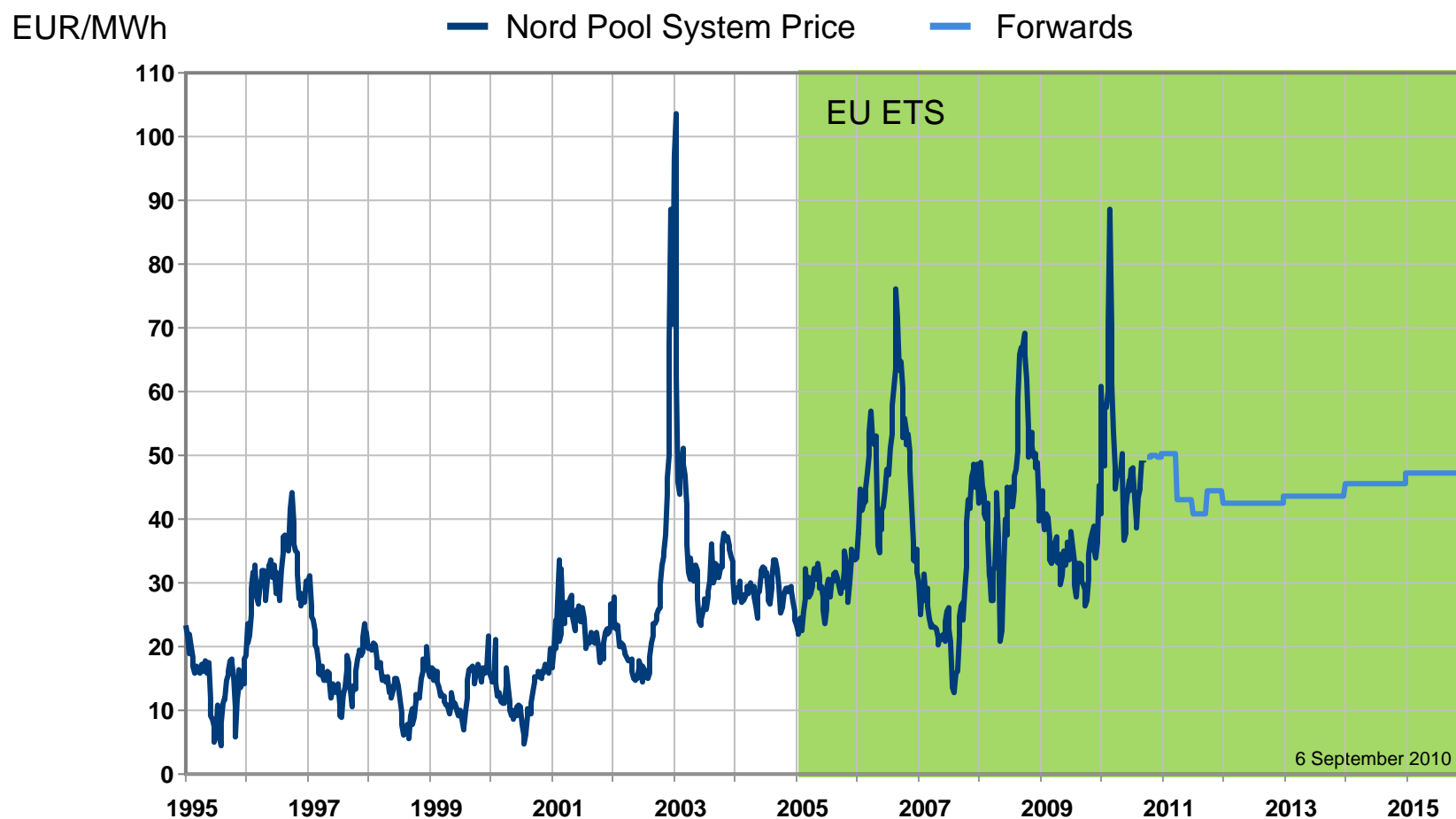
# The need for condensing power and import depends on hydrological situation



# Hydro balance affects the Nordic spot

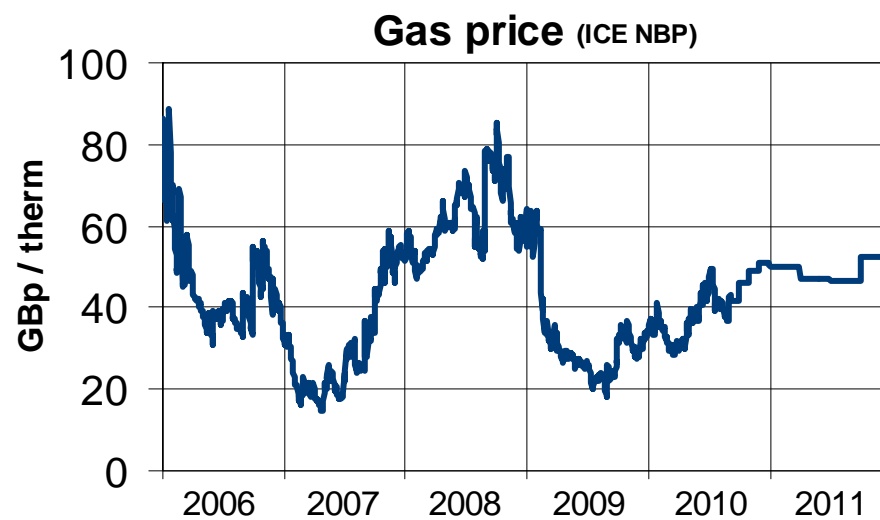
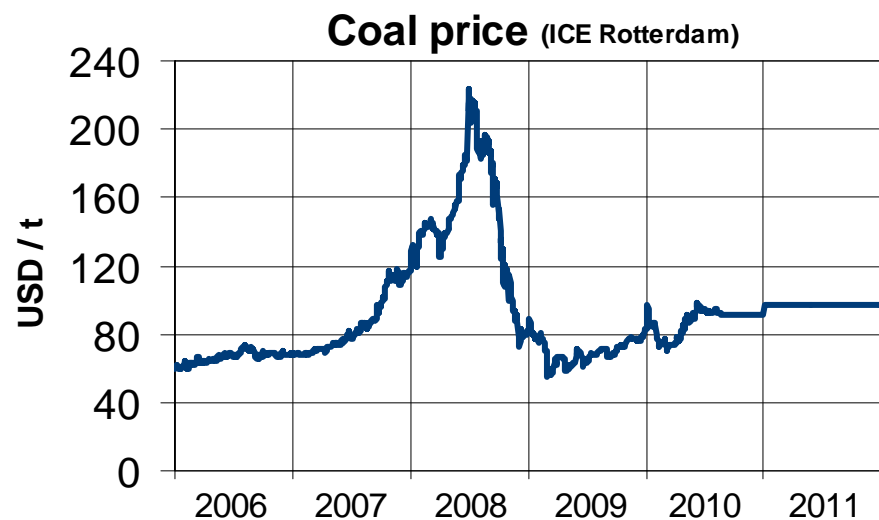
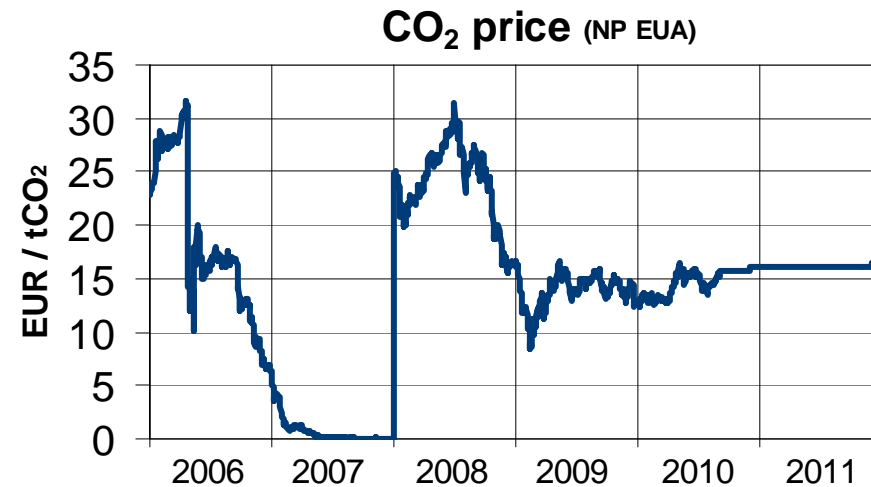
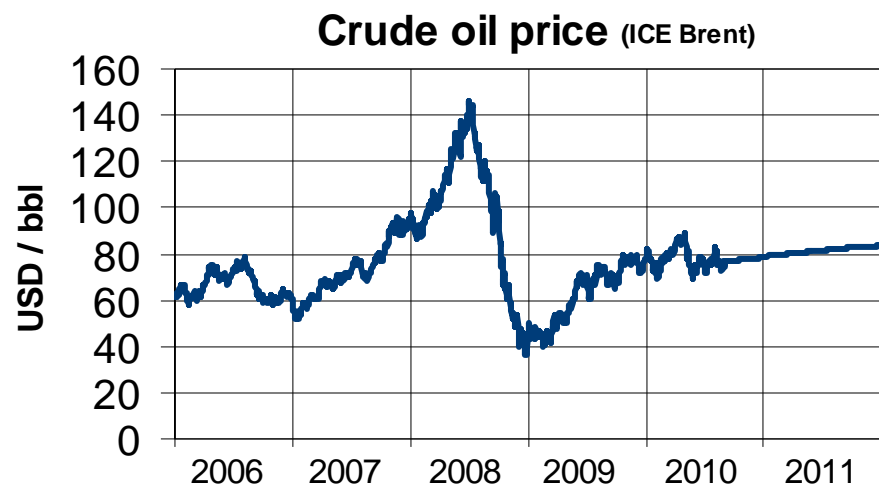


# Volatility in Nordic power price has increased after the start of European emissions trading



Source: Nord Pool

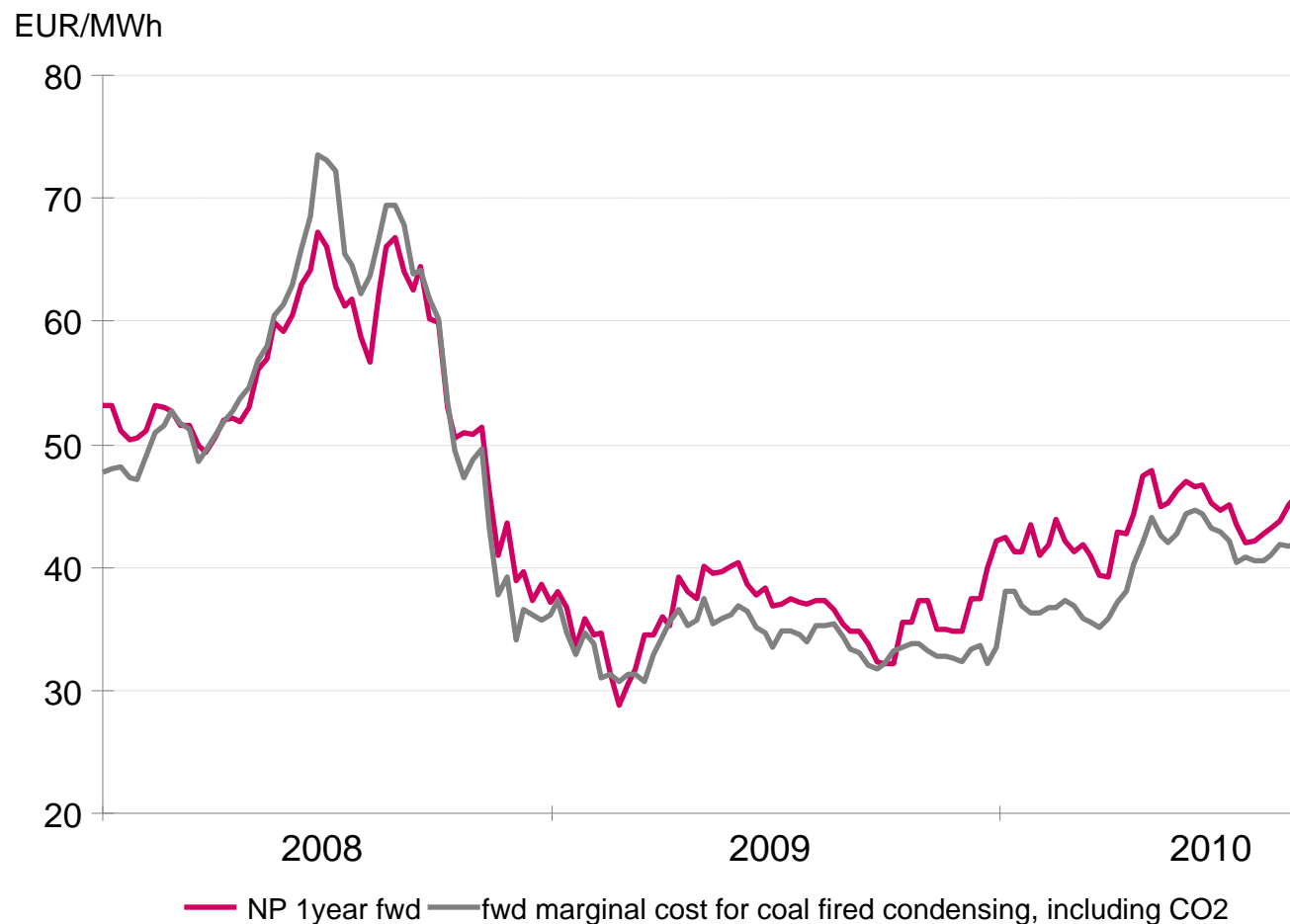
# Fuel and CO2 allowance prices



Source: ICE, Nord Pool

Market prices 6 September 2010; 2010-2011 future quotations

# Nord Pool forwards have followed the (clean) SRMC for coal condensing power



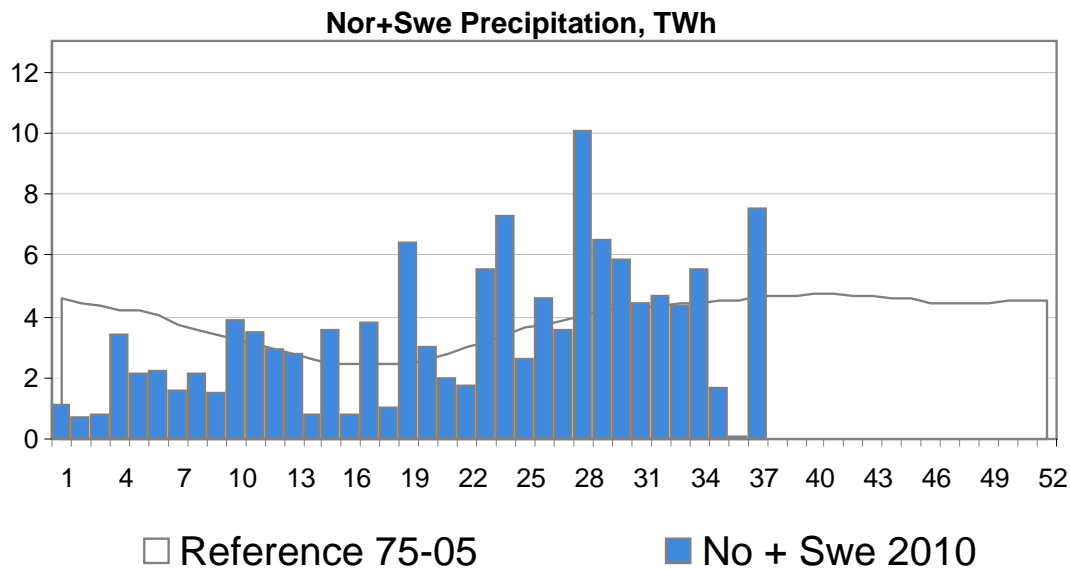
Note: Thermal efficiency 38%, hard coal with 7.1 MWh/ton energy intensity (25.6 GJ/ton)

0.9 tons of CO2 per MWh electricity. Data to 30 Apr 2010, Bloomberg. Weekly average prices.

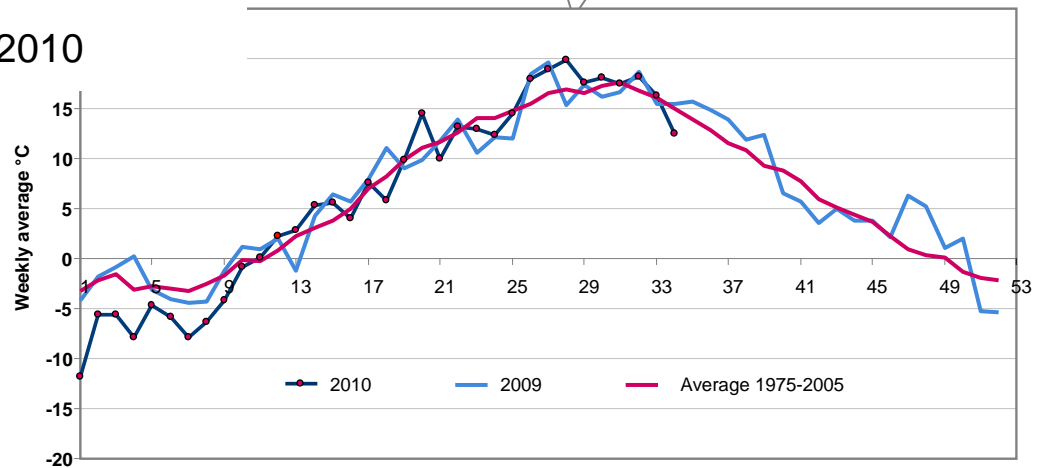
# Nordic spot price deviates from SRMC for coal mainly due to changes in hydrological situation



After the cold and dry winter the weather fundamentals have developed towards normal conditions

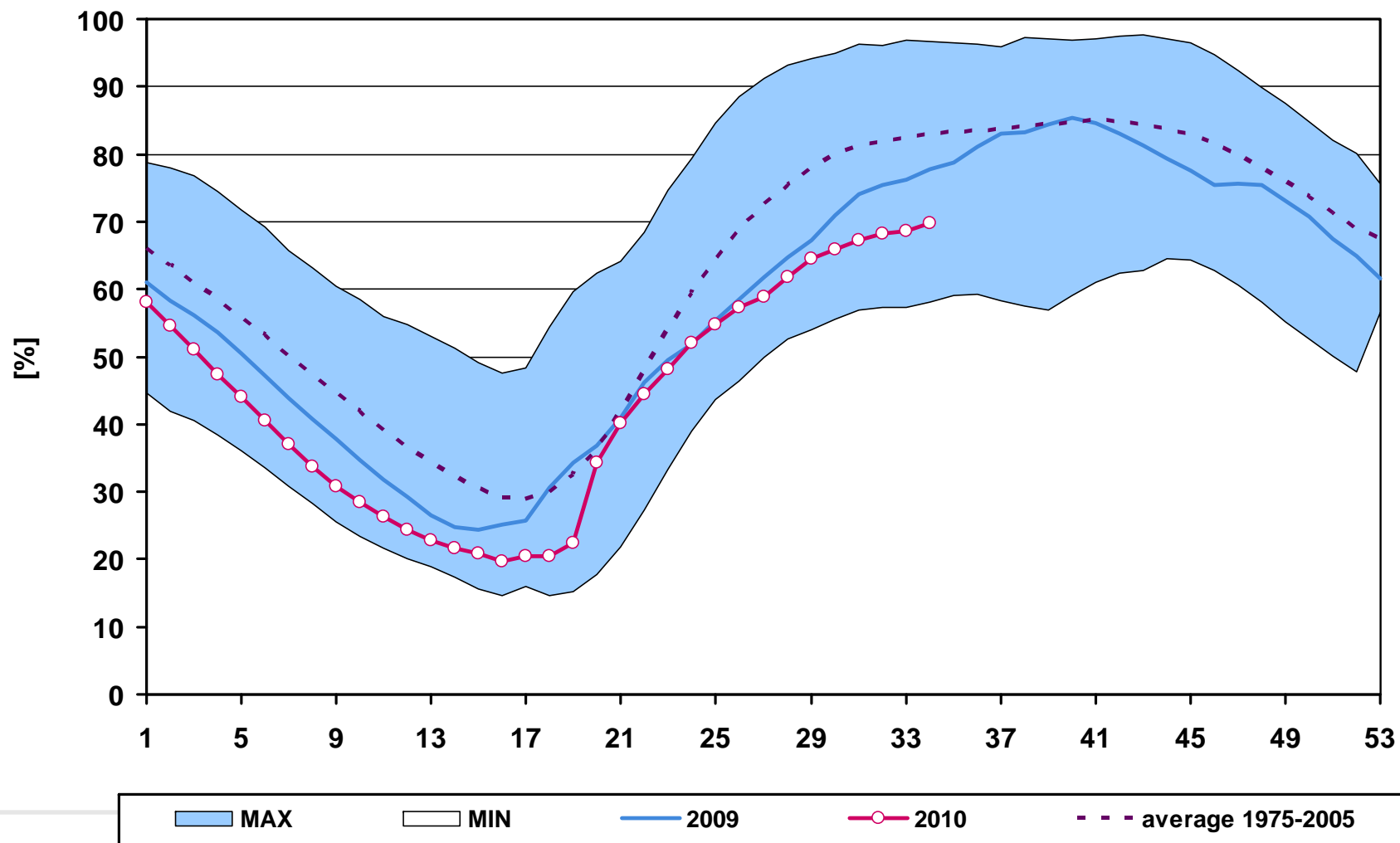


After the coldest winter since 1987, rather normal temperatures excl. warmer than normal July.



Higher than normal precipitation during summer => annual accumulated precipitation now close to normal.

# Nordic reservoirs have less water than normally



Nordic Year 11 price has been volatile due to macro uncertainty, commodity price variations and hydro balance development

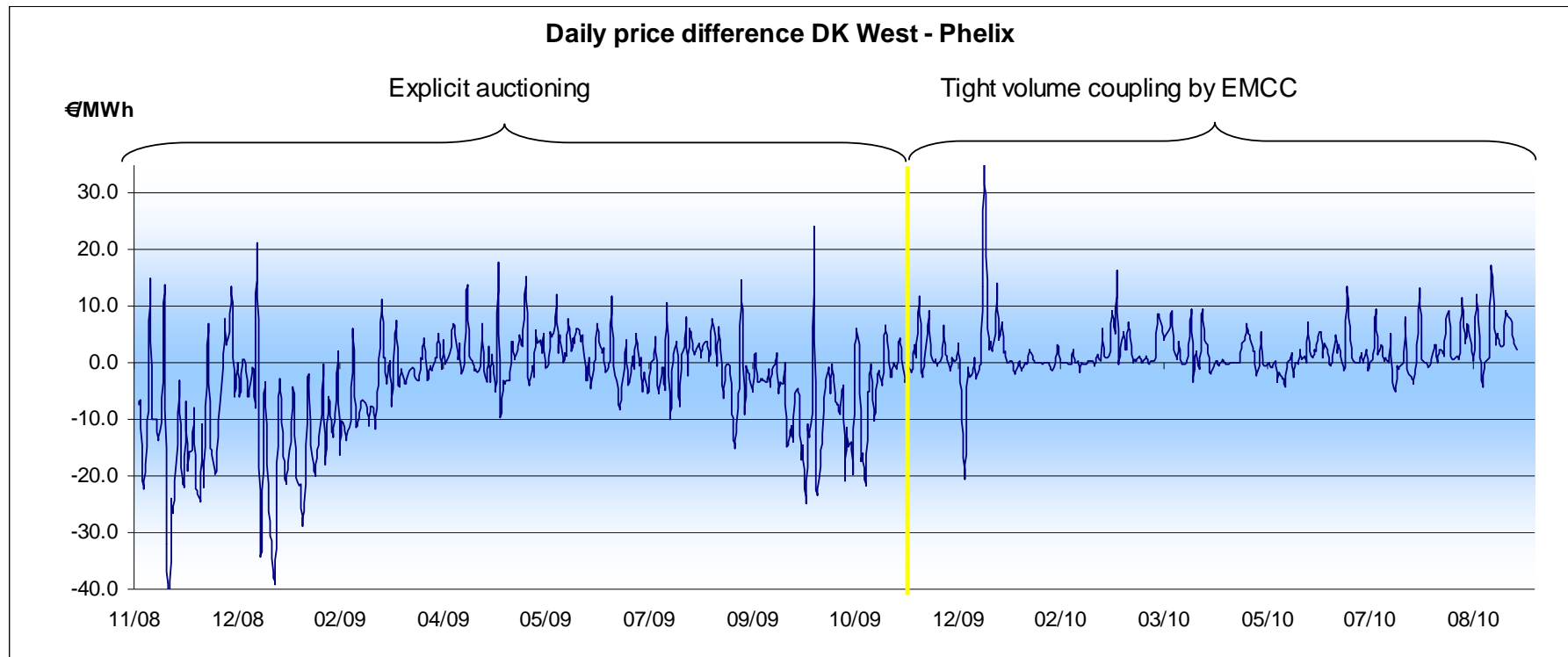


Nord Pool and German EEX forward year 2011 spread has decreased due to low spot gas price and water deficit in Nordic



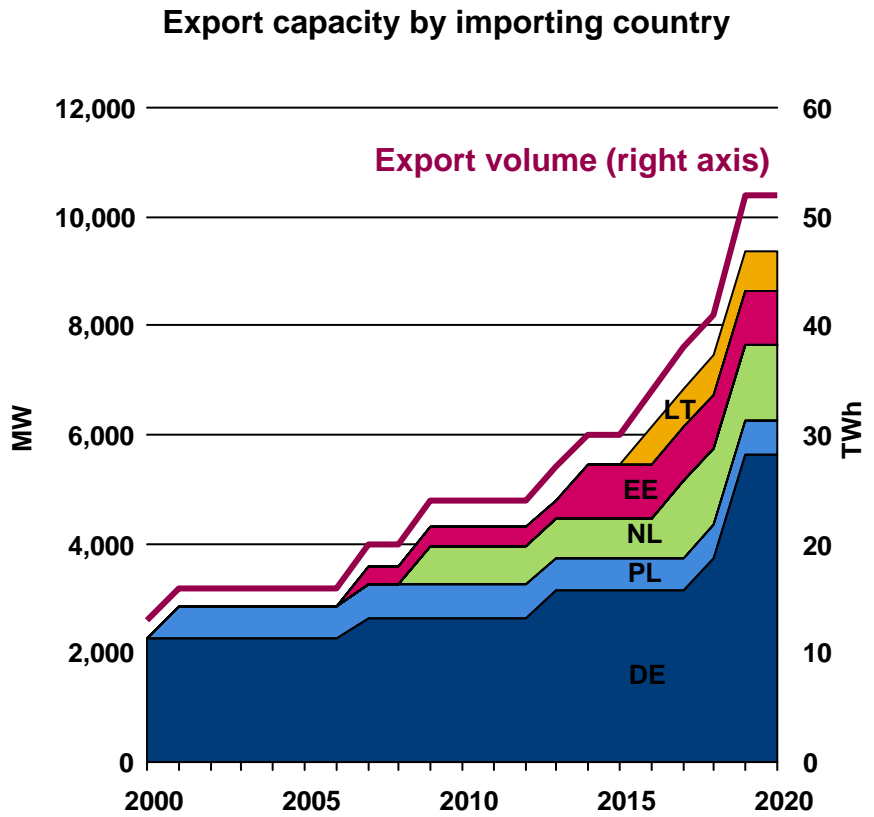
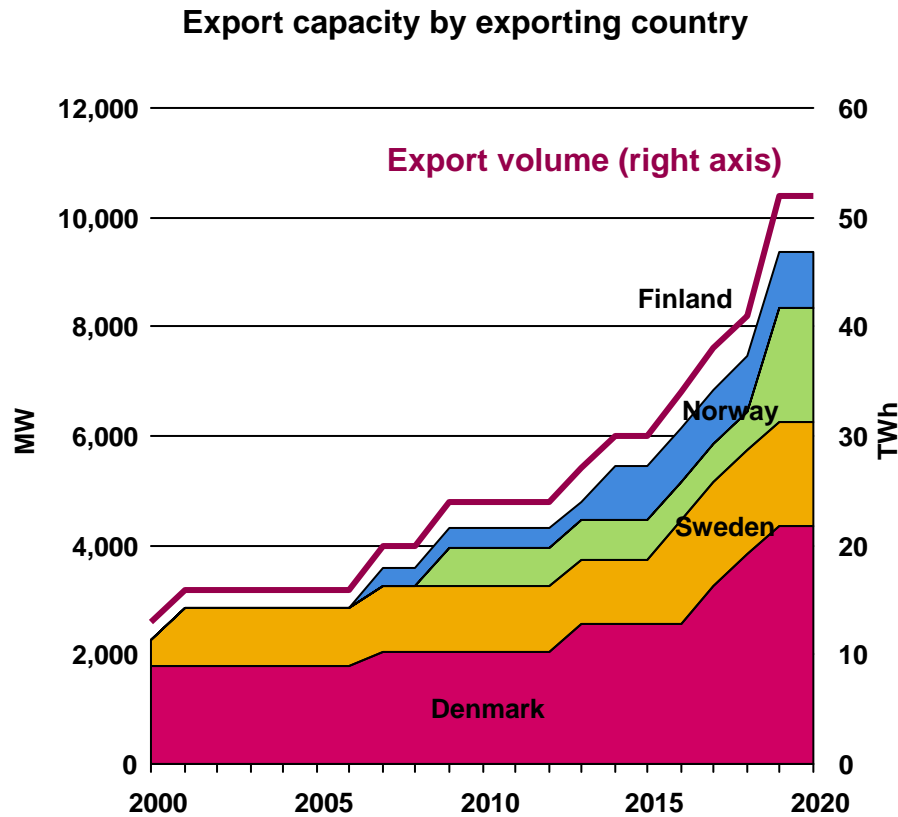
# Market coupling has increased efficiency in cross-border capacity usage

- *decreased price difference between Germany and DK West*



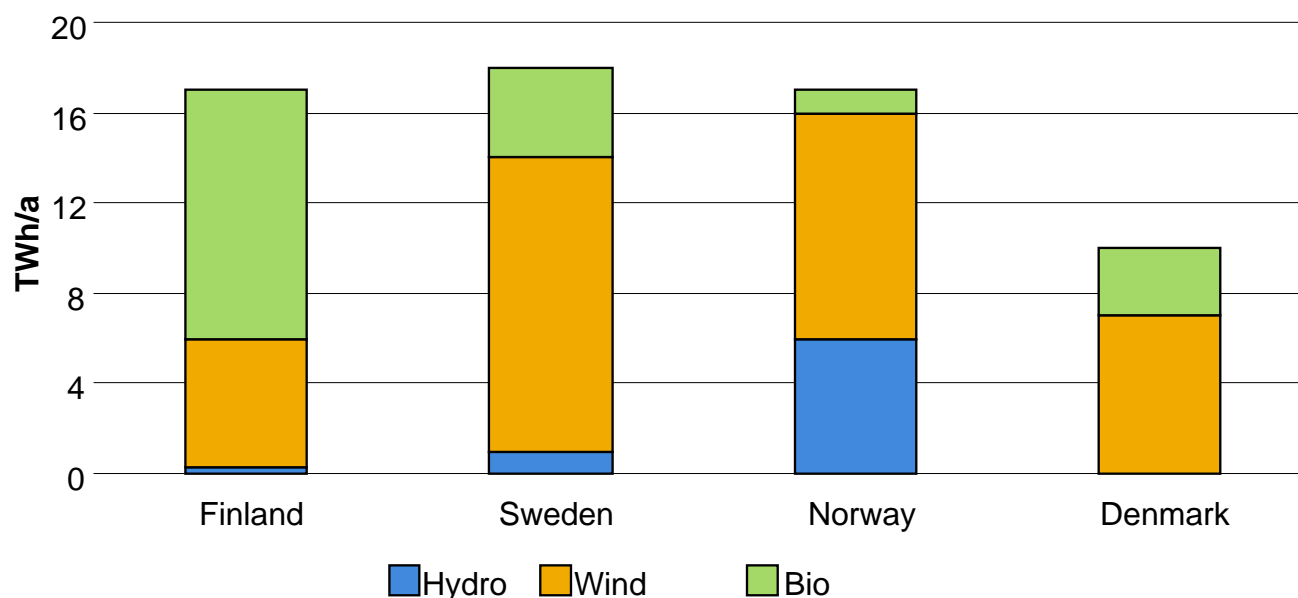
The average price difference between Phelix and Nord Pool Spot in DK West decreased from 4.4 €/MWh in the period 10.11.08-09.11.09 to 1.8 €/MWh in the period 10.11.09-10.09.10.

# Export capacity to Continental Europe will at least double by 2020



# Demanding national RES-E targets – economics and actual outcome?

Targeted RES-E production by 2020 compared to 2008



Hydro figures represent average year production levels. Bio would mainly replace old (CHP) capacity

- Certificate scheme in Sweden aiming for 25 TWh RES-E additions 2002-2020
- Norway plans to join the Swedish certificate system in 2012, with equal ambitions as Sweden
- Feed in tariffs for bio and wind in Finland to be introduced

Note: National RES targets are for the total end-user energy consumption. Electricity targets (RES-E) are estimates based on the overall RES targets.

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# Conclusions

- Seasonally hydrology and temperature continue to have a significant impact in Nordic power price
- Commodity prices (coal, CO<sub>2</sub> and gas) have a big role especially in forward but also in spot pricing
- Nordic electricity demand still growing and expected to reach pre-crisis level 2012-2014
- Central European power price will become more important price reference to Nordic through market coupling and increased cross-border capacity
- Nordic price volatility has increased after EU ETS and spot volatility is expected to further increase when share of wind power increases

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