

# Efficient market development in Europe

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# Context

## Energy policy goals

### Sustainability:

- More renewables
- More heating and transport with electricity

### Market integration:

- More interconnectors

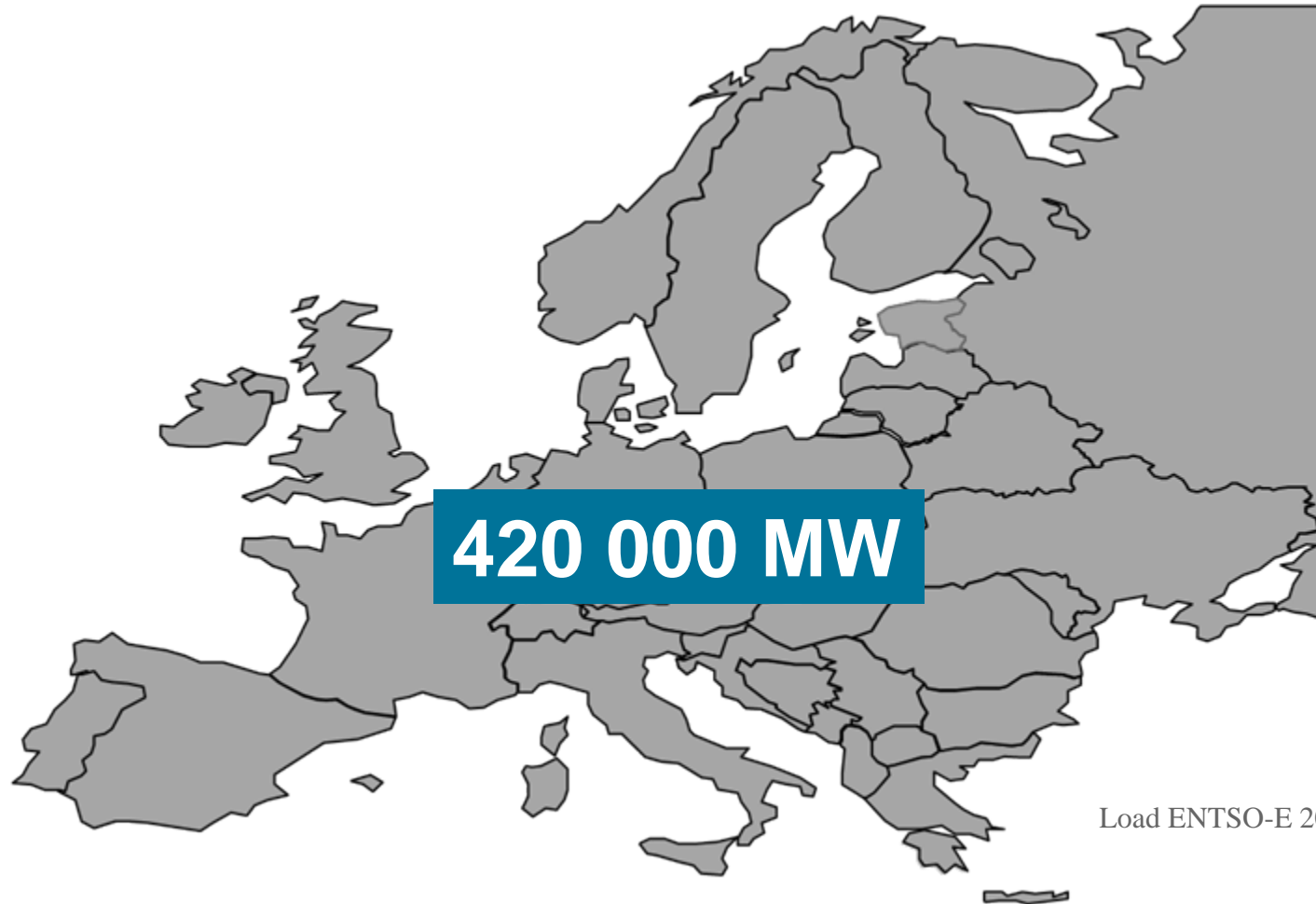
### Security of supply

- More optimal resources sharing



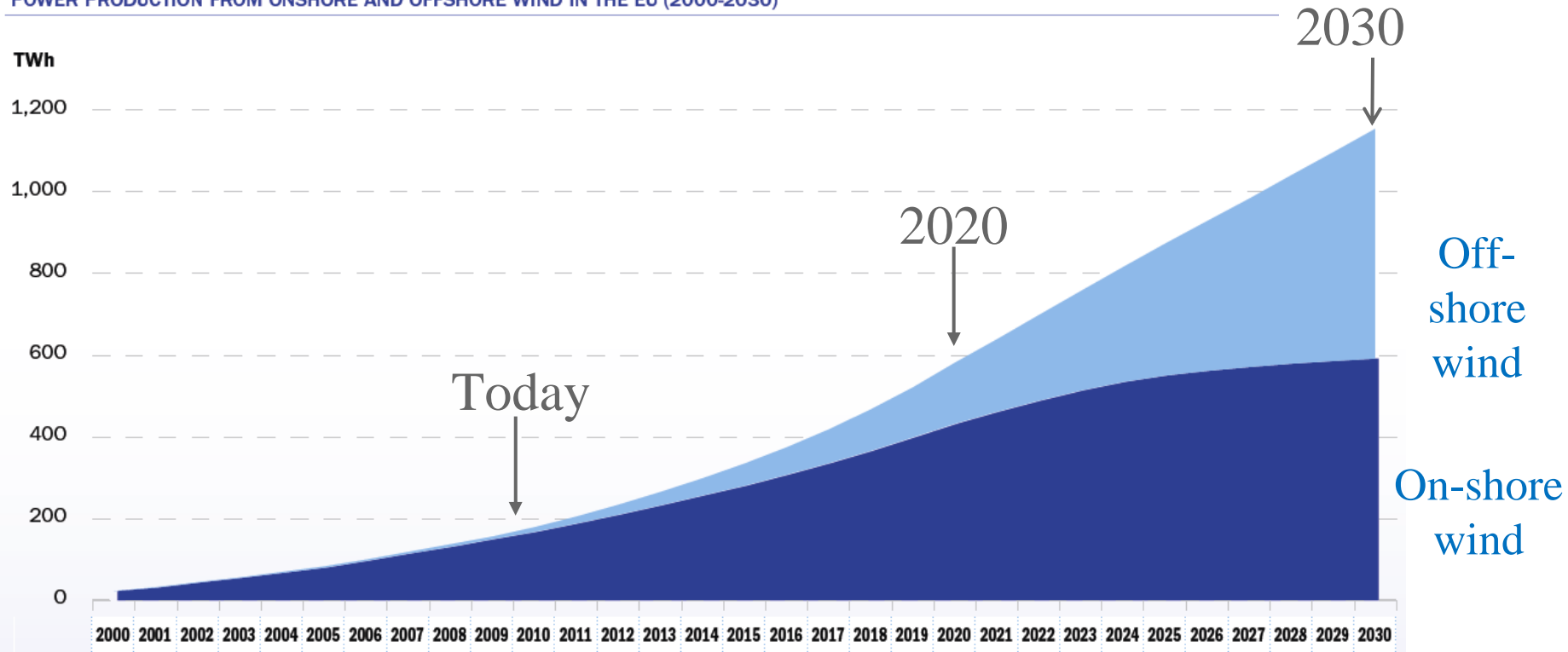
**require more grid  
and efficient  
market solutions**

# Driver 1: Integrated market from Finland to Portugal

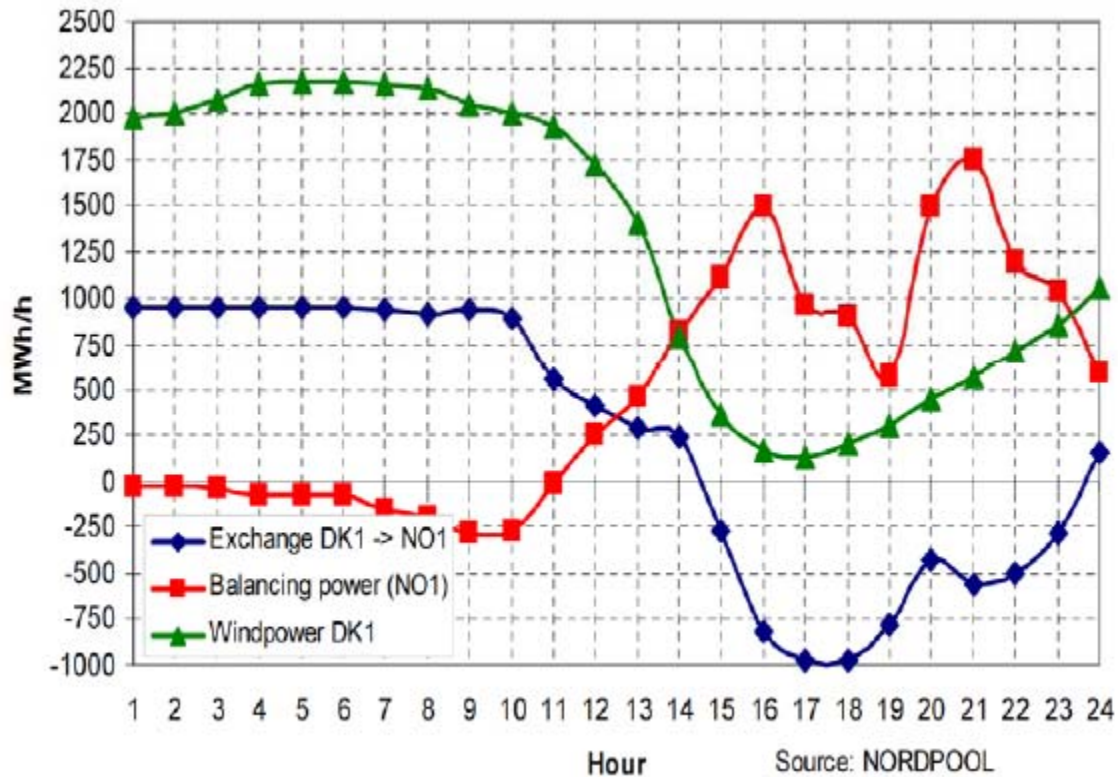


# Driver 2: 20% RES implies 35% in electricity

POWER PRODUCTION FROM ONSHORE AND OFFSHORE WIND IN THE EU (2000-2030)

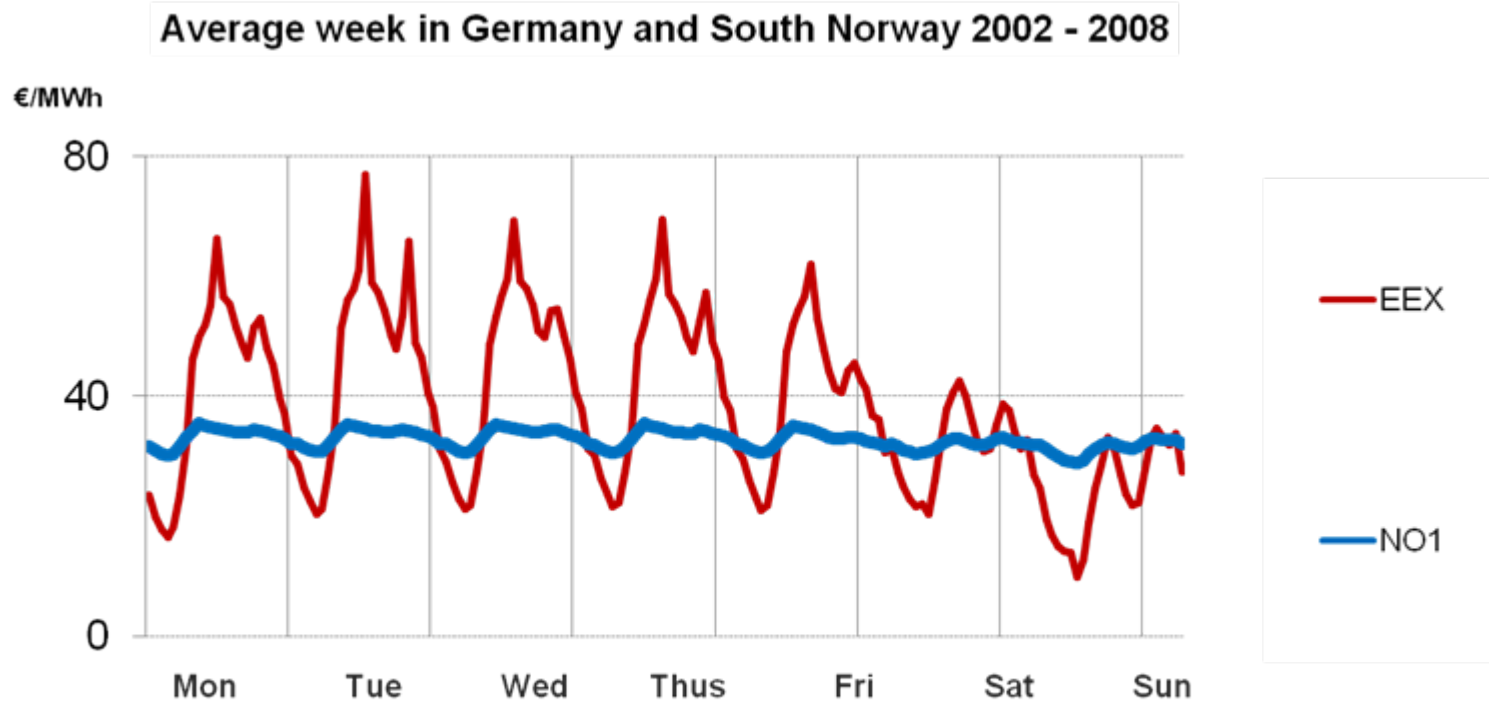


## Driver 3: Handling variation



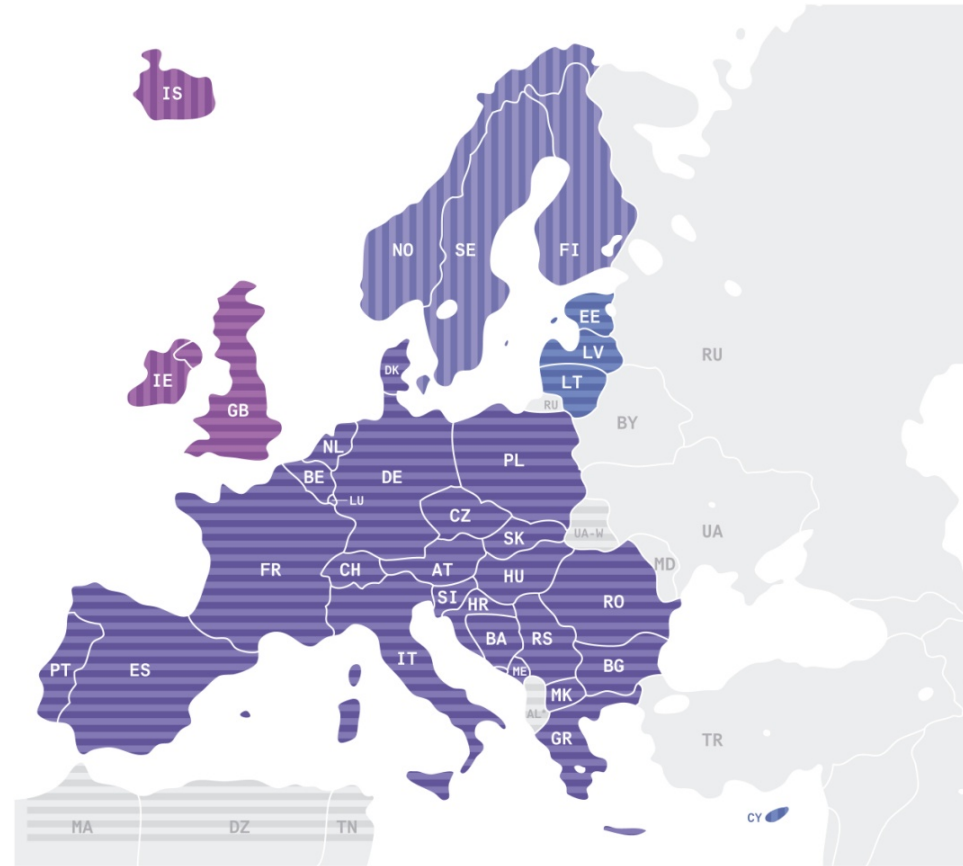
Danish experience shows that 1 m/s variation in wind speed for 2400 MW of installed capacity may induce a difference of 320 MW

## Driver 4: Money to be made



# Statnett meets the challenges, and work as a full an dedicated member in ENTSOE

- 42 TSOs from 34 countries
- Operational in July 2009
- A trans-European network
  - **520** million citizens served
  - **830** GW generation
  - **300 000** km of lines
  - **3 400** TWh/year demand
  - **400** TWh/year exchanges



# ENTSO-E has delivered TYNDP – 520 projects

Massive integration of renewable energy sources

- in Northern Europe
- in Southern Europe



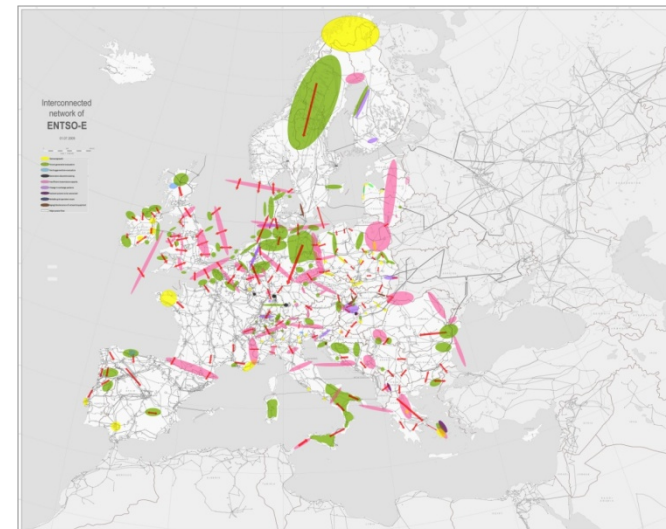
Connection, transport to load centers,  
system and balancing resources

Important East-West and North-South energy flows

Baltic States integration

Connection of new conventional power plants

Power supply of some large cities and regions



## Investments €25 billion for the first five years



### The main challenge

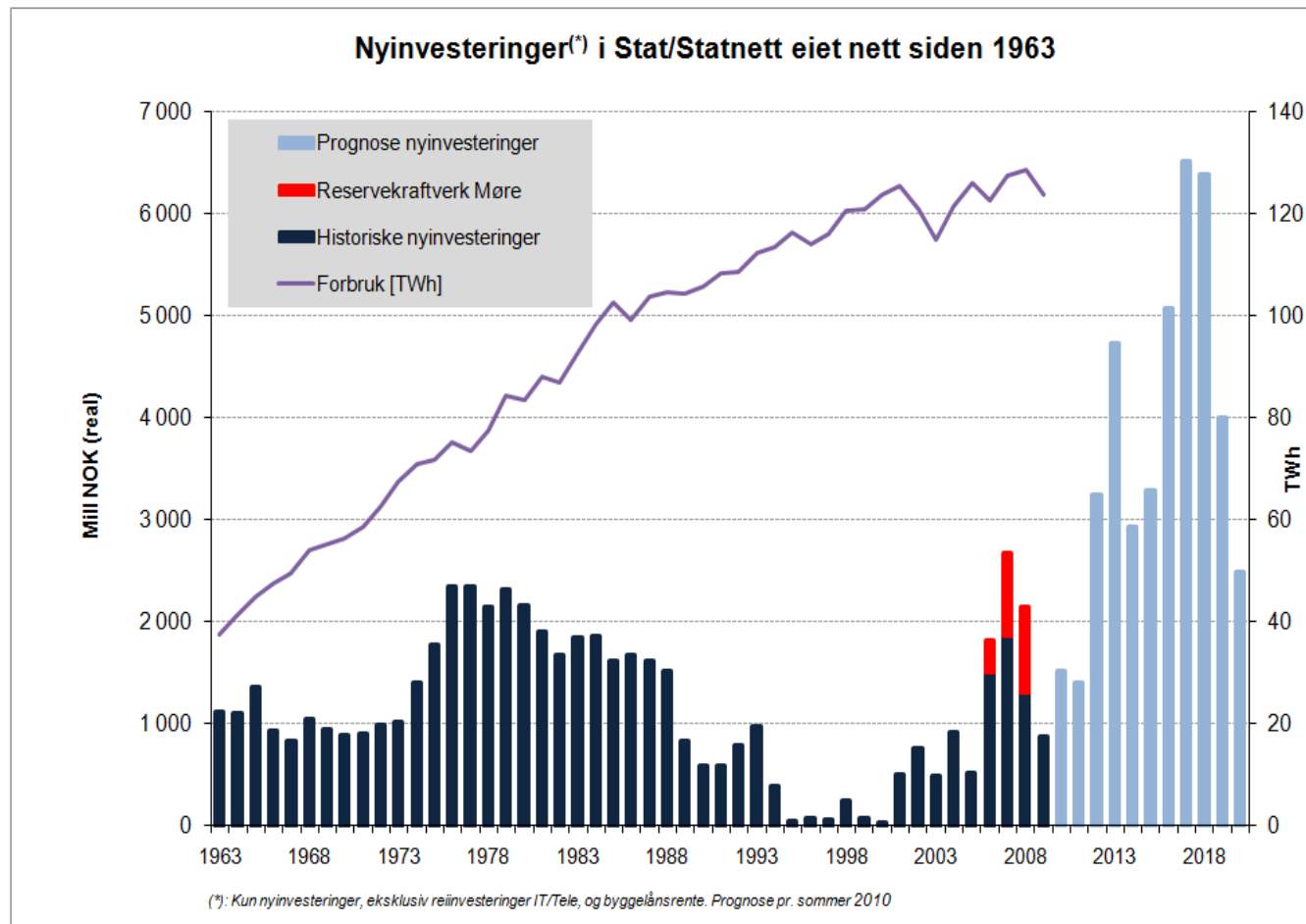
- Acceptance - Permits
- Cost
- Regulation

# Sufficient investments – Merchant cables will contribute

- TSO-TSO model (SK 4, NorNed)
- Auction model on capacity
- Radial/ Pump and storage

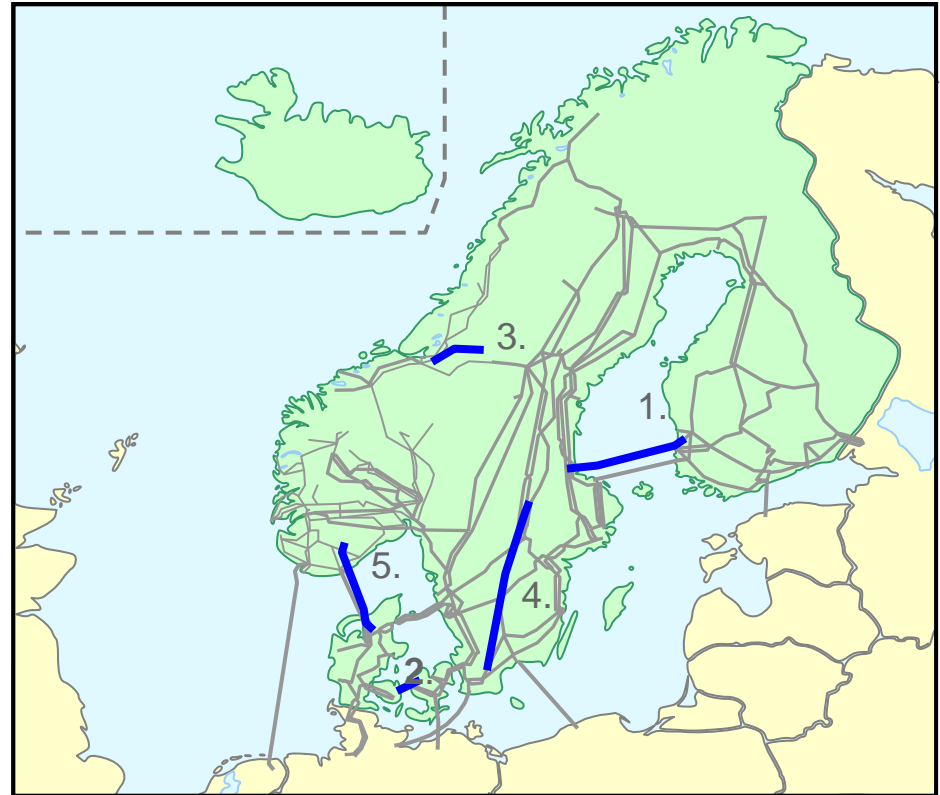


# Statnett meets the challenges by investing



All the priority cross sections in the Nordic are now decided and will be ready by 2014

- Fenno-skan 2
- Great Belt
- Nea – Järpströmmen
- South Link (possible South-west)
- Skagerrak IV

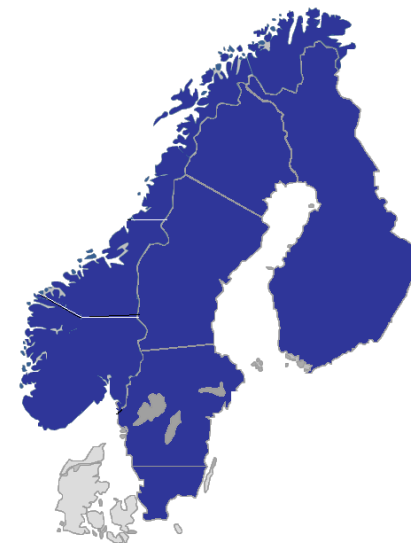
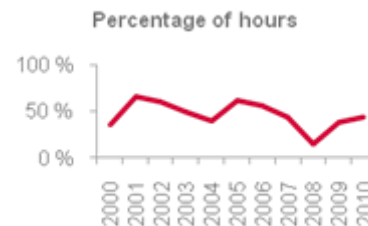


# Nordic grid investments are needed

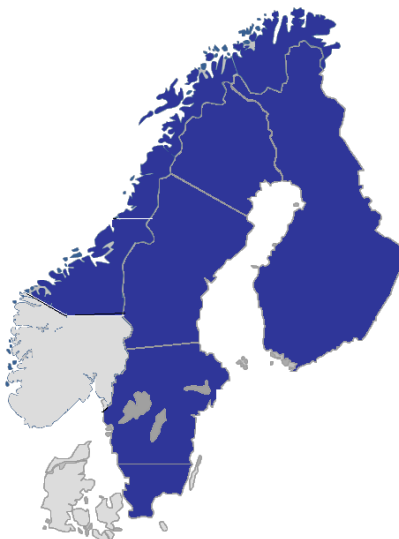
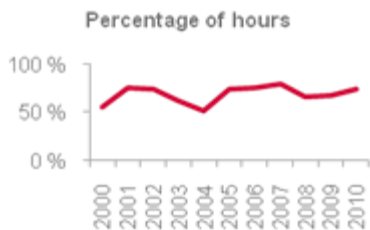
2010: 18 %



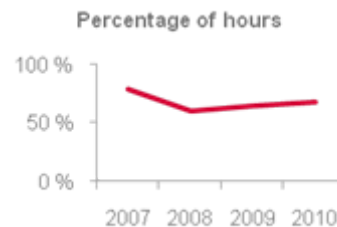
2010: 43 %



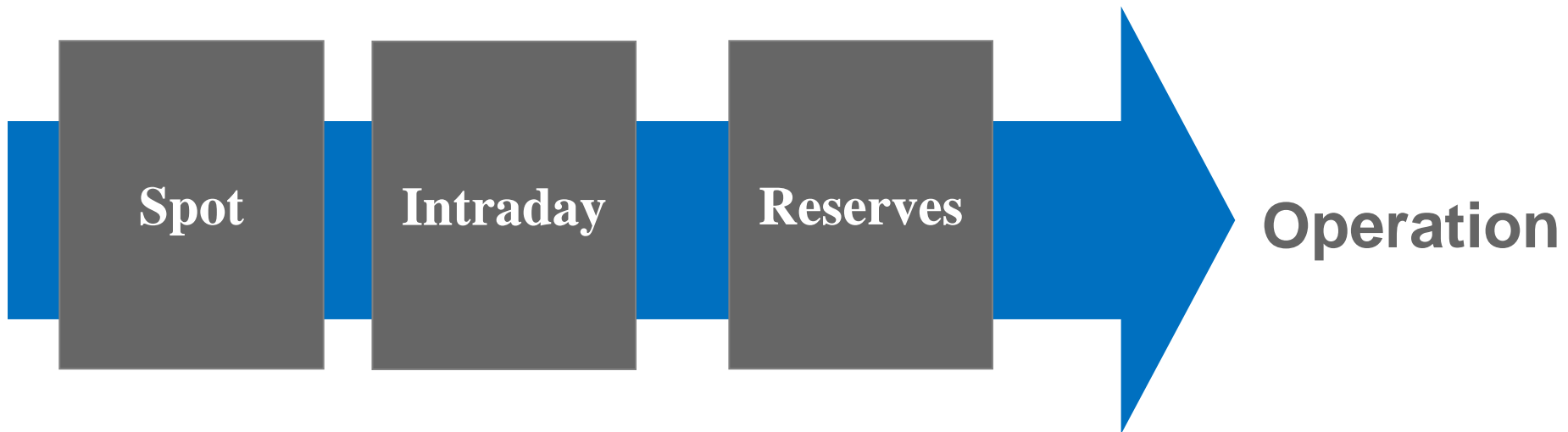
2010: 68 %



2010: 74 %



Statnett meets the challenges, and develop efficient market design



## Developing the spot markets - Status

- Implicit auction on Baltic cable summer 2010
- Price area Estonia summer 2010
- Implicit auction CWE and Nordic November 2010
- Implicit auction on NorNed December 2010
- Implicit auction between UK and CWE/Nordic 2011
- Establishing a TSO company and achieve price coupling 2012 enduring solution

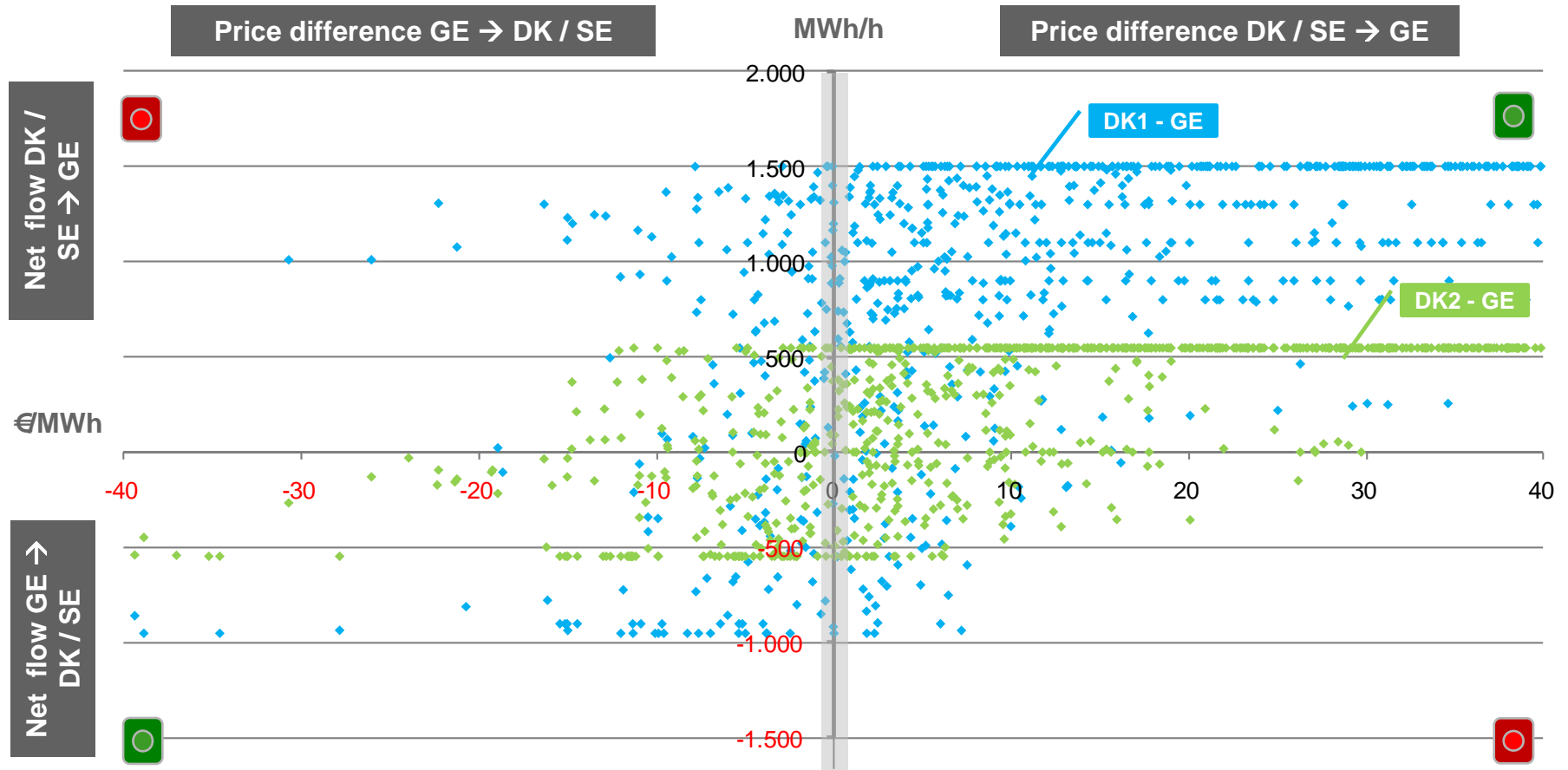
**The ultimate goal of all parties involved is an enduring price coupling over the entire NWE region extendable to other regions**

# Benefits of market coupling



- Price convergence - Improve competition
- Better use of the infrastructure
- Better use of production resources
- Reduce CO2 emissions

# Flows vs. price spread in explicit auctions



Data from December and January 2009 (29.12.08 – 31.01.2009)

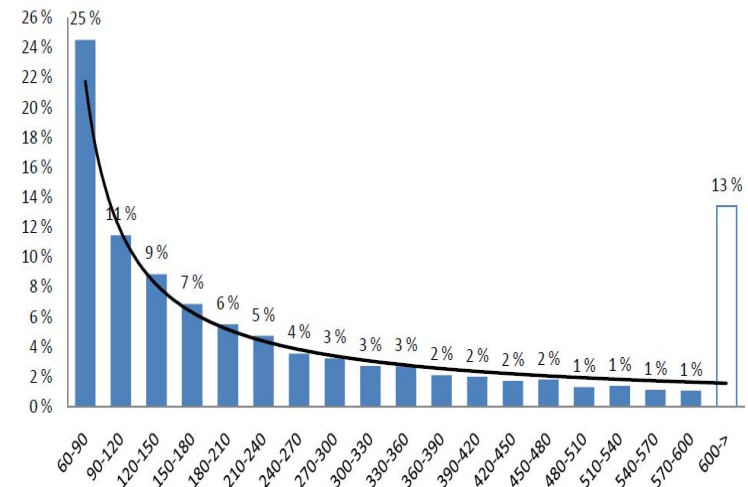
○ right quadrant 
 ○ wrong quadrant

# Flows vs. price spread in the ITVC system



# Developing the Intraday market - Status

- Intra day trade will increase with more intermittent production
  - The European target model is based on continuous trade only
  - An efficient model for auctioning transmission capacity must be allowed
- The TSOs in CWE/Nordic/UK will establish a common platform for trading intraday in 2012
- Together with TenneT and the authorities - evaluate intraday on NorNed1



More than 50% of the Intraday trade take place the last two hrs before gate closure

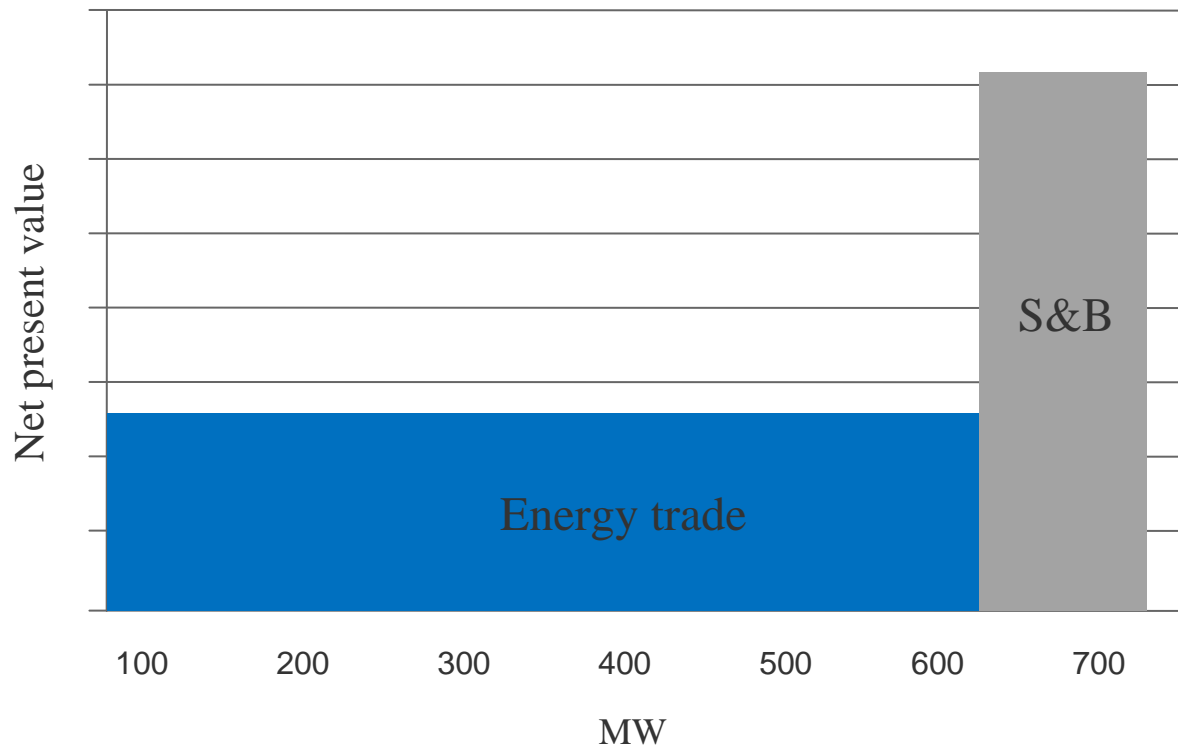
# Developing markets for ancillary services - Status

- European demand for ancillary services is expected to increase
  - More intermittent generation
  - Less conventional production
- The costs for these services significantly differs between countries
  - The European market design (and regulation) should therefore facilitate models which makes trades possible – incentives to buy efficient
    - lower national tariffs
- Necessary to allocate transmission capacity to exchange of ancillary services



Gross value of 100 MW ancillary services on each planned interconnector – 120 mill €/year

## Skagerrak 4 - Increased value for the interconnector for trade with ancillary services



## How to reach the energy policy goals



**Secure grid investments,  
efficient market mechanisms  
and trade with new products**

# An integrated market from Finland to Portugal



**Thank you for your attention**

[www.statnett.no](http://www.statnett.no)