

# Congestion Management and Capacity Allocation in Nordic and EU Market

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**Nordel**





# IEM and Cross-border trade

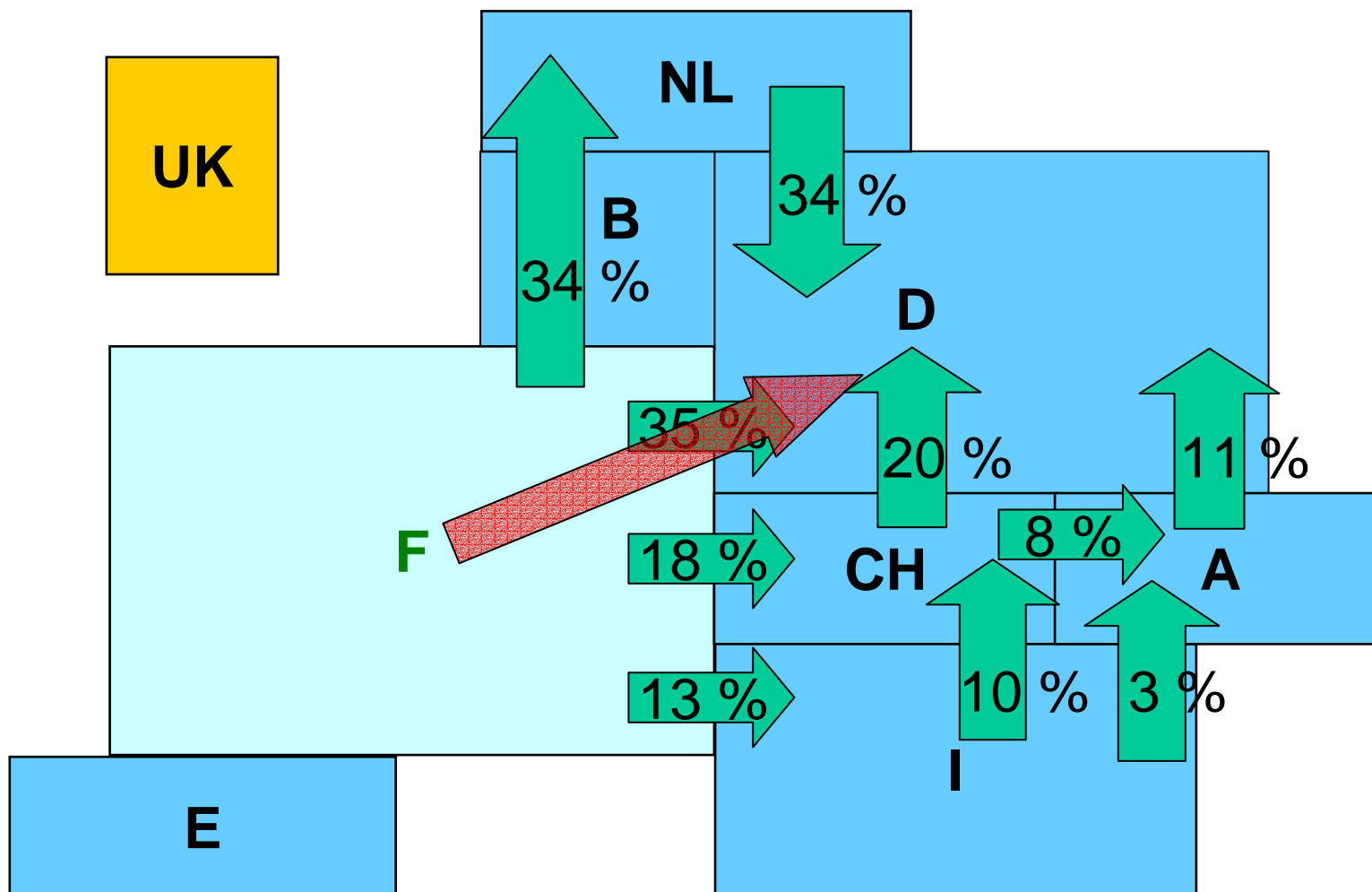
**A single internal electricity market to be built with**

- many congested borders
- many countries with one or few “national champions”

**Therefore, competition mainly driven by cross-border trade**



# Physical flows do not follow commercial paths





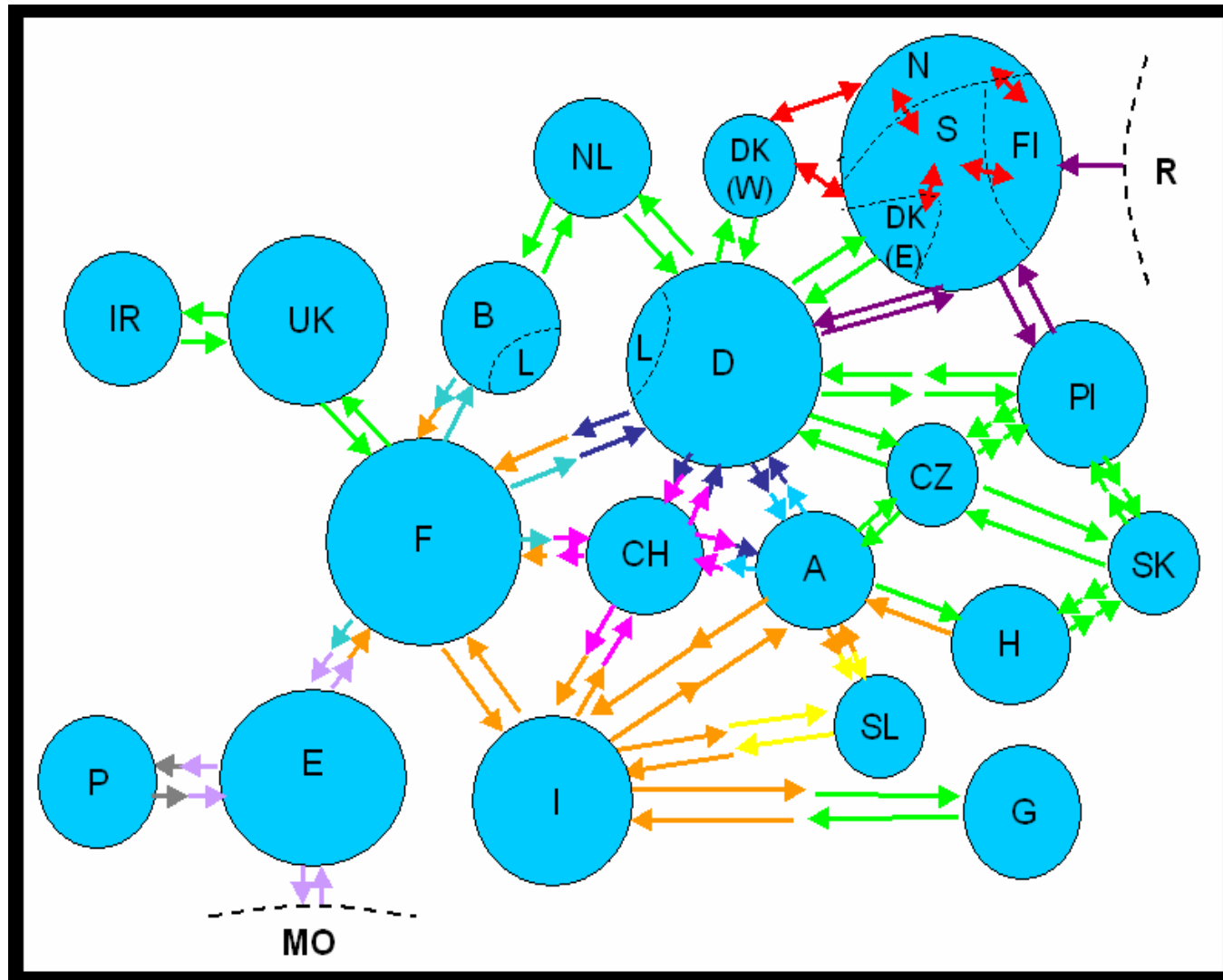
## Balance between generation and load




- **TSOs not in charge of localization of new power plants or end-user facilities**
- **Localization decision affected by a variety of technical/economical factors**
- **TSOs to take consequences of localization decisions**
  - network development
  - congestion management
- **Reasonable local/regional balance between generation and load is a prerequisite for**
  - functioning of market
  - security of supply



# Capacity allocation in ETSO area

Organisation for Nordic Transmission System Operators

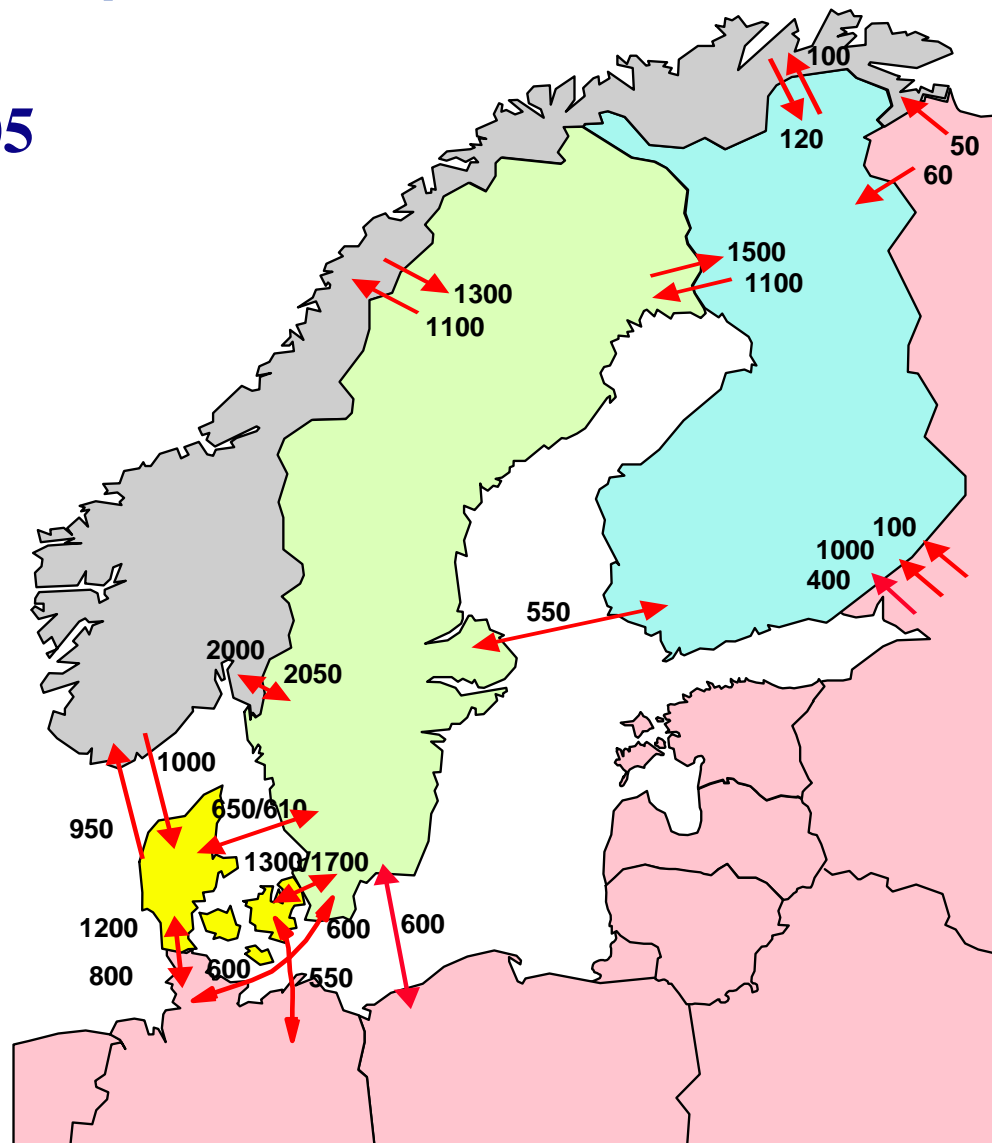


-  Access limitation
-  Priority list
-  Pro-rata
-  Explicit Auctions
-  Market Splitting
-  Specific
-  Specific
-  Specific
-  No allocation mechanism
-  Legal framework different from EU



# Nordel cross-border capacity (NTC)

01.01.2005





# NORDEL METHODS FOR CAPACITY ALLOCATION AND CONGESTION MANAGEMENT



# The methods

## For structural bottle-necks

- remove by strengthening the network (long-term)
- handle by splitting market into price areas (short-term)

## For temporary bottle-necks

- handle by counter-trading (make day-ahead capacity firm)

## For DK/DE border

- Explicit auctions

## In addition

- moving of internal bottlenecks to the borders used to variable extent



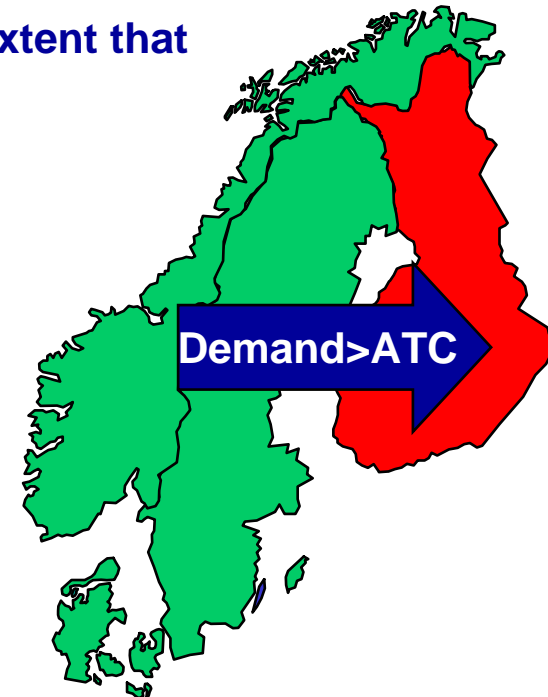
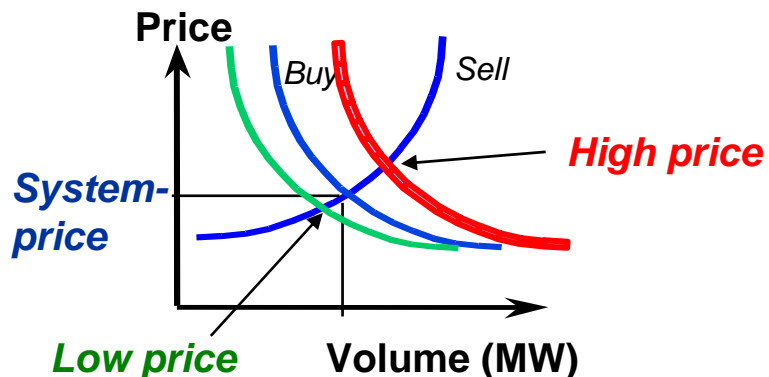
## Interaction between TSOs and PEX

- Market players required to plan their power position to balance
- Physical trade across the bidding-area borders only through the spot market
- Day-ahead border ATC given to Elspot, remaining intra-day capacity to Elbas (FIN/SWE/DK-East)
- System operators guarantee firmness of ATC
- PEX (Nord Pool Spot) allocates capacity in implicit auctioning within the settlement of energy trade
- If no congestion, one price. If congested, split into area prices



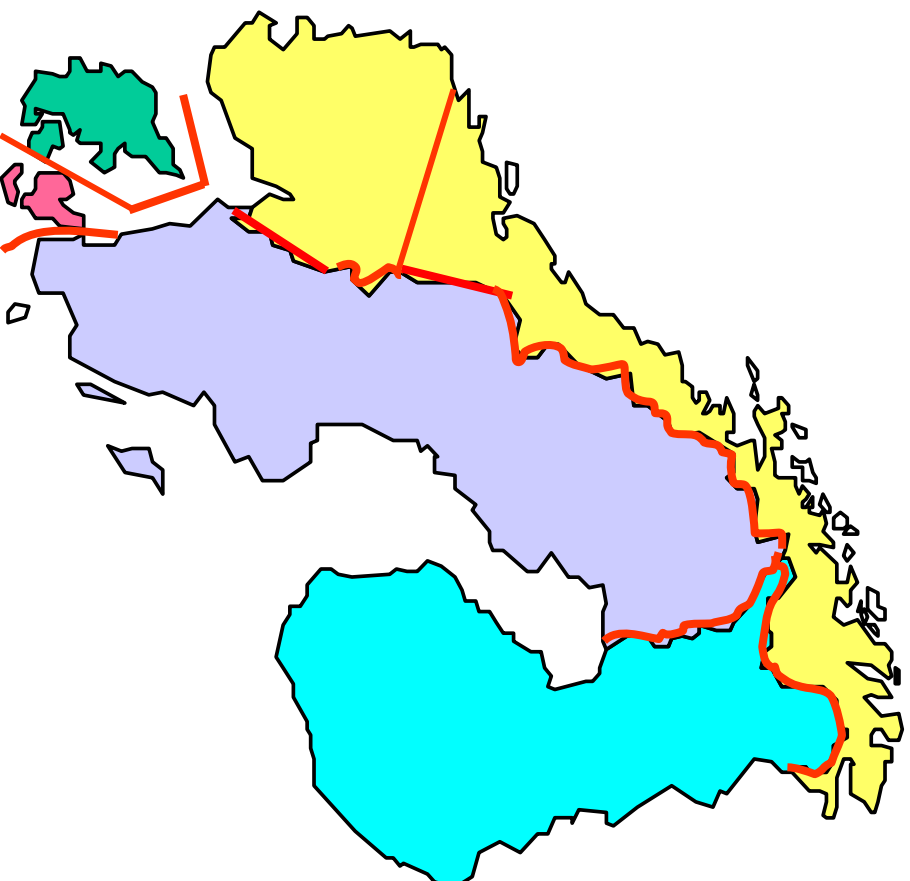
# Market Splitting / Area Prices

- If crossborder trade volume at system price exceeds available capacity (ATC), market will split to different price areas
- Area prices will become **lower** than the system price in surplus area and **higher** in deficit area
- This result achieved by using local bids to the extent that market clears and ATC is utilized up to 100%





# Current bidding areas



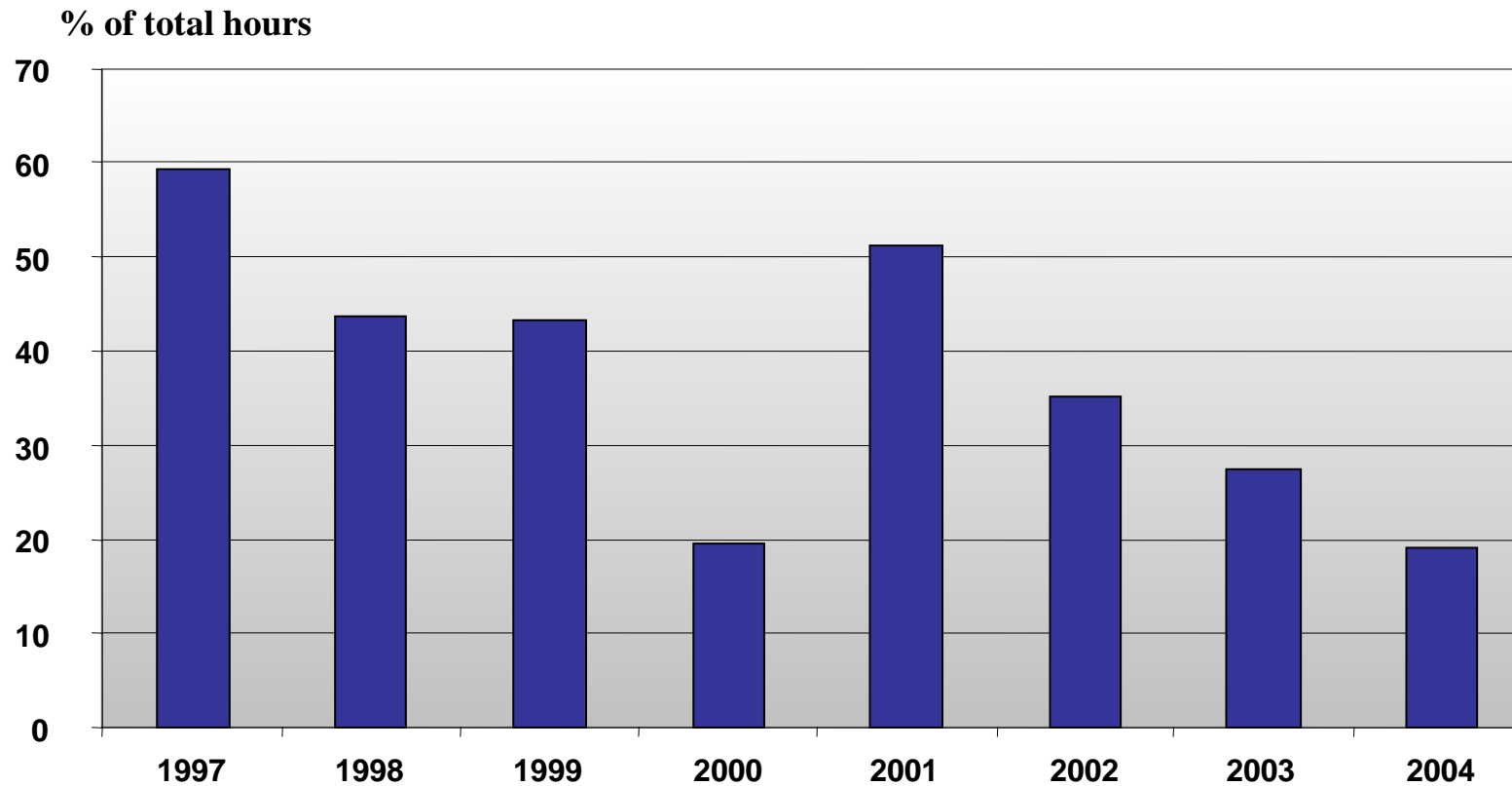


# Capacity allocation and congestions SEEN FROM THE MARKET



## Nordic market has a single price less than half of the time (due to congestions)

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Source: Nord Pool Spot

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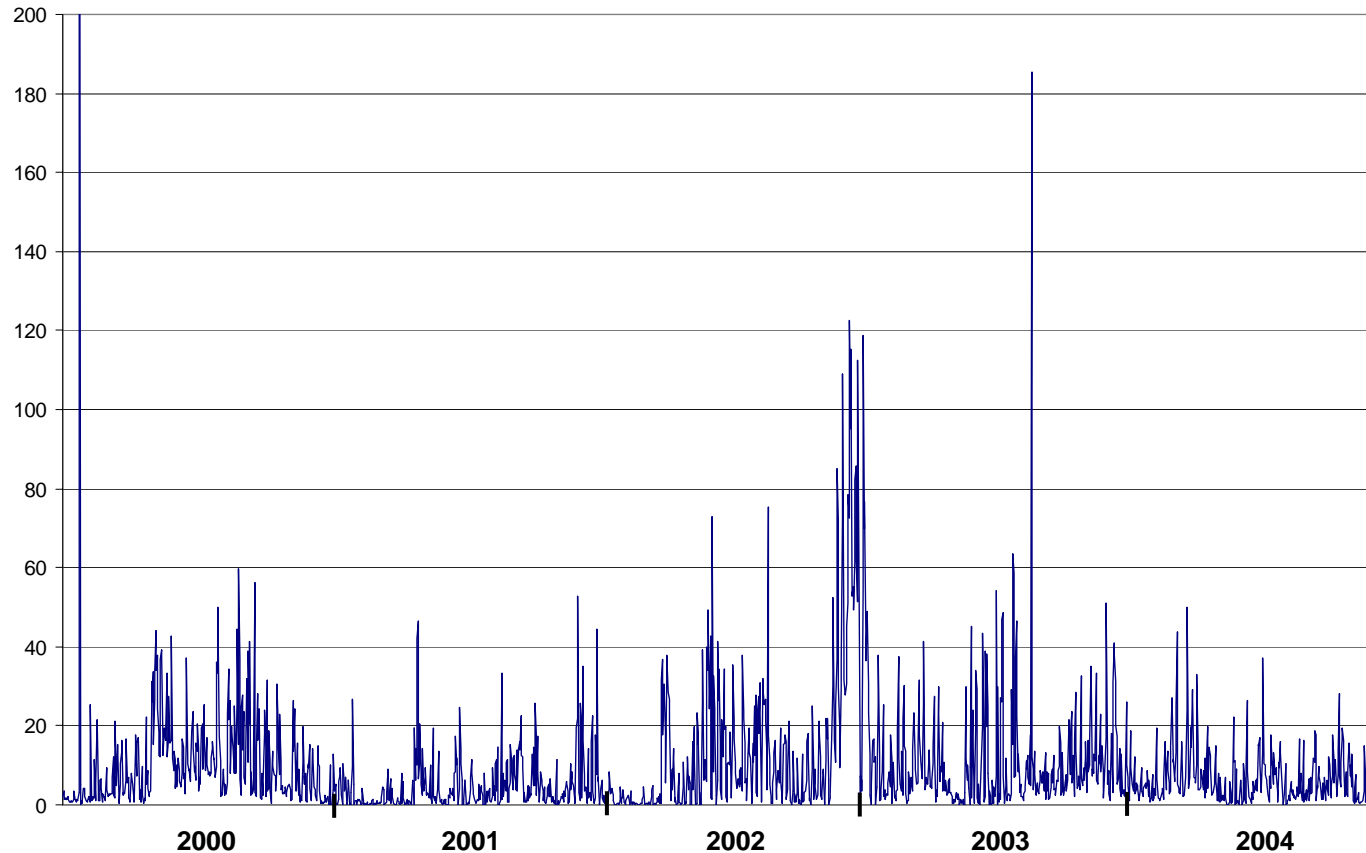
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## Price differences are volatile and hard to predict

Organisation for Nordic Transmission System Operators



**Differences between area and system prices as absolute values.  
Based on daily mean values of area prices. NOK/MWh**

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Source: Nord Pool Spot



# The Issue

For many market participants the transmission bottlenecks are

**the number-one problem of electricity market:**

- restricts trading
- creates risks
- increases market power
- endangers thrust to the market.

**On the other hand**

**Network without congestions (copper plate) is an illusion.**

**Congestions can be reduced but it has a cost.**



## Need for further steps in Nordic area

- Nordic market can and shall be developed on its own merits, respecting though overall EU framework
- Strengthen the critical prioritised interconnectors. Use congestion rents as joint part-financing.
- Clarify principles for managing internal congestions
- Better coordination of maintenance outages
- Prudent increase on counter trade via Elspot to offer a more stable capacity availability
- A model needed to attach the costs of congestionmanagement primarily to those who get the benefit
- Market coupling as soon as possible between DK and DE, as will be the case for NO and NL



**Thank you**

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