The Nordic Electricity Market

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Nordel
Organization for Nordic TSO’s

- Five countries
- Four are interconnected
- Three ½ are synchronous
- 400 TWh/year
Nordel
Organization for Nordic TSO’s

- System operation
- Grid development
- Market development
- Codes for operation, connection and planning
  - Wind connection code launched this year
Grid access

- TSO’s must give access to applicants who comply with the connection code.
- TSO’s undertake necessary grid investments
- Actors pay tariff for use of grid. Tariff can be a combination of capacity and energy.
- Tariffs depend on location
  - In Sweden the difference between far North and far South is about 2£/kW/year
- Consumers pay the larger part of grid costs
Grid development
5 Prioritised cross sections

- Plan developed and recommended by Nordel
- Nordic socio economy
- 1 bn €
- Plan for common financing (congestion rent).
- National approval and bilateral financing
Grid investments 2002-09
Source: Nordel 2006

The diagram shows the grid investments from 2002 to 2009. The investments are categorized by different entities, each represented by a different color. The vertical axis represents the investment in million euros (M€), while the horizontal axis represents the years from 2002 to 2009.

- **Landsnet**
- **Svenska Kraftnät**
- **Statnett**
- **Fingrid**
- **Energinet.dk**
Nordel strategic projects
Presented to Nordic Ministers

• More efficient functioning of the market
  – Push for implementation of 5 prioritised cross sections
  – Publish new grid plan in January 2008 with next package of grid investments
  – Propose common principles for congestion management by end 2008

• Better integration with other markets
• Better planning processes
• Better co-operation with neighbouring TSO’s
Nordpool exchange
Owned by the TSO´s

- Day ahead market (Spot)
- Intraday (Elbas)
- Regulating in real-time is handled by TSO´s
- TSO´s deliver trade capacities to Nordpool daily

- The main market philosophy is:
  - Market splitting to handle structural congestion
  - Counter trade to handle random congestion

- But practice is somewhat different
Norpool
Nordic Power exchange

- Seven or more bidding areas
- All trade between bidding areas must be handled by Nordpool

250 TWH in 2006
Spot prices 23.10.07

System price €40.22

System price €44.23
Observations and conclusions (1)

- Congestions in the Nordel area are transparent in the market
  - Except for internal congestion within bidding areas

- The grid is used efficiently with market splitting.
- Market splitting gives more volatile prices, and shows the real marginal costs to consumers. This is an incentive for DR as peak load
Observations and conclusions (2)

• Congestions are quite frequent, and congestion rents are in the order of 50 -100 € /year. This is probably a reasonably efficient congestion level.

• Producers have a tendency to wish for a "Copper plate". This is not good economics.

• Congestion rents gives a "perverse" incentive for grid investments. Investment decisions must be based on socio economic analyses