





Introduction from AST

- **About AST**
- **Market situation in Latvia**
- **Hot topics and plans**
- **Certification status**

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EU Directive No 2009/72/EC as of 13.07.2009

On 12.01.2011 the Cabinet of Ministers of Latvia adopted a decision on implementation of the independent system operator (ISO) model:

- From 01.04.2011 a company AS "Latvijas elektriskie tīkli" (LET) is established and AST and LET operates as separate legal entities
 - Transmission assets invested in LET
 - LET performs transmission assets management function
 - LET ensures capital investments in the transmission assets
- From 02.01.2012 the sole shareholder of AST is the Republic of Latvia in the name of the Ministry of Finance
- From 01.01.2013 AST accomplished take over of the staff from AS "Latvenergo", which is responsible for SCADA management

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AST core functions

AST is an ISO, which provides:

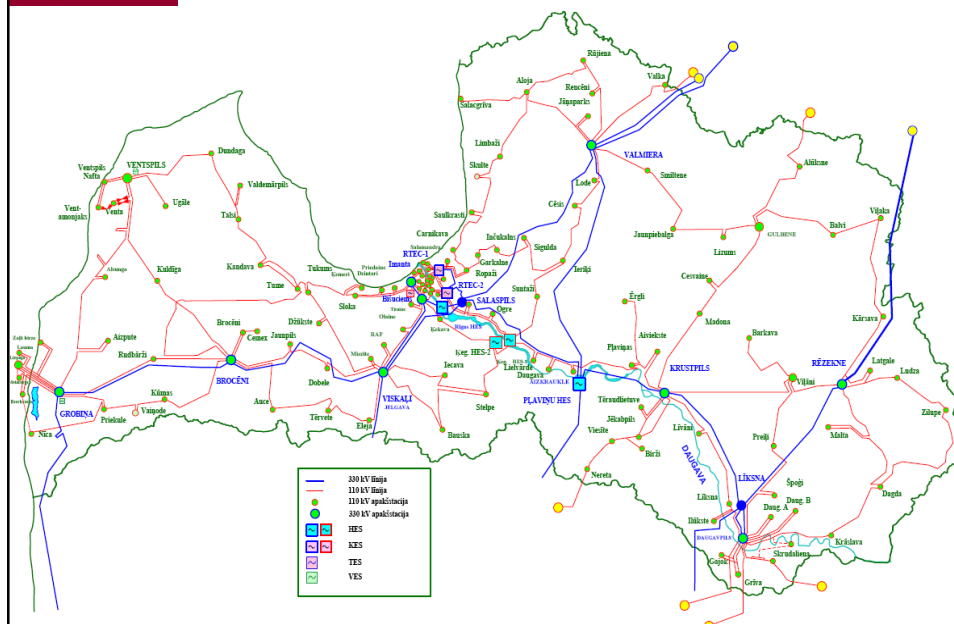
- Operation of electric power transmission network
- Ensures security of electric power supply in Latvia
- Power transmission services, based on published transmission service tariffs
- Free third-party access to the transmission network
- Operational control of the transmission system
- Stable operation of transmission network

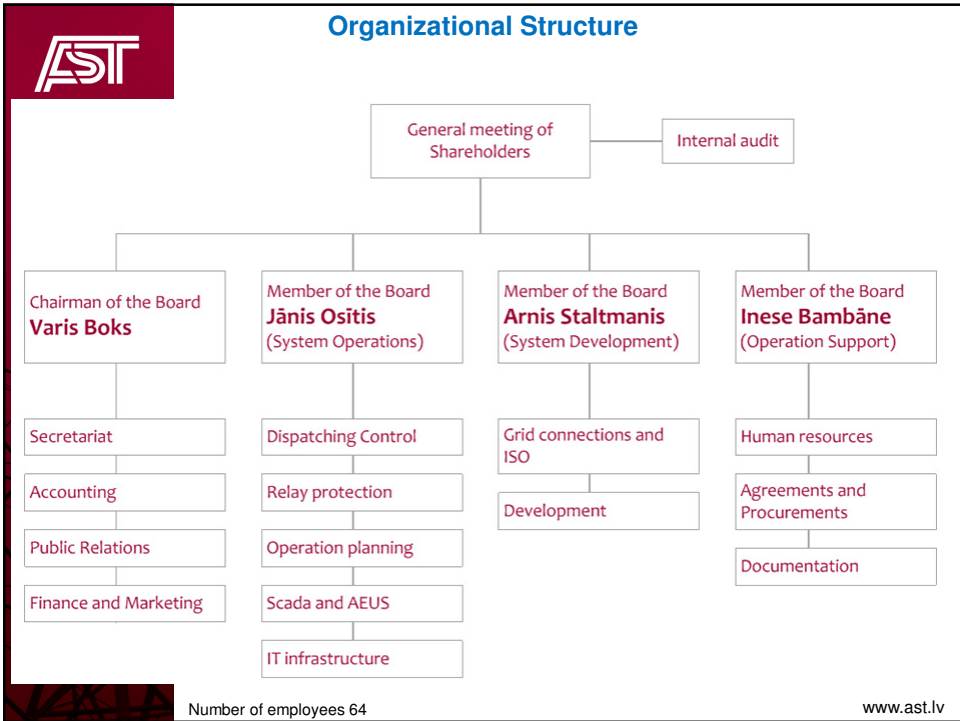
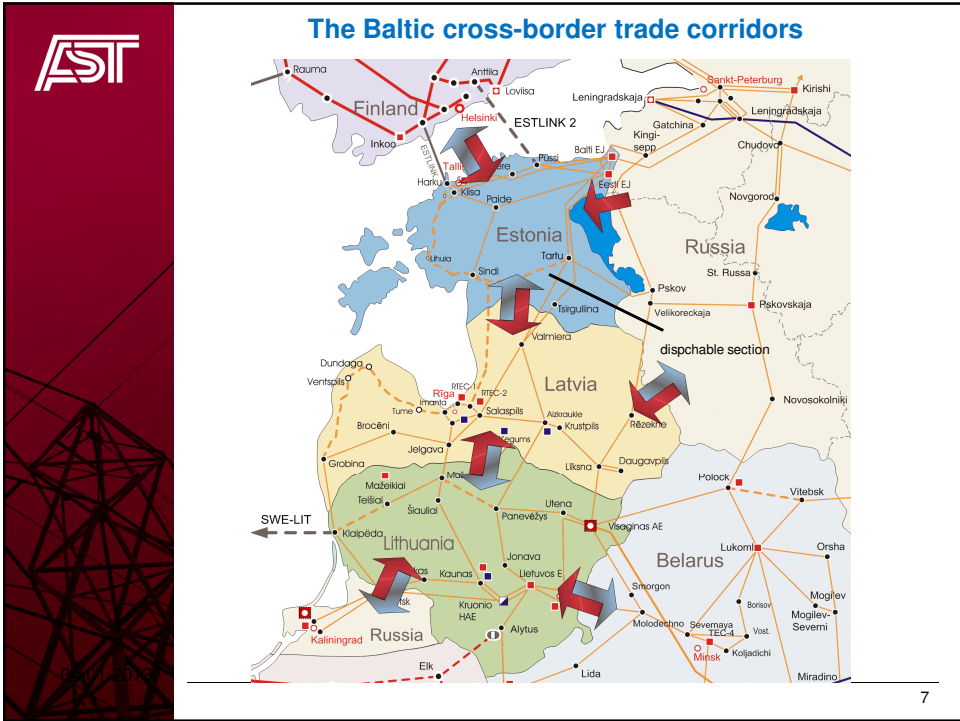
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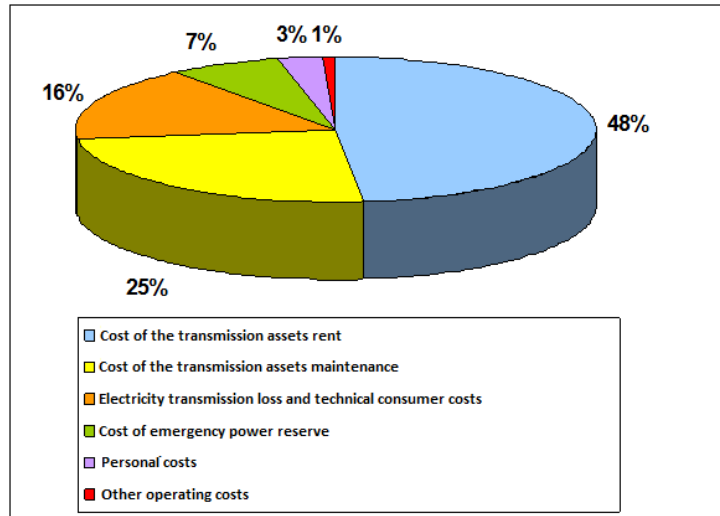


AST manages 330 kV and 110 kV transmission lines and substations located in the territory of Latvia





Expenses covered by transmission tariff



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Market situation in Latvia (1)

- In accordance with the requirements of the EU, the Baltic States* are working on the electricity market liberalization. The Cabinet of Ministers adopted amendments, which stipulate that from 01.11.2012 all legal customers will have to choose their electricity supplier. The estimated number of the mentioned legal customers reach 20 000. Thus, the Latvian market opening will reach 75% instead of 66% which were stipulated in the BEMIP market opening requirements
- From 18.06.2012 Latvian and Lithuanian electricity market participants are not able to buy and sell in Nord Pool Spot (NPS) Estonian trade area, but have possibility to trade in the newly established NPS Estonian - Latvian trade area (ELE). ELE is a temporary solution until the Latvian trade area in NPS is established. Estonian - Latvian interconnection optimal capacity utilization has been entrusted to the NPS
- The Latvian Electricity Market Law (EML) stipulates legal framework for the operation of Electricity power exchange (PEX)
- Ministry of Economy has planned to liberalize the electricity market for households from 2013 autumn

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*Latvian electricity market has been opened since 15.05.2008 and any electricity consumers can choose their electricity supplier

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Market situation in Latvia (2)

Taking into account electricity market liberalization in the Baltic countries, number of electricity market participants could increase, because market participants could decide to try their luck in electricity exchange spot themselves. Market opening is a good basis for the new players entering the Latvian/Baltic market

At the end of February 2013, 13 energy identification codes (EIC) have been issued to energy traders and balance providers (7 are active)

Energy trader, balance provider:

1. SIA „INTER RAO LATVIA”
2. SIA „LĪČEZERS AT”
3. SIA „BCG RIGA”
4. SIA „E2C”
5. AS „Latvenergo”
6. SIA „Enefit”
7. SIA „Enerģijas avots”
8. SIA „Energ Trade”
9. SIA „Fenzo”
10. SIA „Energaudit&Consulting”
11. SIA „Baltic Energy Pool”
12. SIA „HANSA ENERGY”
13. SIA „Santoni”

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Realized and planned short term solutions to provide capacity for Est-Lat cross-section

- + Increased – flexible consideration of ambient T in Estonia
- + Increased – TSO arrangement: avoid maintenance of overhead lines (OHL) during summer
- + Increased – reserves kept in deficit area (Latvia, Lithuania)
- Will be reduced – Elering AS will terminate the reserve agreement with AS “Latvenergo” from 1 July 2013
- + Increased – additional reserves in Lithuania (arranged between AST & Litgrid AB)
- + Virtual bidding area Balt – RU/BY
- + Reconstruction of OHL in Latvia (1Q 2013)
- ❖ Construction of 3rd OHL Est-Lat (2020, right-of-way in the part of Latvia 2013 – 2014)
- ❖ Reconstruction of OHL in Estonia (2022 starting)

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Certification status – NRA issued

March 9, 2012: AST has applied to the National Regulatory Authority (NRA) for certification. AST has submitted all the requested information to NRA

September 17, 2012: NRA issued an opinion (a preliminary decision) regarding certification of AST, which has been sent to the European Commission

January 30, 2013: NRA issued a decision on the electricity transmission system operator's certification, confirming the AS "Augstsprieguma tīkls" as an ISO

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03.06.2013

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AST

Thank you for attention!

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Nord Pool Spot seminar, Riga 5th March 2013

NORD POOL SPOT

**EUROPE'S LEADING
POWER MARKETS**

nordpool spot

What is Nord Pool Spot

- Nord Pool Spot operates the leading markets for buying and selling power in Europe:
 - Elspot day-ahead market in the Nordic and Baltic regions
 - Elbas intraday markets in the Nordic and Baltic regions
 - N2EX market in the UK
- 370 companies from 20 countries trade on Nord Pool Spot's markets
- In 2012, 432 terawatt hours (TWh) were traded at Nord Pool Spot. This is equivalent to the power consumption of Baltic for 17 years

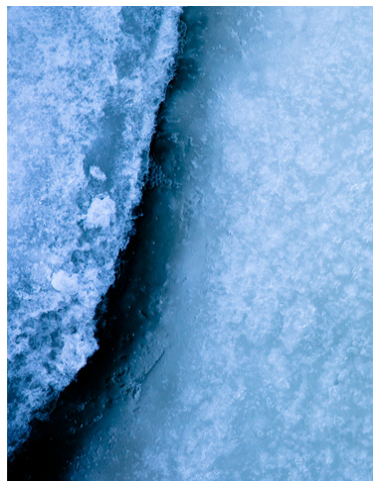


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Our function

- To provide liquid, secure power markets
- To provide accurate information to the whole market, ensuring transparency
- To provide equal access to market for everyone wanting to trade power
- To be the counterparty for all trades; guaranteeing settlement and delivery



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Our history

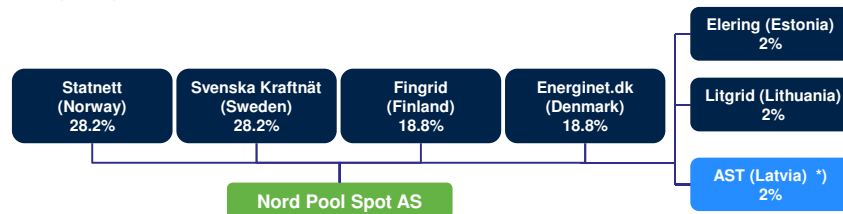
- 1991:** Norwegian power market deregulated
- 1993:** Nord Pool Spot established by the Norwegian TSO as 'Statnett Marked'
- 1996:** Rebranded to Nord Pool when Sweden joins, this is the world's first international power market
- 1998:** Finland joins Nord Pool
- 1999:** Elbas becomes the first international intraday market
- 2000:** The Nordic market becomes fully integrated as Denmark joins
- 2001:** Market Surveillance established as an independent function of Nord Pool Spot
- 2002:** Nord Pool Spot established as a separate company for short term power trading, UMM application launched
- 2005:** The Kontek bidding area in Germany opens for both day-ahead and intraday power trading
- 2008:** Financial part of Nord Pool sold to NASDAQ OMX Commodities
- 2009:** Market coupling of 11 European countries launched through EMCC (European Market Coupling Company) by Nord Pool Spot and EPEX
- 2010:** N2EX launched by Nord Pool Spot and NASDAQ OMX Commodities. Nord Pool Spot opens bidding area in Estonia
- 2011:** Elbas licenced to APX-EINDEX as the intraday market in Belgium and the Netherlands
- 2012:** Nord Pool Spot opens bidding area in Lithuania

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Stakeholders

- Owned by the Nordic and Baltic transmission system operators
- Regulated by the Norwegian Water Resources and Energy Directorate (NVE)



*) The Latvian TSO has an agreement in place to acquire 2% of Nord Pool Spot once the Latvian market is opened for trading.

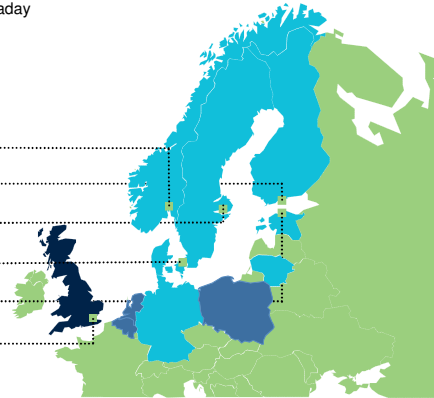
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Our locations

- The Nordic and Baltic market: day-ahead and intraday
- The UK market N2EX: day-ahead and intraday
- System provider for day-ahead and/or intraday

Norway	Oslo, Headquarters
Finland	Helsinki
Sweden	Stockholm
Denmark	Copenhagen
Estonia	Tallinn
United Kingdom	London



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The Elspot market

- An auction of power for delivery the following day
- Prices are calculated based on supply, demand and transmission capacity (how much power can be moved from one area to another)
- 77% of Nordic power consumption is bought on Elspot
- Elspot is Europe's most liquid day-ahead market, producing a robust and credible reference price



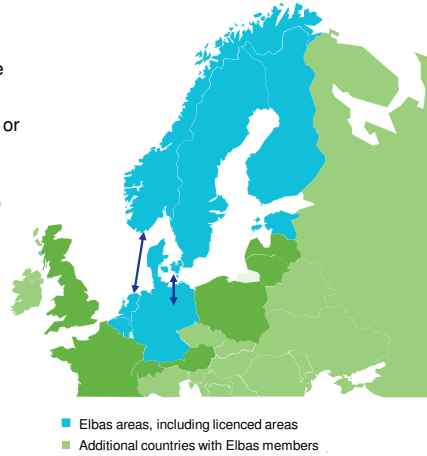
■ Elspot bidding areas in the Nordic and Baltic regions
 ↔ Interconnectors to adjoining markets

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nordpool spot

The Elbas market

- Elbas is a continuous market where power trading takes place until one hour before the power is delivered
- Members can adjust their power production or consumption plans close to delivery
- Every day, transmission system operators publish their power transmission capacity to Elbas
- Members 'offer' how much power they want to sell and buy and at what price. Trading is then set based on a first-come, first-served basis between a seller and a buyer
- If transmission capacity is available, neighbouring countries can trade on the Elbas market



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How the markets work together

Financial market

Used for managing risks. Contracts can be made for up to six years. The Elspot system price is used as reference price.

Day-ahead market - Elspot

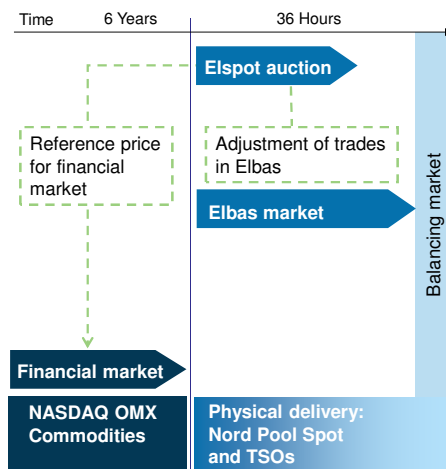
Day-ahead auction of power for delivery the next day. Nord Pool Spot calculates power prices based on supply and demand for every hour the following day.

Intraday market - Elbas

Continuous trading up to 30 minutes before delivery to adjust power production or consumption plans.

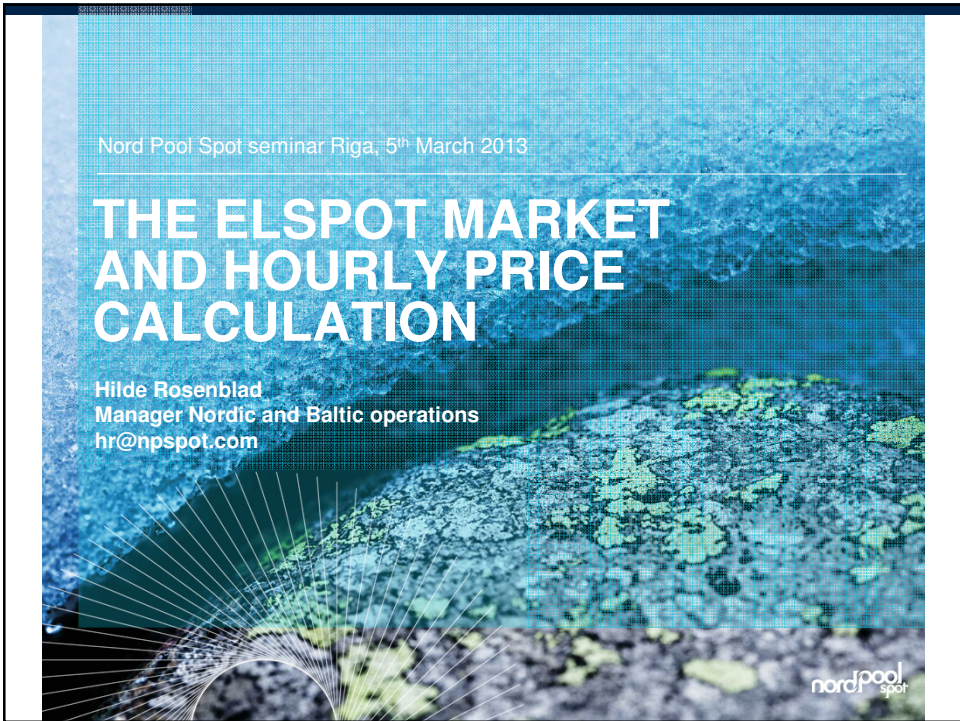
Balancing market

Operated by the respective transmission system operators. Final adjustments are made to ensure the correct frequency in the grid and security of supply.



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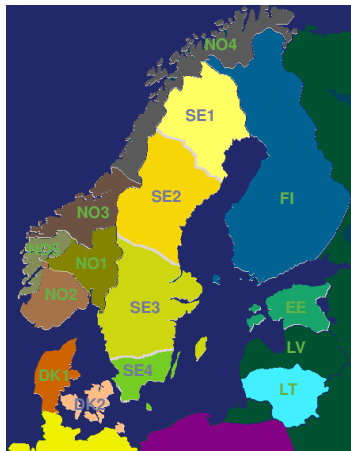
Agenda

- The Elspot market area
- Marginal pricing – area prices and system price
- Business procedures in Elspot
- Price calculation
- Area prices
- Order types

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The Elspot market area

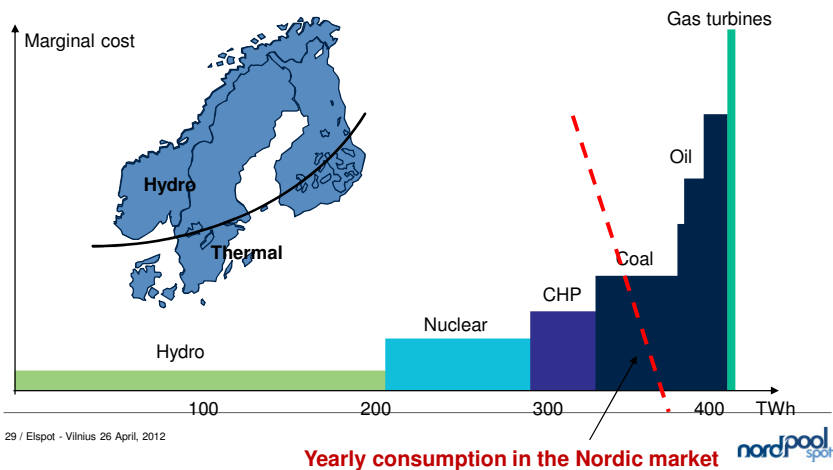


- **Bidding areas**
 - Division of grid into bidding areas decided by TSOs
 - Members submit orders bidding areas depending on placement of their generation or consumption
 - Both buy and sell orders
- **Transmission capacity**
 - Available transmission capacity between bidding areas given by TSOs.
 - All trading capacity is placed at the disposition for the day ahead market.
- **Balance responsible**
 - Each member has a responsibility to trade oneself in balance.

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Principle of marginal pricing



Elspot area price vs system price

- **Area prices**
 - The settlement price for all Elspot trading
 - Depending on congestions between bidding areas, the areas may have different prices – lower in the surplus areas and higher in the deficit areas.
 - Power always flows from lower priced areas towards higher priced areas.
- **System price**
 - Calculation of a Nordic price disregarding the transmission limitations within the Nordic region. (Norway, Sweden, Denmark and Finland)
 - Used as reference price for the financial market

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Business procedures in Elspot

- **10:00** Transmission capacities published on NPS web
- **12:00** Gate closure
- **12:02** Market coupling Nordic – Germany.
 - Calculation of flow on Baltic cable, Kontek cable, Jutland-Germany and NorNed cable
- **~12:20** NPS price and flow calculation Nordic market
- **13:00** Publication of prices in Nordic
 - Normal time for publication is around 12:30 – 13:00
- **14:00** Settlement

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Trading desk tasks related to Elspot

- Monitor systems and incoming information
 - System logs of activities and incoming NTC/ATC values and orders from participants
 - Reasonability check, missing orders view, block order view
 - Participant responsibility
- Run the price calculation
 - Market coupling procedures
 - Price calculation procedures
 - Publication of results
- Support to members
 - Telephone and e-mail

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Reasonability check

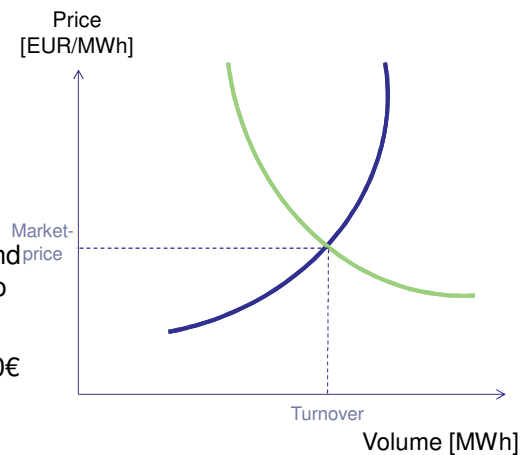
Check Results	Area	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00				
Engin	S SE4	5.4	3.6	4.2	4.3	4.2	4.0	4.0	3.6	3.9	2.5	1.7	0.9	0.1	1.0	1.8	2.3	2.7	3.2	3.7	4.6	5.6	5.7	5.6	5.2	
Engin	S SE2	5.3	3.6	3.2	3.3	3.6	4.6	4.1	3.1	3.0	3.2	2.6	2.2	1.4	0.9	1.4	2.6	3.2	3.2	3.6	3.7	3.6	3.7	3.3	4.6	
Engin	F FI	-26.2	-26.4	-24.4	-24.2	-25.0	-18.2	-20.1	-12.7	-20.4	-0.3	2.7	3.4	20.2	-28.0	-27.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	-25.0	-26.0
Engin	F M23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Engin	S SE4	7.0	3.9	31.3	13.6	-15.0	-13.8	-13.0	-13.3	-16.6	-16.4	-14.4	-6.0	-4.4	-1.6	0.8	3.4	2.5	7.5	16.4	26.4	30.0	36.6	47.8	44.6	
Engin	S SE3	1.0	0.0	0.2	1.0	1.0	0.9	1.6	2.4	2.7	2.6	1.9	2.8	2.7	1.9	1.9	1.8	1.7	2.7	1.7	1.8	0.3	2.4	1.7	2.8	
Engin	S M22	1.8	2.0	2.0	2.1	1.8	1.8	1.8	-0.3	0.1	0.1	0.2	0.1	0.4	1.1	1.0	1.2	1.3	1.4	0.6	1.2	0.2	0.6	0.8	0.8	
Engin	S SE3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
Engin	S SE4	3.2	2.6	2.8	4.3	4.3	4.6	4.3	4.7	4.6	3.2	1.6	0.2	1.2	1.6	1.5	2.7	0.5	10.0	13.7	10.5	14.3	13.5	14.2	14.2	
Engin	S SE2	3.2	3.6	3.5	3.5	3.2	2.6	1.7	0.7	0.7	0.7	1.0	1.3	1.5	1.4	1.6	0.4	0.0	0.0	0.0	1.2	3.4	3.9	3.0	3.0	
Engin	S M21	0.6	1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9	0.5	1.9	0.4	1.4	1.4	0.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
Engin	L M21	0.4	0.3	0.3	0.3	0.2	0.4	0.2	0.5	0.4	0.3	0.3	0.0	0.2	0.1	0.2	0.2	0.4	0.3	0.3	0.3	0.1	0.1	0.1	0.2	
Engin	C M1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Engin	E M22	46.6	44.3	40.0	39.2	40.2	42.0	29.5	28.2	29.8	32.9	26.0	34.0	31.4	28.7	25.8	22.6	19.2	15.9	13.9	10.1	8.8	4.8	4.7	10.1	
Engin	S SE4	40.3	40.1	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	
Engin	S SE3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Engin	S SE4	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0	2.0	2.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Engin	F M23	0.4	0.4	0.4	0.4	0.4	0.5	0.7	0.7	0.8	0.8	0.9	1.0	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	
Engin	S M21	6.2	6.2	6.1	6.7	5.6	7.8	6.1	10.4	11.0	10.5	3.8	10.7	10.8	11.1	11.3	11.1	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Engin	S SE4	47.3	43.8	37.8	25.3	19.0	25.9	0.0	1.2	15.4	14.6	6.2	4.4	10.8	20.5	25.4	52.1	9.1	6.2	12.1	21.9	34.1	38.1	33.9	37.7	
Engin	S M1	4.3	4.6	4.7	4.4	7.5	7.2	6.4	4.4	3.3	2.8	2.9	1.6	0.7	0.5	0.7	0.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Engin	S SE4	79.9	79.6	78.5	79.4	70.0	74.0	62.6	67.6	65.9	57.6	47.4	42.4	48.6	38.2	36.9	38.1	29.4	14.3	9.1	18.6	10.0	14.5	12.1	14.3	
Engin	S SE2	3.7	3.4	2.1	2.0	0.6	3.0	0.2	0.6	0.4	0.6	1.1	0.4	2.0	4.0	4.2	4.5	4.1	3.7	4.0	4.0	2.6	2.6	2.6	2.6	
Engin	S SE3	26.1	51.0	68.2	70.1	71.1	62.1	112.6	138.5	163.5	148.6	141.0	152.3	200.7	180.1	176.4	165.8	149.5	126.1	76.5	74.6	59.7	39.1	37.1	37.5	
Engin	S SE4	8.1	6.6	8.2	7.9	7.2	8.8	6.7	4.0	3.0	2.2	1.1	0.1	1.1	2.3	3.8	3.3	3.7	3.9	4.3	4.8	5.2	6.1	5.8	7.4	
Engin	S SE3	22.9	32.5	34.2	37.2	40.2	42.8	43.6	43.7	43.0	38.3	30.5	25.1	17.6	12.1	12.4	12.2	12.4	12.2	12.4	12.2	12.4	12.2	12.4	12.2	
Engin	S SE2	12.9	12.7	12.7	11.6	10.1	8.9	7.4	5.9	5.1	4.5	5.2	5.9	7.1	8.4	10.1	11.6	11.5	12.4	12.2	14.8	15.6	16.7	17.6	17.2	

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Price calculation - principles

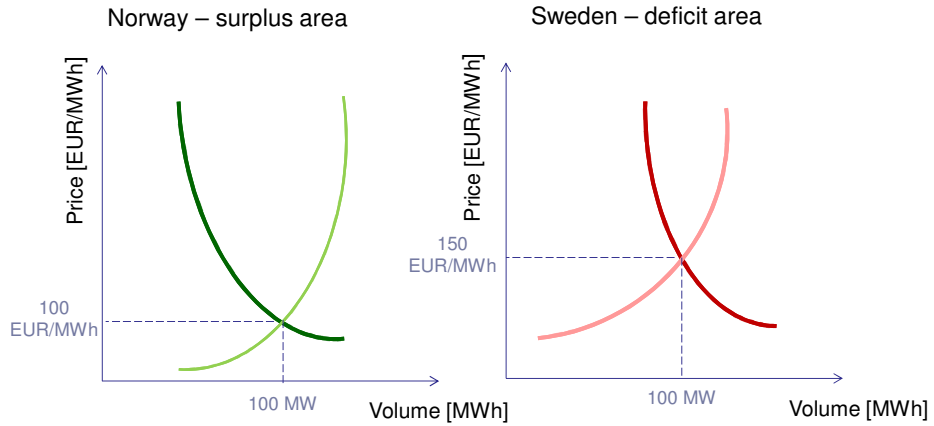
- Daily auction – 365 days per year
- Bids are received electronically
 - Gate-closure at 12:00 CET
 - Prices are calculated for the next 24 hours
- Several supply and demand curves are aggregated into two separate curves
- Min price -200€ Max 2000€
- Objective of algorithm: optimize social welfare



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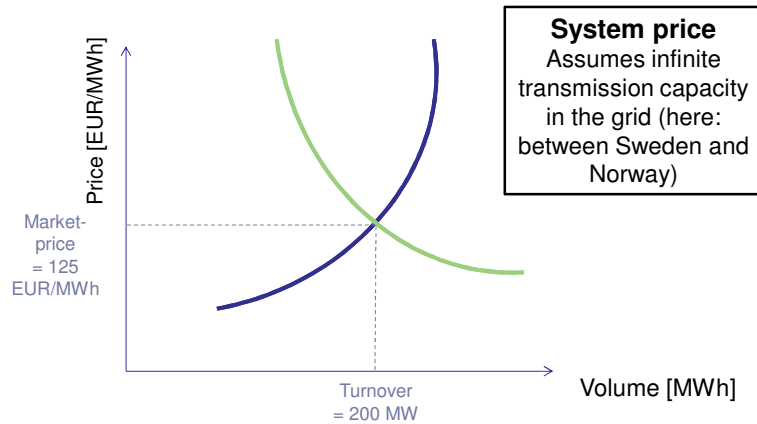
Isolated areas



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Infinite transmission capacity

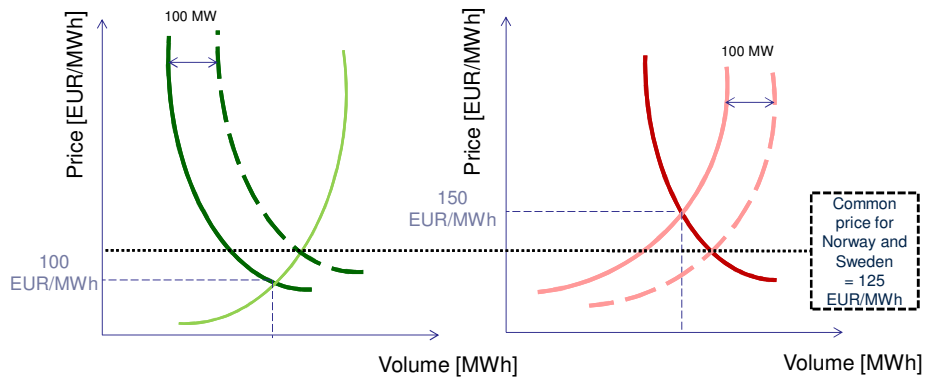


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Exchange between countries I

Norway has the possibility to export 100 MW to Sweden

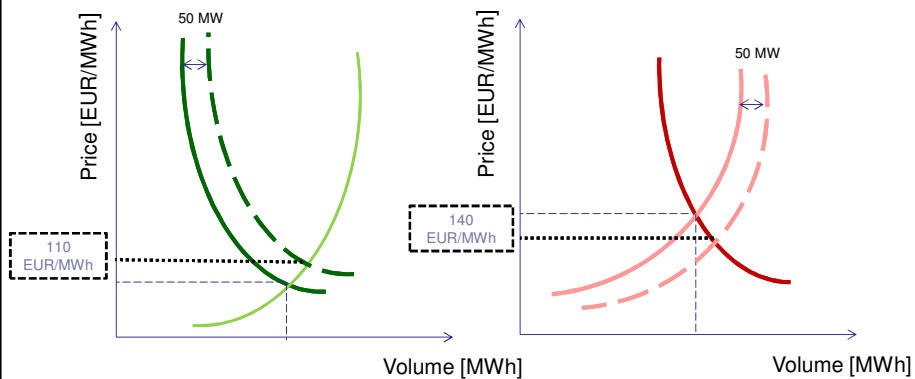


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Exchange between countries II

Only 50 MW available transmission capacity between Norway and Sweden



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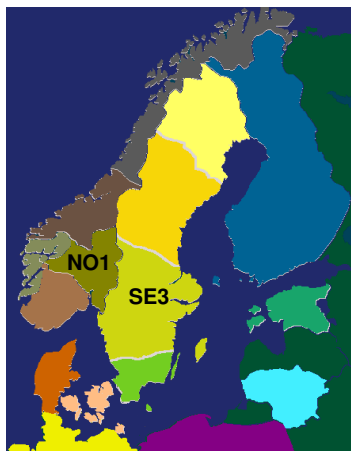
Area prices

- Price differences between areas due to:
 - Large power surpluses
 - Not sufficient transmission capacity
- Power flows from surplus area to deficit area
 - Always from areas with lower price to areas with higher price
- Transmission capacity limitations may create large price differences within a country or between countries

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Bidding Areas



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Price Areas



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Order types in Elspot

- Single hourly order
 - Price and volume given separately for each hour
- Block order
 - Set the all or nothing condition in order for several consecutive hours.
 - Linking possibilities
- Flexible one hour order
 - Sales order which may be accepted in an hour which fulfills the order price condition (mostly used at very high price).

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Block orders

Bid price = 75 EUR/MWh
Volume -50 MW
Hour 07:00 – 10:00
Average price = 76.65 EUR/MWh

- Member decides start and stop hour
- Block order must consist of at least three consecutive hours
- Minimum volume 1 MW
- Possible to link block orders together
 - Mother, daughter and granddaughter
- Acceptance of **sales order** when the average area price across the block period is **higher** than the order price
- Acceptance of **purchase order** when the average area price across the block period is **lower** than the order price.
- *Additional condition: The order has to be included in the price giving curves when accepted.*
 - PRB=Paradoxically Rejected Block order

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Nord Pool Spot seminar, Riga 5th March 2013

MARKET SURVEILLANCE

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Agenda

- Introduction
 - Regulatory overview
 - Role of Market Surveillance
- Market Conduct Rules
 - Disclosure requirements
 - Insider trading
 - Market Manipulation
- Investigations and sanctions



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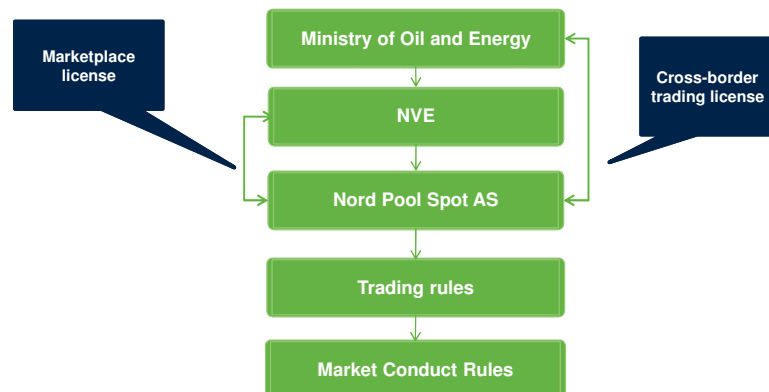
Market Surveillance - objectives

- Ensure that trading and other activities by participants are in conformity with laws, regulations and rulebooks
- Build and maintain efficiency, confidence and transparency in the market

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Regulatory regime



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Appendix 5: Market Conduct Rules

- 1 [Definitions](#)
- 2 [Specific Market Regulations](#)
 - a. [Elsport Market Regulations](#)
 - b. [Elbas Market Regulations](#)
 - c. [Special Regulations for Trading in the Estonian Electricity Exchange Area towards Latvia](#)
 - d. [Special Regulations for Trading in the Estonian Import area towards Russia](#)
 - e. [Special Regulations for Trading in the Lithuanian Import and Export Areas towards Belarus](#)
 - f. [Special Regulations for Import and Export between Lithuania and Latvia and between Lithuania and Kaliningrad](#)
- 3 [Product Specifications](#)
- 4 [Clearing Rules](#)
- 5 [Market Conduct Rules](#)
- 6 [Fee Schedule](#)
- 7 [Ethical Guidelines](#)



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Market Surveillance department

- Monitors trading activity and information published to the market
 - Elspot and Elbas
 - N2EX market
- Investigates possible breaches
- Reports to:
 - CEO of Nord Pool Spot AS
 - Norwegian Water Resources and Energy Directorate (NVE)

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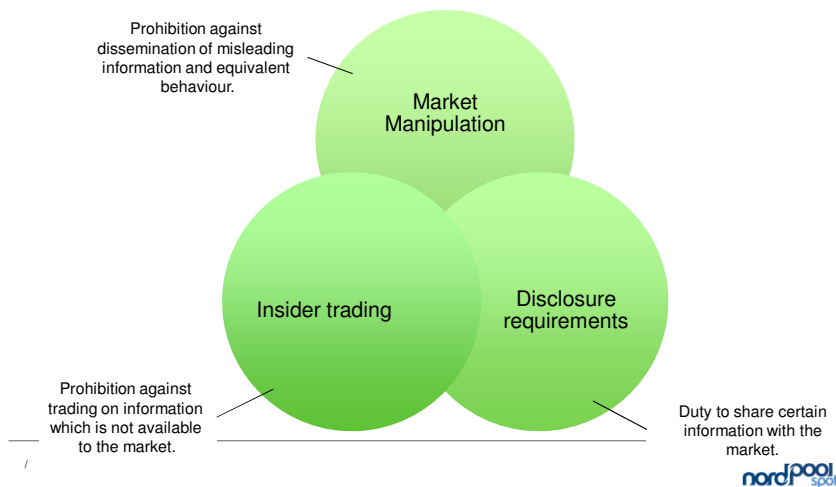
Market Surveillance is an independent unit

- Ensure the independence of employees
- Ensure that commercially sensitive information is kept confidential
- MS is operated as an independently from commercial activities of the exchange
- Information given to MS is confidential

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The Market Conduct Rules



Disclosure requirements

- 3.1 Members shall disclose to NPS any information relating to the Nordic electricity market regarding the Member's own business or facilities of which the concerned owns or controls or has the balance responsibility for in whole or in part, in particular information relevant to facilities for production, consumption or transmission of electricity, regarding:
- a) any planned outage, limitation, expansion or dismantling of capacity in the next 6-weeks period of more than 100 MW for one generator, consumption or transmission facility, or more than 200 MW for one production station, including changes of such plans;
 - b) any planned outage, limitation, expansion or dismantling of capacity of more than 400 MW for one production station, consumption or transmission facility for the current calendar year and three (3) calendar years forward, including changes of such plans
 - c) any unplanned outage or failure relating to more than 100 MW for one generator, consumption or transmission facility, and more than 200 MW for one production station, including updates on such outages or failures.
 - d) any other information that is likely to have a significant effect on the prices of one or more Products if made public.

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To be disclosed within 60 minutes

- 3.5 All information which shall be disclosed pursuant to this Section 3.1 to 3.4 shall be disclosed immediately, and no later than sixty (60) minutes after occurrence of the event which leads to the relevant information by means of an Urgent Market Message (UMM), except as specified in section 3.6



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Information required in a UMM

- Where: geographical area or interconnection
- What: relevant generator, station or line
- When: time of decision or occurrence
- Consequence: information on available capacity in MW before, during and after event
- Period: information of event start and stop
- Reason: information of the cause of the event
- Duration: information about the uncertainty in duration

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Urgent market messages (UMM)

Urgent market message

Today 09:21
[New planned outage \(maintenance\) in the grid affecting capacities Estlink](#)

Today 08:47
[Revised planned outage \(maintenance\) Estonian G1](#)

Today 08:36
[New planned outage \(maintenance\) Estonian G2](#)

[View all](#)

[Log in](#)

New planned outage (maintenance)

Message Time: 12.01.09 hour 15:48
Decision Time: 12.01.09 hour 15:25
Published: 12.01.09 hour 15:51
Company: OKG Aktiebolag
Affected area(s): SE
Station: Oskarshamnverket
Production/Consumption: Production
Affected unit(s): G1
Type of fuel(s): Nuclear
Installed effect (MW): 473
Available Production during event (MW): 0
Event start: 29.04.12
Event stop: 21.05.12
Duration uncertainty: Not applicable
Event status: Open
Remarks/Additional information:

Yearly maintenance.

Related Messages:

[2011-09-08 08:11:29](#)
[2011-03-17 14:05:01](#)
[2011-01-14 10:03:50](#)
[2010-12-09 13:20:38](#)
[2009-01-12 15:48:57](#)

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General Definition Inside Information

Defined in Market Conduct Rules section 2.1 (Nord Pool Spot).

- *“The term “Inside Information” shall mean any information of a precise nature which has not been made public relating directly or indirectly, to one or more Products, and which Members would expect to receive in accordance with accepted market practice.”*

Prohibition on Insider Trading



- 2.3 Members may not place, change or remove Bids or actively enter into Transactions in the Physical Markets when holding Inside Information, except as follows:
- When Bidding on the Elspot Market pursuant to the Elspot Market Regulations, provided that the Members does not take the inside information into consideration in its Bidding.
 - When registering or calling in Orders or entering into Transactions in Products to which the Inside Information does not relate.
 - When performing trading if the trading operations are separated from the departments where persons employed are holding Inside Information, and provided that there has been no exchange of Inside Information between the trading operations and such other departments. A Member must upon request document to NPS that the member has implemented adequate information barriers and other mechanisms between the trading operations and the department(s) or person(s) holding the Inside Information (commonly referred to as “Chinese Walls”, “Firewalls” or similar designation), which effectively prevents the disclosure of Inside Information to the trading operations.
 - In respect of trading on behalf of the Clients when the Client, to the best of the Client Representative’s knowledge, does not hold Inside Information. This exception does not apply to active portfolio management or other investment decisions by the Client Representative and the Client Representative may not give advice about a Transaction when holding Inside Information.

Prohibition of Market Manipulation

Defined in Market Conduct Rules Enclosure 1 (Nord Pool Spot).

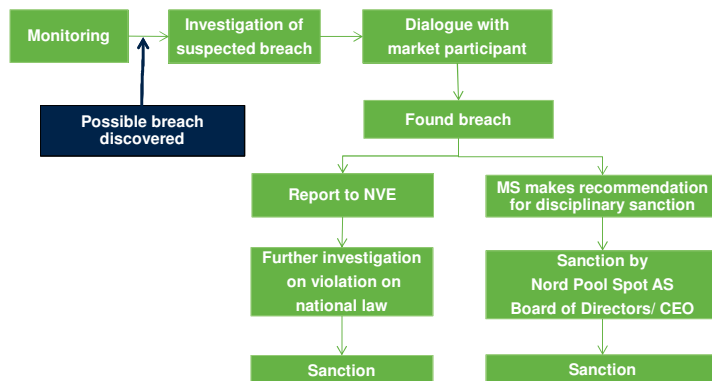
"Market manipulation shall mean:

- a) Transactions or Orders to trade:
 - (i) which give, or are likely to give, false or misleading signals as to the supply of, demand for or price of a Listed Product; or
 - (ii) which secure, by a person, or persons acting in collaboration, the price of one or several Products at an abnormal or artificial level;
- unless the person who entered into the transactions or issued the orders to trade establishes that his reasons for so doing are legitimate and that these transactions or orders to trade conform to accepted market practices as specified in section 3 below; or
- b) Transactions or Orders to trade which employ fictitious devices or any other form of deception or contrivance; or
- c) Dissemination of information through the media, including the Internet, or by any other means, which gives, or is likely to give, false or misleading signals as to Listed Products, including the dissemination of rumours and false or misleading news, where the person who made the dissemination knew, or ought to have known, that the information was false or misleading.

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Procedures for disciplinary sanctions



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Sanctions

- Sanctions to be decided by the Board of NPS on recommendations from market surveillance:
 - Issue an oral warning,
 - Issue a warning in writing
 - In the event of a serious breach, impose a Violation Charge on the Market Participant of up to NOK 2,500,000.

Investigations 2012

Investigations from MS	1 st quarter 2012	2 nd quarter 2012	3 rd quarter 2012	4 th quarter 2012	2012
Number of written investigations	37	29	29	32	127
Number of statements of breach	9	12	14	16	51
Number of written warnings	0	0	0	0	0
Number of violation charges	0	0	0	0	0
Number of cases sent to authorities	3	1	2	3	9
Number of tips received from members	4	7	8	14	33

Market Surveillance in the Baltics

	2012
Written investigations in the Baltics	21
Meetings with Baltic members	3
Training urgent market messages	4

Information from Market Surveillance



- Day-ahead market Ebas
- Intraday market Ebas
- UK market IZEX
- Power Data Services
- Market Surveillance
- Disputes and sanctions
- Reporting
- Courses and conferences
- Nord Pool Gas
- VPP auction

Market Surveillance

Confidence is a precondition for Nord Pool Spot's activities. The Market Surveillance function is key to building and maintaining this confidence.

Nord Pool Spot is internationally renowned as running the most developed and well-functioning power market in the world. Market Surveillance plays a key role in maintaining this reputation.

Confidence across the operation

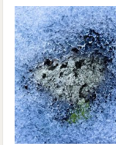
Confidence has to underpin all aspects of the operation: pricing, the transparency of price-relevant information and the operation of the marketplace. Like in other marketplaces, insider trading and market manipulation is not permitted. With this in mind, Market Surveillance monitors trading activities and investigates possible breaches of the market conduct rules. Any possible breaches on the market conduct rules and national legislation are reported to the authorities.

Focus on price-sensitive information

Essentially, Market Surveillance is looking for matters likely to have an impact on the prices, and whether this information is available to all participants. The so-called urgent market messages (UMMs) posted by participants on the exchange information system are a key arena for disclosure. Checking the quality of these messages is a central activity for Market Surveillance. Participants may consult the disclosure guidelines for urgent market messages for production and consumption and for transmission.

Contact us

If you have any questions or tips concerning irregular market behavior, please don't hesitate to contact Market Surveillance via e-mail or telephone +47 47 10 91 35 between 08:00 and 15:30 CET on weekdays. All correspondence will be handled confidentially. Telephone lines are recorded.



Developing new UMM tool

A new messaging tool to ensure easy access for publishing UMMs is currently being developed. When the project agrees on a launch date, information will be sent out to the market. Questions may be directed to umm-feedback@nordpool.com.

Did you know

Most irregularities detected by Market Surveillance are caused by mistakes or lack of knowledge. The unit therefore works actively to educate participants by answering questions, teaching at courses and seminars and visiting individual participants for tailored education.

REMIT

- At the end of 2011, the EU adopted new rules on wholesale energy trading.
- The Market Conduct Rules (MCR) are very similar to REMIT in several areas
- NPS is currently working on harmonising the Market Conduct Rules with REMIT.
- Representatives from Nord Pool Spot takes part in the following groups organised by ACER:
 - Market Surveillance Expert Group
 - REMIT implementation group

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How can members contribute to the market?

- Market Surveillance may be contacted for advice on how to comply with the Market Conduct Rules
- Members may give tips to Market Surveillance. Information given to MS is confidential. In the quarterly report MS describes how we follow up on input from members.
- Market Surveillance can assist in trainings on Urgent Market Messages or Market Conduct Rules

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Contact

Tel +47 67 10 91 35 (*this line is recorded*)

market.surveillance@npspot.com

www.nordpoolspot.com

*Correspondance with Market Surveillance is confidential.

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Latvian market setup and cross border capacity allocation

Jānis Osītis
Member of the Board
05.03.2013

Topics

1. Trade planning history:
 - before January 2010,
 - Latvian market setup presently,
 - market setup from 3 June 2013.

2. New Baltic cross-border capacity calculation rules (XBCC):
 - internal (EU) XBC,
 - XBC with 3rd countries.

3. The Baltic market setup

Latvian market setup and cross border capacity allocation

TTC calculation
Before 2010

Centralized
interchange planning
(no allocation rules):

1. Trader sent plan
2. TSO estimated
3. InterRao curtailed
4. TSO not balance responsible
5. Trader responsible for monthly balance

TTC reduced (Ignalina shut down),
NTC calculation, bilateral CC rules.
2010

Market based
interchange (EE, LT):

1. TSO models trade
2. TSO sets NTC
3. NPS handles trade
4. TSO responsible for system balance
5. Trader responsible for hourly balance

ATC calculation with 3rd
countries 3.June 2013

NPS platform
introduced in all Baltic:

6. Common Baltic TSO CC Rules
7. Common cross-border with 3rd countries (the 1st step towards common virtual bidding area)

Latvian market setup today



- Latvia is the last Baltic country opening the NPS bidding area. Improving of the Baltic electricity market liquidity will be result of the Latvia bidding area opening.
- From 18.06.2012 Latvian and Lithuanian electricity traders have possibility to trade in the NPS Estonia – Latvian cross-border trading area (ELE) based on implicit capacity auctioning.
- Joint cross-sections EE-LA+RU-LA NTC value has been divided (requirement of Latvian law):
 - ATC EE-LA = 2/3
 - ATC RU-LA = 1/3
- **AST provides all RU-LA capacity for trade between Estonia and Latvia**, while there is no bilateral trade between Latvian and Russian traders.

The Baltic cross-border trading capacity calculation rules(2)

1. LITGRID and AST calculate NTC values, taking into account available emergency reserves for dispatching to ensure return of power systems in normal operation within 15 min after N-1 fault. The following formula is used:

$$NTC = TTC_1 + \sum K * P - TRM,$$

where:

$(TTC_1 + \sum K * P) \leq TTC$;

TTC_1 - max operational transmission capacity after N-1 fault;

P - available emergency reserves in deficit area;

K- reserve power distribution coefficients considering location of the emergency and down regulation reserves;

TRM – transmission reliability margin.

2. Elering calculates NTC values by using the following formula:

$$NTC = TTC - TRM$$

If TSOs determine different capacity values in the cross-border interconnections, the lowest value shall be used.

Baltic power system cross-border CC

History: Baltic TSOs are using different bilateral XBCC rules.

March 2013 : TSOs have developed common Rules and there is arrangement to sign the following documents:

- Baltic internal cross-border trading capacity calculation rules.
- Cross-border capacity calculation rules with 3rd countries.
- Cross-border trading capacity allocation rules within Baltic states and with 3rd countries.

The goal of the Rules is to optimally use all Baltic cross border capacities for trade on different time frames (day ahead and intraday).

The Baltic cross-border trading capacity calculation rules(1)

TTC-s of cross-sections are determined based on "Stability Methodology Guidelines for BRELL loop - 2005" as well as national regulations and standards implemented and agreed into the instruction for parallel operation in the cross-border interconnections between TSOs involved, while taking into account the intersystem operation stability, planned outages and dimensioning faults in the network.

The TTC shall be calculated by the TSOs for cross-border interconnections based on the common grid model of BRELL loop.

Static load flow and dynamic simulations are performed by each TSO to determine the maximum cross-border interconnections capacity by evaluating thermal limits of the lines, voltage stability limits and generators rotors angle stability limits

Ambient temperatures for different seasonal periods shall be considered, if the relevant limitation is in force in the particular power system.

NTC - Net Transfer Capacity of the designated cross-border interconnections, is the maximum trading capacity permitted in transmission cross-border interconnections between subsystems/areas with security standards applicable in both areas and taking into account the technical uncertainties on planned network conditions.

Baltic XB capacities



XBCC with 3rd countries (1)

Available capacity calculation from 3rd countries based on mathematical modelling of flows of the power systems operation:

1. if calculated power flows doesn't exceed any NTC value of the cross-border interconnection, a step-wise iterative reduction of generation in the Baltic States is carried out.
2. Reduction of generation in the Baltic States has been performed only for power systems which are expected to be in deficit.
3. Iteration processes has been finished, when the power flow in one of the cross-border interconnection comes to NTC value or generation decreasing possibilities is exhausted.

$$ATC_{3^{rd} \text{ countries}} = Net_{intEE} + Net_{intLV} + Net_{intLT} + Net_{intKAL}$$

Net_{intXX} - net interchange of XX power system according to iteration results.

XBCC calculation with 3rd countries (2)

TSOs agree to declare the trading capacities with 3rd countries just on Lithuania - Belorussia and Lithuania - Kaliningrad borders (the 1st step towards common virtual bidding area).

TSOs are intended to establish as soon as possible a common single XB bidding area with 3rd countries (virtual bidding area), joining the XB areas EE-RU, LV-RU and LT-BY.

XB trading channels with 3rd countries



Capacity allocation process

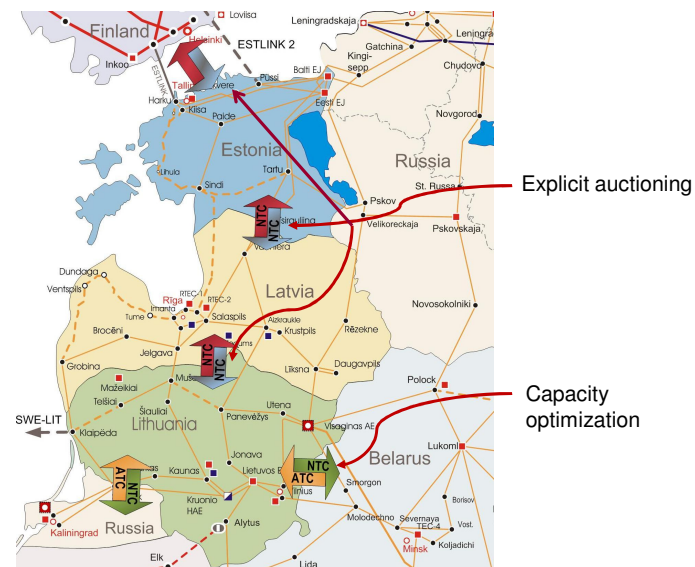
Capacities for trade Estonia-Latvia will be set equal to NTC of technical cross sections EE – LV + RU – LV.

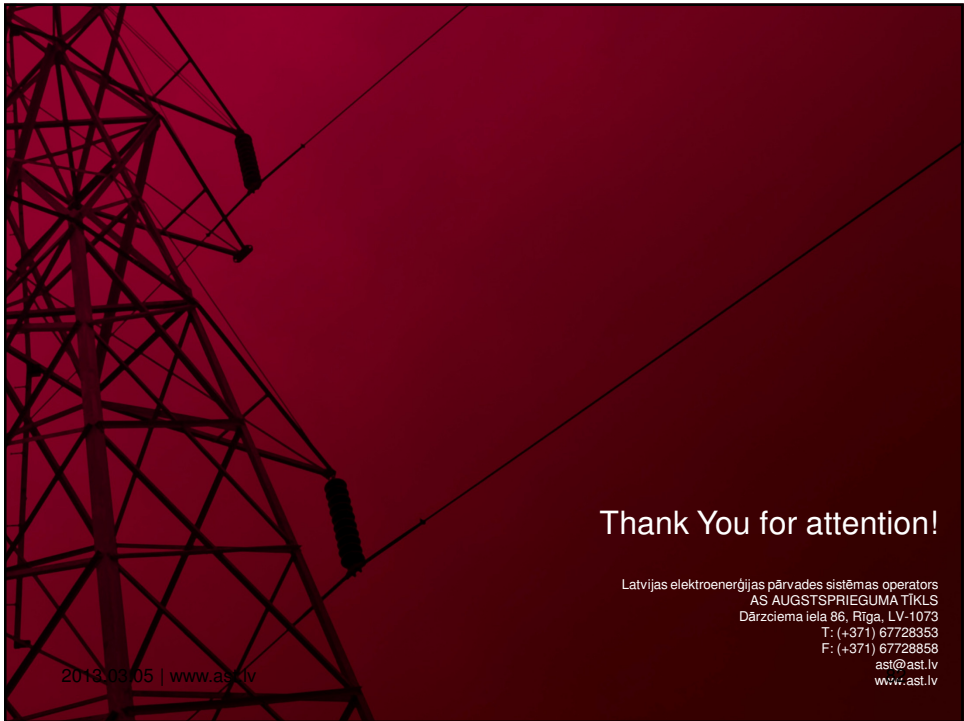
Once TSOs agree on XB trading capacity values they are submitted to NPS for allocation.

Estonia-Latvia and Latvia-Lithuania trading capacities are allocated to the market only via implicit auction performed by NPS.

Trading capacities between 3rd countries and Baltic power systems are allocated by NPS via capacity optimization method.

According to Baltic Rules the following XB trading channels are set:





Nord Pool Spot seminar Riga, 5th March 2013

SETTLEMENT AND COLLATERALS

Kjetil Bundli
Risk Manager
kjetil.bundli@npspot.com

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Settlement and Collateral Call

- Clearing
 - All transactions are automatically and mandatory subject to clearing
- Delivery
 - Nord Pool Spot and members send Elspot positions to system operator
- Settlement
 - Daily cash settlements
- Collateral Call
 - Stipulated daily based on anticipated future net purchases

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Settlement

- Nord Pool Spot is counterpart for all transactions
- Daily Settlement
 - Automatic
 - Invoice +1 banking day
 - Self-billing invoice +2 banking days
 - Norwegian banking calendar
 - Transactions based on automatic credit/debit every banking day
- Settlement currency is equal to trade currency for portfolio
- Automatic transmission of account balance

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Settlement cycle

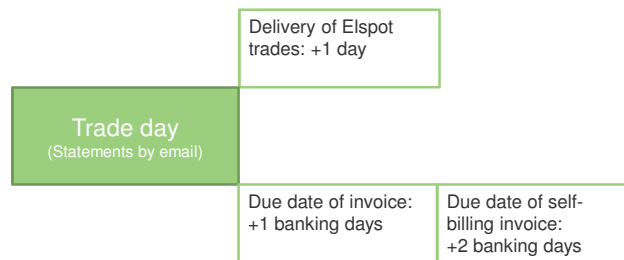
- Settlement day
 - Trading is completed by 14:00 CET
 - SETS is started right after 14:00 CET
 - Statements are received by participants the same afternoon
- Settlement day +1 banking day
 - Participants receive Collateral Call within 09:00 CET
 - Invoices are due 11:00 CET (automatic settlement)
 - Collateral Calls must be met by 11:00 CET
- Settlement day +2 banking days
 - Self-billing invoices are deposited

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Invoicing

- Invoice/self-billing invoice for Elspot
- Invoice interval is 2 business days (day 0 to day 2)



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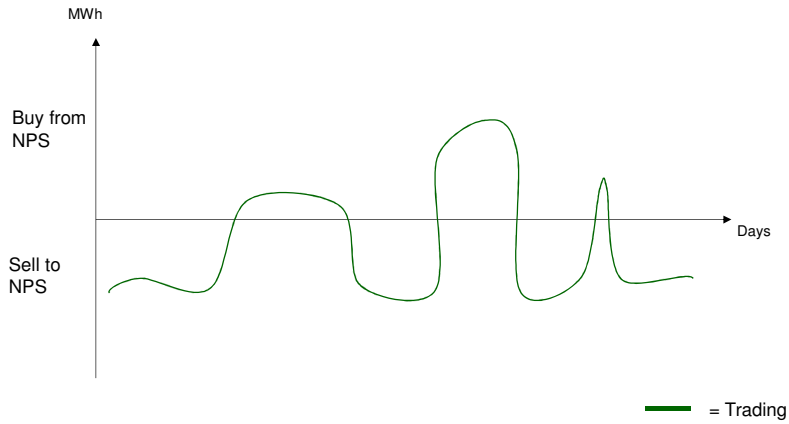
Collateral Call

- Daily stipulation of Collateral Call
 - Rolling net position for last 7 days of trades used to anticipate future net purchases
 - Average of the invoiced cash settlements to be paid for the last 7 days multiplied by 7, but not less than the minimum security requirement
- Sellers post minimum collateral requirement
 - Outstanding self-billing invoices act as collateral
- Buyers post collateral minimum enough to cover Collateral Call
 - Cash on pledged bank account
 - On-demand bank guarantee
- Collateral can be posted in EUR/SEK/DKK/NOK

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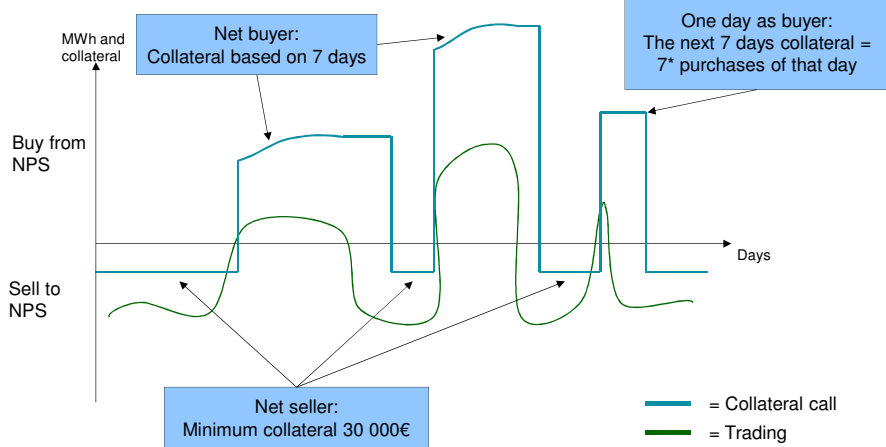
Collateral Call (2)



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Collateral Call (3)



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Statements and Security Reports

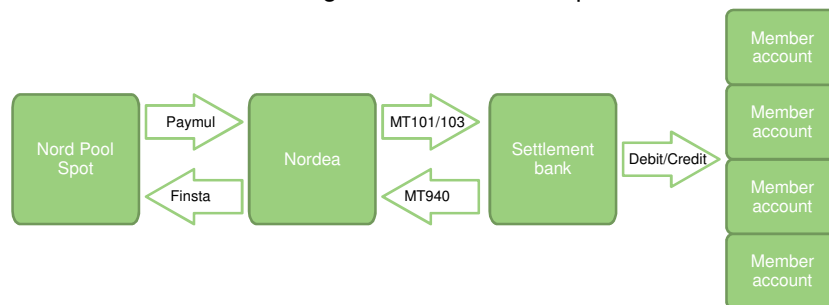
- Statements contain invoice/self-billing invoice and specification of transactions per market and hour
- Security Reports show summary of settlement and required amount of collateral to be posted
- Statements and Security Reports
 - Daily distribution each afternoon/morning
 - Password protected pdf sent by email
- Trade summary reports
 - Weekly per calendar week
 - Monthly per calendar month
 - Upon request for requested time period

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Electronic communication

- SWIFT payment instructions and end-of-day balance message
- Settlement amount, collateral requirement and balance is in the settlement bank's Margin and Settlement report



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Settlement banks

- Members can use any settlement banks operating in our market
- Some of today's banks
 - Danske Bank
 - Deutsche Bank
 - DNB
 - Handelsbanken
 - Nordea
 - SEB
 - Swedbank

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Settlement Banks in Latvia

- So far the following banks have shown interest and are in the process of signing the necessary agreements:
 - Danske Bank
 - Nordea
 - SEB
 - Swedbank

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Specifics for Latvia

- Trade and Settlement currency is EUR/SEK/DKK/NOK
 - Bank account in settlement currency in settlement bank
- Collateral Call is covered by EUR/SEK/DKK/NOK
 - Guarantee only or pledged bank account (waiting for final conclusive talks later this week with Latvian Settlement Banks)
 - Latvian Settlement/Guarantee Banks or from other countries
 - Minimum collateral requirement is € 30.000 or equivalent
- VAT not included in statements
 - Members must themselves handle VAT

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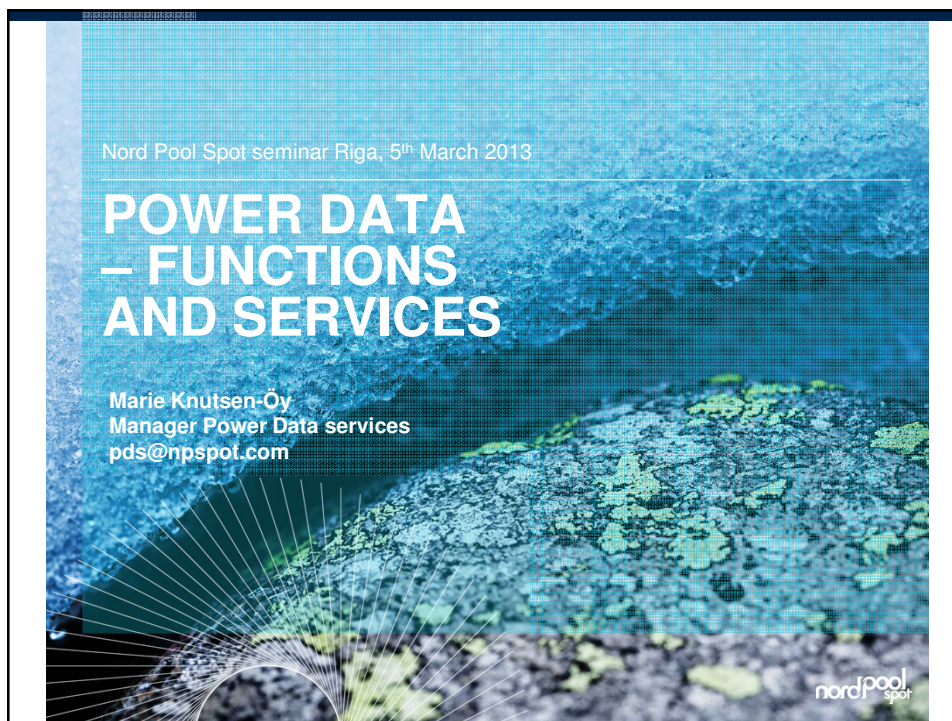
Thank you for your attention

- Kjetil Bundli
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- www.nordpoolspot.com



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High degree of transparency – one of the keys to the Nordic success

- Nord Pool Spot has historically been at the forefront when it comes to publishing relevant information that the market participants need.
- A prerequisite for a well functioning, competitive and efficient market is that all players have access to relevant and equal information.
- NPS ensures high degree of market transparency through rules, regulations and agreements connected to operation the exchange.

Nord Pool Spot – an important platform for transparency

Nord Pool Spot work with transparency in many different ways:

- Publish transmission capacity's, Elspot and Elbas prices on NPS website
- Urgent market messages (UMM)
- Market Conduct rules
- Publishing power system data and regulating power data on behalf of TSOs fulfilling their legal requirements in accordance with national and EU-legislation

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Orientation on NPS website

Nord Pool spot's website contains lots of dynamic market data, urgent market messages and other important market information.

The screenshot shows the Nord Pool Spot website interface. Key sections include:

- System price:** Displays current market prices for EUR, NOK, SEK, and DKK.
- Elspot prices:** A table showing hourly electricity prices for various regions (BY9, NO1, NO2, NO3, NO4, NO6, SE1, SE2, SE3, SE4, FI, DK1, DK2, DE, EL, LT) across different time periods.
- Elbas:** Information regarding transmission capacity and power system data.
- Market data:** Overview of market statistics and trends.
- Urgent market message:** Real-time alerts regarding system status and operational changes.
- Maps:** Interactive maps showing power system overviews and Nordic power systems.
- Downloads:** Access to historical price curves and market data.
- Power Data Services:** Information for users seeking specific data services.

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Data download from the website

- Historical data can be found under downloads for the present year and two years back.
- Longer data series is available in the Nordic and Baltic FTP server.

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Power Data Services

- FTP servers
- NPS XML Feed
- SMS service
- Country and area reports
- Customized Data Collection

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Nord Pool Spot's FTP service

One of the most comprehensive data library of any multinational power market. Some of the data is covering 20 years.

Nordic & Baltic FTP

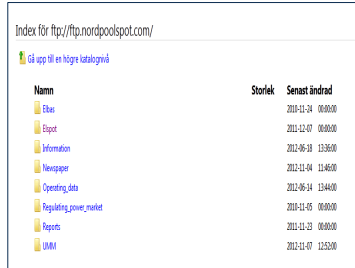
Historical files containing market data for NPS physical markets Elspot and Elbas, as well as power system data for the Nordic countries, which is continually updated during the day.

The FTP service are structured in to different products containing different catalogs.

N2EX FTP

Historical files containing market data for N2EX physical markets in UK from 2010 and onwards.

The data in the FTP servers are stored in csv, sdv and/or xls files.



Namn	Storlek	Senast ändrad
Elbas		2010-11-24 00:00:00
Elspot		2011-12-07 00:00:00
Information		2012-06-18 12:36:00
News paper		2012-11-04 11:46:00
Operating data		2012-06-14 12:44:00
Regulating power market		2010-11-05 00:00:00
Reports		2012-11-23 00:00:00
UMM		2012-11-07 12:52:00

Power market news line

- Power market news line feed solution offers a cost-effective internet-based feed of both power market and power system data.
- The feed solution use of XML which enables offers continuously updated data close to real-time, maximum delay of 0, 5 seconds.
- It offers high reliability as well as a Web Service resending mechanism for historical data up to 3 months back in time.
- The service includes re-distribution of data to end users.

SMS service

Prices via SMS for Elspot and N2EX

Elspot prices are sent via SMS every day just after they have been calculated and published.

Nordic/Baltic SMS

NPSpot 01/03/13 EUR
 Sys 40,44 (+0,37)
 Lu39,90 Sun39,90
 Sto39,90 Mal39,90
 Hel39,90 Arh42,88
 Cph43,54 Osl40,72
 Krs40,72 Brg40,72
 Thm40,13 Tro40,13
 Mol40,13 Est38,15
 ELE39,80 Vil41,30

Oms1136,46GWh

Access to Power Data Services

Nord Pool Spot Participants can access the Nordic FTP server free of charge & **N2EX Participants** can access N2EX FTP server free of charge.

The member access includes license use, store and process the FTP Information within the company and its affiliates.

License to redistribute data outside the company and its affiliates are included in the Feed service and FTP Re-distribution.

All Power Data services can be accessed by sending an e-mail to pds@npsot.com

Product	Price	Currency
FTP servers		
Nord Pool Spot FTP server		
1. Physical markets (including Elspot and Elbas)	1 200	EUR
2. Operating data (including production, exchange etc.)	1 200	EUR
Nord Pool Spot FTP products 1-2		
FTP re-distribution 1 area	5 000	EUR
FTP re-distribution 2 areas	9 000	EUR
<small>Nord Pool Spot Participants can access this FTP server free of charge. Nord Pool Spot Clients, Academic & Research Institutions & System Developers receive 50% discount.</small>		
Nord Pool Spot N2EX FTP server		
1. Auction	500	EUR
2. Prompt & Spot	750	EUR
FTP products 1-2	1 000	EUR
FTP re-distribution Auction	1 500	EUR
FTP re-distribution Prompt & Spot	2 000	EUR
N2EX re-distribution products 1-2	2 750	EUR
<small>N2EX Participants can access this FTP server free of charge. Academic & Research institutions & System Developers receive 50% discount.</small>		
Nord Pool Spot power market news line feed		
Feed product 1. Elspot data	5 400	EUR
Feed product 2. Operating data	3 800	EUR
Feed product 3. Regulating market	1 800	EUR
Feed product 4. UMM	3 600	EUR
Feed products 1-4	12 000	EUR
Feed product 5. N2EX Prompt & Auction data	2 500	EUR
SMS price service		
Elspot price via SMS	1 300	NOK
Elspot price via EDI	1 200	EUR
N2EX price via SMS	90	EUR
Reports		
Norwegian area 1	4 000	NOK
Norwegian area 2	4 000	NOK
Norwegian area 3	4 000	NOK
Norwegian area 4	4 000	NOK
Norwegian country report	6 900	NOK
Nordic electricity market information	7 200	NOK
Excel files 01	5 500	NOK
Excel files 21	2 100	NOK
Other services		
Customized data collection	175	EUR/Hour

Contact PDS

General data questions pds@npspot.com

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Nord Pool Spot seminar Riga, 5th March 2013

PROCESS OF JOINING NORD POOL SPOT

Hando Sutter
Regional Manager Baltic
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Members categories

1. Participant
2. Client
3. Client representative

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Statuses potential traders in LV area

1. Nord Pool Spot member
2. Daughter company of Nord Pool Spot member
3. New Member of Nord Pool Spot

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www.npspot.com

The screenshot shows the Nord Pool Spot website interface. At the top, there is a navigation bar with links for 'HOME', 'DOWNLOAD CENTRE', 'HELP', and 'CONTACT US'. Below this is a search bar and a secondary navigation bar with 'Market data', 'Market news', 'Trading and services', 'The power market', and 'About us'. The main content area is titled 'Day-ahead trading at Elspot'. On the left, there is a sidebar menu with various links, including 'Day-ahead market Elspot', 'Order types', 'Settlement', 'Collateral', 'Fees', 'Rules and regulations', 'List of members', 'Intraday market Elbas', 'UK market NEXX', 'Power Data Services', 'Market Surveillance', 'Courses and conferences', 'Nord Pool Gas', and 'VPP auction'. The 'How to become a member' link is circled in red. The main content area contains a description of Elspot as the world's largest day-ahead market for power trading, followed by a detailed explanation of the trading process, including system and area prices. A 'Did you know' section on the right features a map of Sweden divided into four bidding areas (Luleå, Sörmland, Stockholm, and Pålå) and a note about the 2011 decision to divide Sweden into four bidding areas. At the bottom, there is a 'Download centre' section with links to user guides and product sheets.

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Steps to become a member:

1. Submit an application to Nord Pool Spot AS – with the following information (application form is available):

- The company's full name, registered address and registration number.
- An original transcript of the company certificate (in English), no older than one month. (signatory right must be possible to read)
- The company's most recent annual report. For newly established companies: the opening balance sheet.
- For trading in Elspot: state the price area(s) in which you wish to trade: Latvia (LV, LRE and LRI)
- State the trading currency EUR/NOK/SEK/DKK you will use in Elspot trading.
- For Clients, the Client representative will submit this information.
Please send the application to: hando.sutter@npspot.com

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Steps to become a member:

2. Signing a trading agreement:

- When Nord Pool Spot has received all the information stated, a [Participant agreement](#) will be sent by e-mail as pdf for the applicant to print in two copies for both parties to sign.
 - For Clients, Nord Pool Spot will forward a pdf version of the [Client agreement](#) to the Client representative for print out and sign by all three parties Nord Pool Spot, the Client representative and the Client. Three (3) copies of the agreement is required.
- *Current members of Nord Pool Spot having active ELE or LTLV portfolios should resign their Annex 2 of Participant agreement.

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Steps to become a member:

3. Submit name of Contact person for the Agreement process

- Fully name, e-mail address and phone/fax numbers.

*Not applicable for Clients.

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Steps to become a member:

4. Open a bank account and post the collateral call

- Establish a [pledged](#) or [non-pledged cash](#) account for settlement and collateral in [settlement banks](#) approved by Nord Pool Spot.

5. Security requirements for trade

- Before trade can begin, members must post a minimum-security amount - either as an on-demand bank guarantee or as cash in the pledged bank account.

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Steps to become a member:

6. Present a balancing agreement with the transmission system operator or an open supplier

- The company's balancing responsibility has to be taken care of by the company itself or through a client representative. This is done through an agreement with the transmission system operator (TSO) in the respective bidding areas or with open supplier having balancing agreement with TSO.

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Current ELE and LTLV portfolios

Current members having portfolios either ELE or LTLV areas should terminate them starting from June 3rd, 2013

- Member should decide if they just close their portfolio(s) or open also new one in new LV area
- The applications should be sent to NPS by the end of March latest in order to have enough time for resigning of the Agreements.

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Trading fees (excl VAT)

Variable trading fee

Elspot	EUR/MWh 0.035
Elspot - small participants*	EUR/MWh 0.13

Variable settlement fee

Settlement fee	EUR/MWh 0.0025
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Annual fixed fee

Participants**	EUR 15 000
Client Representatives	EUR 15 000
Clients	EUR 1 500
Additional country access/portfolio	EUR 1 500

*Participants at Elspot can waive the annual fee and pay a higher variable fee of EUR/MWh 0.13. There is a EUR/year 3 000 floor for the sum of volume fees in a calendar year. Volume fee of EUR/MWh 0.13 is invoiced through the year and the floor verified at the end of the year.

**An annual fee reduction is offered for 2013 to participants trading in Latvian area only: 10,000 EUR

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Trainings and testing

UMM training

April 16th includes new UMM application training and run through of Market Conduct rules.

SESAM hands on training

May 13th open for all the participants
registration: EllenCharlotte.Stavseth@npspot.com

Participant testing (via Web)

May 23rd and May 24th

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Bilateral meetings

During April - meetings with new Latvian participants

- explaining the market setup
- going through the joining process details
- membership agreements details
- settlement and collateral issues

Please send the meeting request and best suitable time for You:
hando.sutter@npspot.com

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Time line

- March 14 – UMM test environment is available
- May 10 - membership agreements should be signed
- May 23-24 – trading system testing
- May 24 – settlement agreements should be signed and collateral set
- June 3 – first delivery day (LV opens for bidding week earlier)

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