FI/RU electricity exchange area setup

Daily routines at Nord Pool Spot

Time (CET)	Action
9:30	**Transmission capacities published on NPS web** Daily at 9:30 CET the relevant TSOs submit the available transmission capacity (ATC) for the day ahead to Nord Pool Spot. The ATCs are submitted for both the 1-way and 2-way connections. The ATCs are checked by Nord Pool Spot and finally published on Nord Pool Spots website at 10:00 CET.
12:00	**Gate closure** Participants submit orders in the relevant Elspot bidding areas until gate closure at 12:00 CET. After gate closure, prices are calculated with other power exchanges using the Euphemia algorithm.
12:42	**Publication of preliminary prices** Preliminary results from the price calculation are published.
12:51	**Publication of confirmed prices/schedules** Confirmed results from the auction are published and sent to market participants.
14:00	**Elbas market opened for the following day** After the confirmed results from the auction become available, Nord Pool Spot open the Elbas market for the following trading day.
14:30	**Settlement** Invoices and credit notes are sent out to all participants.

Order types

In the 'FRE' area, trading on the day-ahead market is possible only using single hourly orders.

The member specifies the purchase and/or sales volume for each hour and may choose between a price dependent and a price independent order. Once the price for each hour is determined, a comparison with a member's order for that day establishes the delivery for the member.

The simplest single hourly order, also known as a price independent order, includes only two price steps: the minimum price (-500 €/MWh) and the maximum price (3000 €/MWh). A price dependent single hourly order may consist of up to 62 price steps in addition to the abovementioned maximum and minimum price limits.

With a price independent order, market participant's schedule of deliveries will not depend on the calculated price. Market participant who submits price dependent orders accept that a linear interpolation of volumes between each adjacent pair of submitted price steps will establish the traded hourly volume for that member.

In the intraday market, product types are not limited.

FI/RU electricity exchange area

The FI/RU electricity exchange area (FRE) will be used as the cross-border trading and congestion management solution for the transmission capacity allocated for 'direct trade' between Finland and Russia. This means both import and export that is done through 'direct trade' is handled using the 'FRE' area.

The nomination process for the direct trade on the Finnish side and the Russian side are fully independent of each other. The traders on both sides of the border perform their trading under the respective rules. In case there are differences between the nominated volumes in Russia and in Finland, the resulting imbalance is written to the trader's balance in Finland according to the transmission service agreement between the trader and Fingrid. Details of the capacity allocation and cross-border trade management including nominations on each side of the border are explained in more detail in the 'Capacity Allocation Agreement 2014' that can be found here.

Prices for the electricity exchange area are calculated based on the sell and buy orders in the area, and the available capacity on the connection between the exchange bidding area and the Finnish bidding area. Calculated prices are used to determine the 'direct trade' flows on the cross-border connection between the Finnish bidding area and the FI/RU electricity exchange area. Nord Pool Spot rulebook Appendix 2g, "Special Regulations for Trading in the Finnish Electricity Exchange Area towards Russia", lay out any specific rules for trading in the 'FRE' area.

Settlement

All day-ahead trades done in the 'FRE' area are settled using the calculated 'FRE' area price. The 'FRE' price may be equal to the Finnish bidding area price, or it could differ from this price. Table below illustrates which price will be used for settlement in each potential combination of available transmission capacity and submitted order types. Please note that the import/export directions are considered from the Finnish perspective i.e. "import" reflects available capacity from 'FRE' area towards the Finnish bidding area and vice versa. Situation where no settlement will be done are indicated as 'no settlement'.

		Capacity RU → FI ("import")		Capacity FI → RU ("export")	
		No	**Yes**	**No**	**Yes**
Orders	**No**	– No settlement	– No settlement	– No settlement	– No settlement
	Buy	– No settlement	– No settlement	– No settlement	– FI area price[3], or – Own area price[3], or – No settlement[5]
	Sell	– No settlement	– FI area price[3], or – Own area price[3], or – No settlement[4]	– No settlement	– No settlement
	Both	– No settlement[1], or – Intersection point[2]	– Intersection point	– No settlement[1], or – Intersection point[2]	– Intersection point

Situation where the used settlement price may have several options are explained below:

1. In case volume at the intersection point of the supply and demand curves equals 0, no settlement takes place
2. In all other cases when there is no capacity available, settlement price will be the intersection point of the supply and demand curve
3. Settlement takes place with the Finnish area price, or 'FRE' may have its own price depending on utilization of the available transmission capacity and realized bidding volume. See examples below.
4. In case the transmission capacity is not utilized (because the lowest sales bid in 'FRE' is higher that the Finnish area price), there will be no flow from RU to FI and hence no settlement takes place
5. In case the transmission capacity is not utilized (because the highest purchase bid in 'FRE' is lower that the Finnish area price), there will be no flow from FI to RU and hence no settlement takes place

Nord Pool Spot will also publish the prices for 'FRE' area. Published prices will be same prices that will be used for settlement. In case there no settlement takes place, no price will be published.

Examples

This section contains five examples that illustrate the operation of 'FRE' area. The examples are divided into two parts: the first three examples form the first part and consider situation when there is transmission capacity available but only sell or purchase bids. The second part, consisting of last two examples, covers situations when there are both sell and buy orders.

Example 1

One trading portfolio in 'FRE' with only sell orders. Transmission capacity from RU to FI is 140 MW. Available capacity is not fully utilized (case A), or it is fully utilized (case B), and there is a flow from RU to FI. Sell order:

Price	-500	20	20.1	35	35.1	100	3000
Sales	0	0	-100	-100	-150	-150	-150

Case A: Available transmission capacity is not fully utilized. Price in FI area is 34,50 €/MWh, and equals the price in 'FRE'. This results in a flow of 100 MW from RU to FI, i.e. the trader sells 100 MW for that particular hour and this trade is settled with the FI area price of 34,50 €/MWh.

Case B: Available transmission capacity is fully utilized. Price in FI area is 36,50 €/MWh, while the price in 'FRE' area is 35,08 €/MWh. This results in a flow of 140 MW from RU to FI, i.e. the trader sells 140 MW for that particular hour and this trade is settled with the 'FRE' area price of 35,08 €/MWh.

Example 2

Two trading portfolios in 'FRE' with only sell orders. Transmission capacity from RU to FI is 140 MW:. Available transmission capacity is fully utilized and there is a flow from RU to FI. Sell orders:

Price	**-500**	**21.5**	**21.6**	**22.1**	**24.1**	**34.9**	**35**	**3000**
Sales1	0	0	-80	-80	-100	-100	-140	-140
Price	**-500**	**10**	**10.1**	**20**	**20.1**	**3000**		
Sales2	0	0	-70	-70	-140	-140		

Available transmission capacity is fully utilized. Price in FI area is 42,01 €/MWh, while the price in 'FRE' area is 20,80 €/MWh. This results in a flow of 140 MW from RU to FI, and following outcome for the two traders:

- Trader with sales bid 1: 0 MW
- Trader with sales bid 2: sell 140 MW (because of the lower selling price compared to the other bid), this trade is settled with the 'FRE' area price of 20,80 €/MWh.

Example 3

One trading portfolio in 'FRE' with only sell orders. Transmission capacity from RU to FI is 140 MW. Available transmission capacity is fully utilized but there is no flow from RU to FI. Sell order:

Price	-500	20	20.1	35	35.1	100	3000
Sales	0	0	-100	-100	-150	-150	-150

Available capacity is not fully utilized. Finnish area price will not be effected by 'FRE' price because FI area is in balance without importing capacity from 'FRE', and because 'FRE' capacity is offered at a higher price that the FI area price (i.e. price in FI area is

15,50 €/MWh while the price in 'FRE' area is 20,00 €/MWh. There is no flow, no settlement takes place and no price is published.

Example 4

One trading portfolio in 'FRE' and both sell and purchase orders. No capacity between RU and FI is available. Order:

-500	0	20	35	35.1	3000
100	100	100	100	-100	-100

There is no available capacity and price curves intersect at the price point 35.05 €/MWh (where volume equals 0 MW). There is no flow, no settlement takes place and no prices are published.

Example 5

Two trading portfolios in 'FRE' and both sell and purchase orders. There is no available capacity (case A) or there is capacity available (case B).

Case A: There is no available transmission capacity. Orders:

	-500	0	20	20.1	35	35.1	3000
Purchase	140	140	140	140	140	0	0
Sales	0	0	0	-100	-100	-100	-100

There is no transmission capacity available. The supply and demand curves intersect at price point 35.028 €/MWh, while the price in 'FRE' area is 35,00 €/MWh. Results for the portfolios are equal 100 MW, except for the difference in result type: purchase/sell. Settlement is done using the purchase/sell -intersection price.

Case B: Maximum transmission capacity is available to both directions. Orders:

	-500	10	24	30	35	40	42	43	3000
Purchase	200	170,24	170	160	150	140	130	120	0
Sales	0	-140	-140	-140	-140	-140	-140	-140	-140

Supply and demand curves intersect at price point 23,68 €/MWh. Price in FI area is the same 23,68 €/MWh. This results in a flow of 30 MW from Finland to Russia, while the results for both portfolios are:

- Trader with purchase bid: purchase 170 MW
- Trader with sales bid: sell 140 MW

Settlement is done using the purchase/sell -intersection price.