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Søknad om utvidelse av gjeldende markedsplasskonsesjon eventuelt utstedelse av ny markedsplasskonsesjon

15 December 2020

Nord Pool EMCO søker om utvidelse av virkeområde for markedsplasskonsesjon, eller eventuelt utstedelse av ny markedsplasskonsesjon, for organisering av daglig auksjon i budområde NO2 med implisitt håndtering av North Sea Link – NSL kabel – i markedskobling med daglig auksjon som organiseres i UK.

NSL kabel er forventet å bli satt i drift fra Juni 2021 og døgnauksjon i NO2 kan opprettes fra det tidspunktet etter idriftsettelse av kabelen som Statnett og National Grid bestemmer. Auksjonen i NO2 blir således koblet til Nord Pool's allerede etablerte døgnauksjon i UK slik denne vil bli organisert fra 1. januar - første dag etter Brexit.

Dersom eierene av NSL kabel, Statnett SF og National Grid NSL Ltd, ønsker kan det også på et senere tidspunkt være aktuelt å organisere intradagauksjoner som avholdes en eller flere ganger nærmere leveringstidspunktet.

Vedlagt er nærmere beskrivelse av auksjonen, bakgrunn for å etablere en slik auksjon og vurdering av hvilken påvirkning auksjonen kan ha på markedet. Vi beskriver også noen vurderinger som er gjort med tanke på evt fare for misbruk av markedsmakt og markedsmanipulering i budområdet.

Etter avtale er det vedlagte dokumentet formulert på engelsk.

Med vennlig hilsen,

Hans Randen
Director of Market Coupling

Nord Pool European Market Coupling Operator AS

Application for extension of Marketplace license

North Sea Link – GB-NO2 Auctions

Summary

Statnett SF and National Grid North Sea Link Ltd together are constructing an electricity link between Norway and the UK, the North Sea Link (NSL). The high voltage subsea cable from Kvilldal (NO2) to Blyth in UK will connect the electricity system of the two countries and is planned to be put in operation in June 2021.

Nord Pool European Market Coupling Operator (Nord Pool EMCO) has been awarded a contract by Statnett and National Grid NSL to deliver and operate a trading solution outside of the Internal Energy Market (IEM). Initially, the solution will offer a day-ahead implicit auction linking the GB and NO2 markets. The exact date for start-up of the Day-ahead auction will be decided by Statnett and National Grid NSL. Later, the day-ahead auction might be joined by a series of intraday implicit auctions.

Initially, the GB-NO2 auction will be organized as a day-ahead auction, in similar fashion as the SDAC auction. The gate closure time of the GB-NO2 auction is set earlier in the day to give participants sufficient time to prepare their orders to participate in SDAC after conclusion of the GB-NO2 auction.

It is anticipated that a separate iteration of the already existing Euphemia/PMB (as currently used for SDAC) system will be the basis for the new trading platform for the matching of orders and calculation of implicit flows across the cable. The same bidding format as SDAC will be used, lowering the barriers for market participants to offer liquidity in both the GB-NO2 auction and SDAC.

The new GB-NO2 auction will be added as a new market offering in the Nord Pool rulebook. It shall not be needed for existing market participants to sign an additional participant agreement with Nord Pool either for trading or settlement/clearing.

The fee structure for participating in the GB-NO2 auction shall be set independently from other markets/services provided by Nord Pool.

The proposed market design for the GB-NO2 auction is considered to have a very good chance of developing into a well-functioning market. The key success factors are that sufficient liquidity is generated in Nord Pool's GB-NO2 auction and that market participants develop an active trading pattern utilizing both the GB-NO2 auction and the SDAC market to make the overall market outcome as efficient as possible.

In the functional design of the GB-NO2 day-ahead auction, Nord Pool EMCO will utilize as much as possible of existing components and solutions. Therefore, the solution comprises of modern and well-tested services which are already in use in the IEM.

Nord Pool EMCO will ensure that our activities related to the organization of the GB-NO2 auction are kept separate from other activities by keeping separate accounts for the activities related to the GB-NO2 auction. A regular evaluation of the auction will be natural as it is new to organize an additional auction to the SDAC in NO2.

Contents

Background

Statnett SF and National Grid North Sea Link Ltd together are constructing an electricity link between Norway and the UK, the North Sea Link (NSL). The high voltage subsea cable from Kvilldal (NO2) to Blyth in UK will connect the electricity system of the two countries and is planned to be put in operation in June 2021.

Nord Pool European Market Coupling Operator (Nord Pool EMCO) has been awarded a contract by Statnett and National Grid NSL to deliver and operate a trading solution outside of the Internal Energy Market (IEM). Initially the solution will offer a day-ahead implicit auction linking the GB and NO2 markets. Later, the day-ahead auction might be joined by a series of intraday implicit auctions.

After the end of the transition period on 31 December 2020, UK market participants will no longer be able to participate in the IEM. Therefore, Nord Pool EMCO[1] will provide alternative arrangements to offer a day-ahead market coupling solution to the GB and NO2 markets utilizing the available transmission capacity of the NSL cable. The power exchange business offering trading platform, clearing and settlement towards the market participants in GB and NO2 will be delegated to Nord Pool AS. Date for start-up of the GB-NO2 auction, after the cable is put into operation in June 2021, will be decided by Statnett and National Grid NSL.

If it should be required by Statnett and National Grid NSL later, one or more intraday implicit auctions closer to delivery, also utilizing the available transmission capacity of the NSL cable, will also be organized in the same manner by Nord Pool EMCO.

The current Market Place Licence granted to Nord Pool EMCO includes organization and operation for cross-border trade between price areas in the (IEM) day-ahead (Single Day-ahead coupling - SDAC) and intraday market (Single Intraday Coupling - SIDC). Therefore, Nord Pool EMCO is applying for an extension of the scope of our current Market Place Licence, or alternatively an additional Market Place licence, to include also organization and operation of the GB-NO2 implicit auctions.

The Day-ahead market in UK after Brexit

Nord Pool's GB market was formed in January in 2010 in response to a tender aiming to establish a liquid and transparent GB power market. It provides a robust index price for power, producing the principle index for GB day-ahead power over the past decade. Nord Pool's day-ahead market in GB is the largest most liquid GB day-ahead market with 94 TWh traded in 2019.

In September 2020, the EU Commission announced that, irrespective of a trade deal being agreed, the UK will leave the IEM from 1 January 2021. As a result, the GB day-ahead market and order books will no longer be coupled externally with the rest of Europe. Similarly, the orderbooks internally within GB will no longer be coupled.

[1] Nord Pool EMCO is a company fully owned by Nord Pool Holding AS. The Nord Pool Holding Group is constituted by the parent company Nord Pool Holding AS, and the two subsidiaries, Nord Pool EMCO AS and Nord Pool AS, separating the Nord Pool EMCO, responsible for market coupling operations, and Nord Pool, the power exchange business, into two separate legal entities.

Nord Pool EMCO is the holder of the existing Market Place license. The power exchange operations are delegated to and performed by Nord Pool AS who is the holder of a trading license in Norway.

As a result, Nord Pool's day-ahead auction in GB will be decoupled from the SDAC. The day-ahead auction will continue to be organized as a standalone day-ahead auction in GB but with an earlier gate closure time. The gate closure time in GB will be set to 10:50 CET and the aim is to publish results by 11:00 CET.

Timing of the GB day-ahead auction after Brexit is aligned with interconnector operators' explicit capacity auctions occurring earlier in the morning. The timing is also set to give sufficient time for market participants to prepare bids for the SDAC auction in Europe which has a gate closure time one hour later at 12:00 CET.

Description of the planned GB-NO Day-ahead auction

The GB-NO2 auction will be organized as a day-ahead auction, in similar fashion as the SDAC auction, coupling the NO2 bidding zone with Nord Pool's GB day-ahead market. The gate closure time will be set earlier in the day to give participants sufficient time to prepare their orders to participate in SDAC after conclusion of the NSL auction.

The trading system to be offered to market participants is already in use in several of Nord Pool's auctions. A separate iteration of the Euphemia[2] algorithm, in use for the SDAC, will be used for the matching of orders and calculation of the implicit cross-border flow over NSL. The same bidding format as SDAC will be used, lowering the barriers for market participants to offer liquidity in both the GB-NO2 auction and SDAC.

Gate closure time and timing of auction

The gate opening time – GOT – for when participants can start entering the orders to the GB-NO2 auction is planned to be two weeks prior to the gate closure time which is also the standard GOT for entering orders at Nord Pool to SDAC. Market participants will then have the possibility to place orders for weekends during the normal business days.

The gate closure time follows the planned time for Nord Pool's GB day-ahead auction at 10:50 CET. Publication of results estimated to be published by 11:00 CET. The timing of GCT and publication of results has been informally consulted with market participants in NO2. Market participants have emphasized to Nord Pool that it is important to concentrate the session on the GB-NO2 auction with the SDAC as close as possible. This timing with GCT at 10:50 CET will give market participants time to analyze the market and the trading strategy in the morning and publication of results at 11:00 CET sufficient time to prepare new orders after the GB-NO2 auction for the SDAC auction.

Based on the fact that the calculation comprises the orders of only two bidding zones and one interconnector, together with a given set of product types, it is expected that the calculation time in the algorithm for the GB-NO2 auction will be short. The algorithm is likely, for most

[2] Euphemia algorithm – Pan-European Hybrid Electricity Market Integration Algorithm. Link to public description. https://www.nordpoolgroup.com/globalassets/download-center/single-day-ahead-coupling/euphemia-public-description.pdf

calculations to find the optimal solution without running until a preset timeout of the calculation[3]. How to set the timeout parameter, how many minutes, will be evaluated based on testing of the algorithm.

Available product types in the auction

The same set of order types as we offer for the SDAC auction will be available for trading in NO2[4]. These order types are:

- Single hourly orders
- Block orders without or with volume-profile
- Linking of block orders and block orders with minimum acceptance ratio
- Exclusive groups and flexible orders

Volume resolution will be 0,1 MW – which is the same as in SDAC.

Technical price limits will be aligned with the SDAC market. Current min price is EUR – 500 and max price EUR 3000.

Calculation currency and Trading currency

The supported trading currencies for the GB-NO2 market will be EUR. Trading currency in GB will be GB Pounds Sterling (GBP) and orders submitted in GBP will be converted to EUR according to a GBP/EUR rate fetched shortly before GCT of the auction. The calculation in Euphemia will be done in EUR.

Prices in EUR will be converted to GBP according to the same currency rate as fetched shortly before the auction. Market participants in GB will receive their settlement in GBP and market participants in NO2 will receive their settlement in EUR.

[redacted]

Validation of calculation results

Nord Pool EMCO will on behalf of National Grid NSL and Statnett perform validation of the GB-NO2 auction results (based on the given ATC values and allocation constraints).

Publication of transmission capacities and results from auction

Nord Pool will publish the NSL available transmission capacity for each GB-NO2 auction on the Nord Pool website.

[3] In SDAC, which is a significantly more complex calculation, the Euphemia algorithm has a timeout set after 12 minutes. Within the 12 minutes, Euphemia finds up to several feasible solutions seeking to find one as near to optimum as possible within the timeout.

[4] Product specifications Nordic and Baltic Market Areas on Nord Pool website: https://www.nordpoolgroup.com/4a579d/globalassets/download-center/rules-and-regulations/product-specifications_nordic-and-baltics_valid-from-12-june-2018.pdf

Prices, traded volumes, and calculated cross-border flows will be published on Nord Pool's website after completion of the GB-NO2 auction.

Incident management, fall-back and back up procedures

The project parties are in the process of setting up procedures for incident handling and proper fall-back and back-up procedures for the GB-NO2 auction.

Procedures will include handling of:

- Technical issues related to TSO systems, market coupling systems, or auction systems causing any abnormal situation to the auction or market coupling processes
- Special market situations like for instance if price thresholds are reached in either of the bidding zones
- Any situation related to the cable itself that may affect the auction or market coupling process
-

Settlement and collateral

Settlement will be daily and follow the Norwegian banking calendar for participants trading in NO2 and the GB calendar for participants trading in GB. Settlement will run once per day and invoices will be based on finalized trading results, whereby payments will be due next day for net buyers and in two days for net sellers.

Nord Pool will be acting as the central counterparty and guaranteeing payment for all GB-NO2 market participants.

Collateral requirements for GB-NO2 market participants will follow the same principles as specified in Nord Pool's clearing rules. Collateral calls for the GB-NO2 auction will be netted to one total with any collateral requirements for SDAC and SIDC.

Market Surveillance

Nord Pool EMCO's market surveillance team will fulfil all regulatory requirements related to market surveillance with respect to the GB-NO2 market.

Participant agreements and conditions

The GB-NO2 day-ahead auction, and later possibly also intraday auctions, will be added as new auctions in the Nord Pool rulebook[5]. Definitions, descriptions and conditions of the auction will be integrated in the General Terms and Schedules as needed. In order to participate in the GB-NO2 auction one will need to sign a participant agreement with Nord Pool AS. If one is already a participant, it shall not be needed for market participants to sign an additional participant agreement either for trading or settlement/clearing. However, a formal application form to participate in the GB-NO2 auction will be needed from all participants.

[5] General terms and all related schedules are available on Nord Pool website. https://www.nordpoolgroup.com/trading/Rules-and-regulations/

As for all trading in any of the Norwegian bidding zones, prerequisites for participants planning to trade in the NO2 bidding zone in the GB-NO2 auction are to have a trading license, a balance agreement with Statnett, and a balance settlement agreement with eSett. Companies registered outside Norway need to register as Norwegian registered foreign enterprise (NUF) in Brønnøysund in order to handle VAT and settlement with eSett.

For the settlement, every participant in NO2 will need to have a settlement account for EUR.

Fee structure

The fee structure for participating in the GB-NO2 auction shall be set independent from other services at Nord Pool. The fee structure will consist of a fixed fee and a variable fee that depends on the volume traded.

Further details of the fee structure will be prepared.

Fulfilment of cable requirements

Transmission Losses on the NSL cable will be handled implicitly in the GB-NO2 auction in accordance with the loss handling functionality as implemented in the Euphemia algorithm and the loss factor as specified by National Grid NSL and Statnett.

Nord Pool EMCO is a balance responsible party in both GB and Norway and will perform all physical nominations in NO2 and in GB. (Nomination of the cross-border flow will be handled by National Grid).

Nord Pool will collect the cable congestion rent and transfer the settlement to National Grid NSL and Statnett according to the agreed shipping terms. The congestion rent will be in EUR.

The implicit flow calculation will respect the ramping constraints notified by National Grid NSL and Statnett. As the Euphemia algorithm will be used, the same algorithm principle on ramping will apply. Nord Pool will receive the ramping constraint values from National Grid NSL and Statnett. Ramping functionality includes also handling of last hour flows from previous days' auction results.

Nord Pool will validate the market clearing prices and the resulting cross-border flows for the GB-NO2 market as soon as possible after the market coupling results are available. The cross-border flows are validated on behalf of Statnett and National Grid NSL against the nominated ATC and applicable allocation constraints.

Expected participation and trading

In Nord Pool's GB-only day-ahead auction there are about 50 market participants trading daily. Already in January 2021 we will know more about the volume for the stand-alone auction in GB after Brexit. [redacted]

The NO2 bidding zone is typically a surplus area. In 2018 there was 33 TWh bought and 49 TWh sold. In 2019, 31 TWh was bought and 38 TWh sold. There is a strong dominance of hydro power as generation asset. [redacted]. Nord Pool has had very positive feedback from several market participants who are preparing to trade the GB-NO2 auction.

When wind generation is high and electricity demand is low in the UK, North Sea Link will allow up to 1,400MW of power to flow from the UK, conserving water in Norway's reservoirs. When demand is high in the UK and there is low wind generation, up to 1,400MW can flow from Norway, helping to ensure secure electricity supplies.

Effects to the market and to the SDAC

The proposed market design for the GB-NO2 auction is considered to have a very good chance of developing into a well-functioning market. The key success factors are that sufficient liquidity is generated in Nord Pool's GB-NO2 auction and that market participants develop an active trading pattern utilizing both the GB-NO2 auction and the SDAC market to make the overall market outcome as efficient as possible.

It is highly likely in our view that the new trading opportunity presented by the GB-NO2 market, which will effectively add up to 1400MW to the overall demand side interest with assumed NO2 to GB as the predominant direction of flow, will generate liquidity by attracting existing day-ahead market participants. Most likely (and the desired market development), there will be a close link in terms of trading activities between the GB-NO2 market and the SDAC market, which should lead to market prices tending to converge.

Market power considerations, e.g. risk of gaming

NO2 is a liquid area but there are players with significant market power. We would expect there to be a risk of gaming. Several market participants will most likely also be trading on both sides of the interconnector creating certain gaming opportunities. Nord Pool's Market Surveillance has significant experience with monitoring the markets both in NO2 and the GB, monitoring sequential markets as well as monitoring markets with shared liquidity. We will be monitoring the GB-NO2 auction in line with REMIT requirements and Ofgem's post-Brexit regime. Further, it will be a design priority to ensure that market access will be available to all willing participants, subject to the rules laid down by regulators and National Grid NSL and Statnett, to create a competitive environment thereby reducing the market power of single actors. Moreover, it is possible for Nord Pool, as a market operator of both day-ahead auctions and the intraday market, to establish arrangements for effective cross-market surveillance.

In the discussion on potential market abuse or gaming in the context of the new GB-NO2 market, it is important to separate arbitrage trading between the GB-NO2 auction and the SDAC market – which brings liquidity and increases market efficiency – and actual abuse of a participant's dominant position.

Potential for systematic price difference in GB-NO2 auction and alternate trading opportunities

Due to differences between the proposed market solution and alternative trading opportunities in the available transmission capacities in and out of NO2 and GB as well as differences in the

supply/demand balance in both areas, there is a possibility for systematic differences in prices between the two auctions in the same area. These systematic differences can create a benefit for those participants who have an opportunity to use multiple trading opportunities. In case of systematic differences, it might appear profitable to apply arbitrage/speculative strategies between markets. Under condition of perfect competition, such strategies will contribute to the convergence of prices and, therefore, efficient NSL allocation. There is, however, a risk that abuse of dominant position may contribute to systematic differences between the two auctions. It will be a priority to ensure that the market is easily accessible to all willing participants, to create a competitive environment thereby reducing the market power of single actors.

With sufficient liquidity in the new market, it is likely to believe that any potential arbitrage opportunity between the NSL- and the SDAC market will be utilized by NO2 and GB market participants that are active in both markets. Norwegian hydro producers will offer their production in the market which is the most profitable. The alternative cost of hydro production is reflected in how hydro producers price their water reservoirs and is, a bit simplified, a function of both physical and financial long-term market prices and water reservoir levels. The GB-NO2 market price will be one additional component in this consideration, indirectly affecting the pricing of hydro assets in the SDAC market. It is likely to believe that this mechanism will over time reduce the price spread between the GB-NO2 and SDAC markets.

Arbitrage opportunities between the two markets as initially mentioned may to some extent attract a more speculative trading pattern with players not necessarily being backed to 100% with physical production or consumption. However, such trading pattern increases the overall market efficiency as it will have a diminishing effect on the price spread between GB-NO2 and SDAC market prices over time.

Even though the proposed GB-NO2 market only includes the NO2 and GB bidding zones, liquidity from surrounding Norwegian bidding zones may very well indirectly contribute to the GB-NO2 liquidity. For example, a Norwegian producer that is Balance Responsible Party in NO2 could place its market interest from surrounding Norwegian bidding zones in the GB-NO2 auction and utilize the SDAC capacity allocation to move the resulting trading positions in NO2 to the bidding zone where the actual production is located. Such trading pattern requires of course that there exists sufficient cross border capacity to NO2 from adjoining bidding zone in the SDAC market.

Some uncertainty could also exist with respect to how the NO2 consumption side might react in this new market. In the GB-NO2 auction, Norwegian buyers will effectively compete with GB buyers who are likely to be willing to pay more, hence giving Norwegian buyers incentive to rather buy their consumption needs in the SDAC market. On the other hand, and given that the NSL cable during peak hours normally would export to GB, it is likely to believe that some hydro production volume will move from SDAC to the GB-NO2 auction which will be a price driver upwards for NO2 (also taking increased water values into account) in the SDAC auction. Over time it is believed that the NO2 consumption side will actively participate in the new market and generate local matching between buyers and sellers in NO2 which is a prerequisite for receiving congestion pricing.

With the factors above and given that the resulting NSL cable flow is fully considered in the capacity allocation in the SDAC market, there is a strong belief that GB-NO2 and SDAC market prices will converge over time.

Overall functional design of the day-ahead auction

In the functional design of the GB-NO2 auction, Nord Pool EMCO will utilize as much as possible of existing components and solutions. Therefore, the solution comprises of modern and well-tested services which are already in use in the IEM markets.

The following Nord Pool components will be used to provide the Implicit Auction service:

- **Auction system**

The system where market participants from GB and NO2 enter their bids and see their results. The system provides both a web-based User Interface (UI) and a REST-based Application Program Interface (API). The system is already in use by the GB market participants both for SDAC and Nord Pool's local GB Half Hourly Auction.

- **Market Coupling service**

This is the system for communication and file transfer between the ICOs, TSOs and PCR components, as well as other Nord Pool internal systems. Capacity values and allocation constraints, preliminary and final confirmations, and market results in SDAC and all other auction-based markets are directed through the Market Coupling service. It also processes market results further and provides results for other Nord Pool components. Supports Entso-e file formats used throughout Europe and contains "proxies" for interfacing with the TSOs/ICOs Nord Pool provides market coupling services for.

- **Nomination service**

The system responsible for generating the nomination files and interfacing with the TSO and ICO systems. Supports a wide range of file formats used throughout Europe and contains "proxies" for interfacing with the TSOs/ICOs Nord Pool provides market coupling services for – including NGIL, Elexon and eSett.

- **Clearing and Settlement system**

The system responsible for clearing and settlement of the market participant transactions and congestion rent payments. Also utilized for collateral management. Handles all the interfacing with the banks.

- **EMDS**

The system used for market data aggregation and publishing, both to Nord Pool's own data channels and to regulatory parties like Entso-e.

- **Currency service**

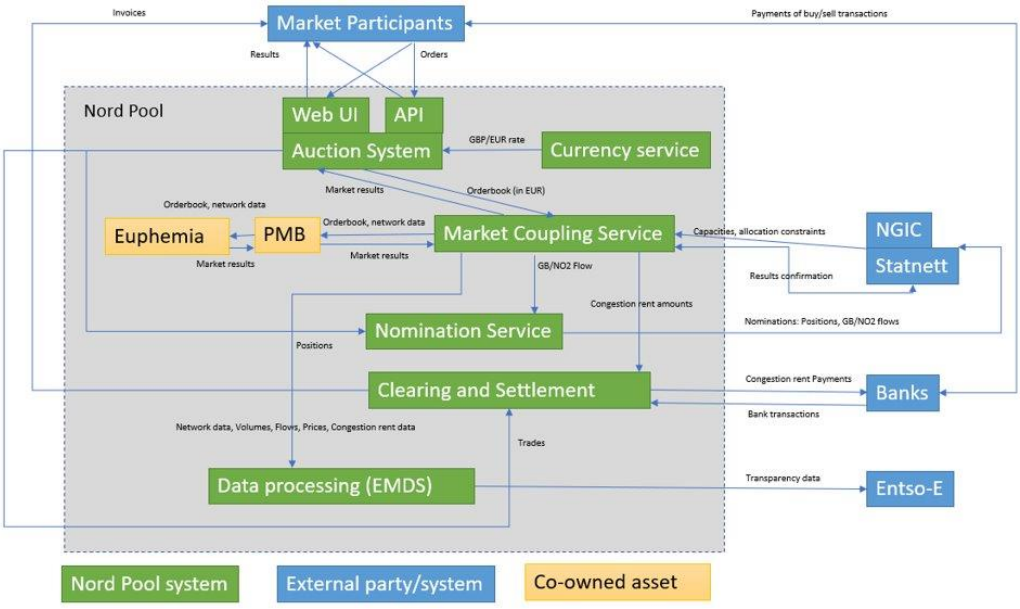
A new service dedicated for managing currency exchange rates and facilitating the currency hedging transactions.

- **The co-owned (PCR) components: PMB (PCR Matcher Broker) and Euphemia**

PMB acts as the interface between the NEMO's Market Coupling system and the Algorithm (Euphemia), providing support also for multiple Market Operator parties in the future, should that be needed. Euphemia algorithm is used also for the calculation in SDAC. Euphemia matches orders to maximize social welfare while taking network constraints provided by transmission system operators into consideration.

All these components are already in place and used to operate the SDAC market and to provide the pre- and post-coupling services for multiple commercial interconnectors.

All the interfaces presented in the diagram below, representing logical data flows, are already in place between the systems for operating the SDAC market. Either same or similar interfaces will be utilized for operating the GB-NO2 market when Nord Pool implements processes for GB-NO2 auction.



Separation of activity from other commercial activities

Nord Pool EMCO will ensure that our activities related to the organization of the GB-NO2 auction are kept separate from other activities by keeping separate accounts for the activities related to the GB-NO2 auction. The fee structure for trading shall be determined independently of fees for using other services from Nord Pool.

Evaluation and reporting

A regular evaluation of the GB-NO2 auction will be natural as it is new to organize an additional auction to the SDAC in NO2. Only after experience with how the auction works in practice will we be able to say something conclusive about its efficiency for the market and for establishing a day-ahead price and allocating capacity over NSL cable. Nord Pool EMCO, together with Statnett and National Grid NSL, will follow this closely.

Regular reporting to RME with regards to the operation and efficiency of the auction is foreseen.

Possible intraday trading solutions

If required by Statnett and National Grid NSL, Nord Pool EMCO will establish, organize, and operate intraday auctions in the same manner as the day-ahead auction. The platforms used for this will be identical.

The purpose of introducing intraday auctions would be to enable market participants to adjust their market positions after the initial day-ahead auction. Considering that the prices resulting from the day-ahead auction should reflect the underlying market there could be a limited set of reasons for wanting to participate in any intraday auctions, including:

- Changes in production or consumption schedules or price dependencies due to external changes such as wind forecasts;
- Curtailment of other interconnectors;
- TSO needs for balancing, congestion management or other purposes.

The flexible nature of the production assets and the increasing wind generation penetration in GB could form a natural basis for increasing need of intraday trading between GB and NO2.

Detailed concepts for intraday trading solutions on NSL cable has not been defined at this stage.