

CONSULTATION DRAFT – 18th November 2016

GB TSOs explanatory note for the day-ahead and intraday proposal for arrangements concerning more than one NEMO in the GB bidding zone in accordance with Article 45 and 57 of the CACM Regulation

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Disclaimer

This explanatory document is submitted by the GB I/C TSOs to the UK National Regulatory Authority for information and clarification purposes only accompanying the “The GB I/C TSOs day-ahead proposal for arrangements concerning more than one NEMO in the GB bidding zone in accordance with Article 45 of the CACM Regulation” and “The GB I/C TSOs intraday proposal for arrangements concerning more than one NEMO in the GB bidding zone in accordance with Article 57 of the CACM Regulation”.

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1. Introduction

General

This document is a common explanatory note by all I/Cs TSOs (the "TSOs explanatory note") within the GB bidding zone that have as at the date hereof been certified as TSOs, and assigned obligations associated with cross-zonal capacity allocation and other necessary arrangements in bidding zones where more than one NEMO is designated and/or offers trading services, as required by Article 45 and 57 of CACM Regulation.

This TSOs explanatory note has been jointly prepared by National Grid Interconnectors Limited, BritNed Development Limited, EirGrid Interconnector Limited and Moyle Interconnector Limited (hereinafter referred to as "NGIC", "BritNed", "Moyle" and "EWIC", respectively).

This explanatory note will be submitted to Ofgem (hereinafter "the Authority") to support the GB I/C TSOs day-ahead proposal for arrangements concerning more than one NEMO in the GB bidding zone in accordance with Article 45 of the CACM Regulation (hereinafter "day-ahead proposal") and the GB I/C TSOs intraday proposal for arrangements concerning more than one NEMO in the GB bidding zone in accordance with Article 57 of the CACM Regulation (hereinafter "intraday proposal").

This explanatory note does not place any obligations or enforcements to the GB TSOs and is not subject to Authority approval.

2. Definitions and interpretation

For the purposes of the TSOs explanatory note, terms used in this document shall have the meaning of the definitions included in Article 2 of the CACM Regulation, or the day-ahead Proposal or the intraday proposal as the case may be.

3. Background

Articles 45 and 57 of Regulation 1222/2015 (hereinafter referred to as “CACM”) require TSOs to develop proposals regarding cross-zonal capacity allocation and other necessary arrangements in bidding zones where more than one NEMO is designated and/or offers trading services.

The Authority published its decision of 14 October 2015 on GB TSO obligations under the CACM Regulation, in which the Authority stated that the TSO tasks listed within Articles 45 and 57 of CACM are obligations on TSOs that have been certified in respect of interconnectors. The Articles 45 and 57 Proposals (hereinafter “the Proposals”), and this explanatory note, are therefore prepared and submitted by National Grid Interconnectors Limited, BritNed Development Limited, EirGrid Interconnector Limited and Moyle Interconnector Limited.

The Authority published its designation of GB NEMOs on 10th December 2015. CACM states that TSOs Articles 45 and 57 Proposals are to be submitted within 4 months of the Authorities designation of more than one NEMO in a Bidding Zone, and the relevant GB TSOs therefore submitted their proposals to the Authority on 11th April 2016.

On 10 October 2016 the Authority requested an amendment to the Proposals, for resubmission by 10th December 2016, and this Explanatory document supports the re-submitted Proposals. As well as requiring additional information, to be provided in the re-submitted Proposals, the Authority has requested that the TSOs consult GB market participants. Consideration of the responses will be added to this document for the version to be submitted to NRAs in support of the amended Proposals.

Day Ahead and Intraday market coupling, as required by CACM, are being introduced via separate projects by TSOs and NEMOs. Day Ahead market coupling was implemented across IFA and BritNed borders in February 2014 within the NWE day ahead market coupling project. The Intraday project is currently under development for stepwise implementation by TSOs and NEMOs in line with their Local Implementation Plans.

Whilst Day Ahead and Intraday market coupling arrangements are to be developed as separate projects, there are some common principles relevant to Bidding Zones where multiple NEMOs have been designated, that will need to be adopted alongside the TSOs’ local implementations, and potentially to be reflected also in the Algorithms development. In high level terms, Market coupling Algorithms model the European interconnected electricity network as a series of nodes that represent the various national NEMO Order Books throughout the market coupled area. The Algorithms model the connecting of these nodes by means of cross-border interconnector capacities. The two main operational inputs to the Algorithms, per market time unit, are 1) market participants’ orders, and 2) the available cross-border capacities, and the Algorithms operations will enable Europe-wide matching of orders via the available cross-border transmission capacity.

In the case of a Bidding Zone containing more than one NEMO, arrangements are proposed that in normal coupled operation will allow the matching of market participants’ orders between the relevant NEMOs within that bidding zone, and also to enable interconnector capacity to be accessible to both NEMOs in the bidding zone. In addition in the case of Day Ahead, the proposed arrangements will ensure

the single market price for the Bidding Zone. Day Ahead and intraday specifics are set out further in the Chapters to follow.

4. Day-ahead

NGIC and BritNed participated in the North West Europe Day Ahead market coupling project (hereinafter the “NWE day ahead project”) which was implemented in February 2014. The NWE day ahead project was an early implementation project as anticipated to be required under the then future Network Codes.

During the preparations for the NWE day ahead project it was recognised that specific arrangements for GB would be required, given that there were more than one power exchange operating in GB, and in order to satisfy the requirements of the relevant anticipated network codes.

It was also recognised that power exchanges have a central role in day ahead market coupling with interfaces required between TSOs and power exchanges. With no associated TSO or NEMO roles set out in European Regulations at that stage, NGIC initiated a procurement event for market coupling related services in order to satisfy the GB specific- requirements of the NWE day ahead project.

In general terms, the key elements to be achieved by the successful tenderer were that in normal coupled operation a single price could be achieved for the GB Bidding Zone, there should be unconstrained matching of orders between the GB power exchange order books, and that orders into either GB power exchange could be matched cross-border via either of the BritNed or IFA interconnectors, to the extent that capacity is available on each, based on the Algorithm’s determination for efficient allocation of capacity. Furthermore the GB arrangements would need to be compatible with the wider NWE project.

More specifically, The requested Day Ahead solution needed to address the following:

- interfacing I/C data to and from the Algorithm. (It is an element of the High Level Architecture of Day Ahead that only NEMOs interface TSO data to and from the Algorithm).
- Validation of TSO results.
- How the Algorithm should model the intra-GB aspects, in particular the means for direct matching between GB NEMO order books, and equal access for each NEMO to the different Interconnectors’ capacities.
- How to organise Shipping and financial clearing across the Interconnectors.
- How to organise financial clearing between GB NEMOs.
- How to manage the currency exchange rate process between GB market orders (in GBP) and the market coupling process (Euro).

The accepted solution was based on the diagram below, whereby GB Bidding Zone is modelled by the Algorithm as two nodes, each with a virtually infinite interconnector directly connected between the two. Whilst this intra-GB interconnector is used purely for Algorithm modelling purposes and not existing as an ‘interconnector’ in reality, it provides a means for the high level objectives as described above, and required by CACM to be achieved. The intra-GB interconnector is modelled as being of sufficiently high capacity that it in practice it should never become ‘congested’ within the results, and hence unlimited matching of orders can be achieved until the market coupling results are completed, and hence also the

A suite of agreements between GB parties was concluded for operation within the NWE market coupling project, which, as well as providing terms for the required roles and interfaces, provided the governance for a suite of GB Procedures.

The following table contains the current agreements in place to fulfil the intra-GB requirements.

AGREEMENT	WHO BETWEEN	PURPOSE
GB Framework Agreement	I/C TSOs and GB NEMOs	Governance of GB Procedures and general organisational matters
GB Day Ahead Operations Agreement	I/C TSOs and Service provider	Intra-GB Link data handling/processing GBP FX rate requirement
GB Direct Clearing Link Agreement	GB NEMOs	Intra-GB Clearing and Settlement

The intra-GB procurement event was conducted before the legislation mandating the delivery of market coupling was in place, and the agreements that resulted, at the date of this document, remain in force as the basis for the intra-GB operation. It is anticipated that any future invitation of terms for Day Ahead and Intraday processes will be on a different basis, with CACM and the GB Day Ahead and Intraday Proposals (when approved) mandating TSOs and NEMOs to carry out various associated tasks respectively.

The Implementation of the Proposal requires agreements to be modified in line with CACM and any relevant regulatory decision following the Proposal's approval.

Day Ahead Proposal - Implementation

The Day Ahead Proposal required by CACM Article 45 contains a requirement to modify the suite of GB Agreements in line with CACM as considered appropriate to reflect the roles and obligations set out in the CACM Regulation. TSOs will therefore propose contract modifications as soon as practicable following approval of the Proposal, with amendments to be agreed upon the earlier of 1) MCO plan entering into force, or 2) 12 months after approval of the Proposal.

Existing agreements may run to their full stated expiry, although following the approval of the Day Ahead proposal they may be modified to comply with the requirements of any applicable legislation and/or the decision of a competent authority.

Whilst the original suite of TSO-NEMO contracts obligated the successful tenderer to manage the intra-GB processes, the Day Ahead proposal will, once approved and in force, provide the obligation on GB NEMOs to manage all processes associated with the intra-GB 'virtual' interconnector, such as the following:

- 1) interfacing of data to and from the Algorithm,
- 2) validating intra-GB flow as necessary

- 3) establishing efficient clearing and settlement processes between the GB NEMOs, based on the Day Ahead results,
- 4) Managing the currency exchange rate process.

There will still need to be a formal relationship between each TSO and a NEMO which may include the following:

- 1) interfacing cross border capacities and any allocation constraints with the Algorithm,
- 2) validation of cross-border results.
- 3) Establishment of financial clearing across with the equivalent party in the interconnected market
- 4) Carrying out the Shipping function
- 5) Collection and payment of Congestion rent to the TSO.

TSOs are not limited to establishing the above arrangements just with GB NEMOs. However in order to ensure a level-playing field between GB NEMOs, in the event that a TSO requests terms from a GB NEMO it shall extend such request to all GB NEMOs. Where a TSO requests terms for some or all of such activities the GB NEMOs shall offer terms accordingly. The criteria by which TSOs may select a GB NEMO for such activities that are NEMO obligations may include the following, as set out in the Proposals:

- Congestion income payment arrangements;
- Exchange rate reconciliation;
- Technical solutions;
- Efficiency of cross-clearing arrangements;
- Terms for associated services (for example market coupling results validation);
- Any specific contractual terms.

When requesting terms from relevant NEMOs TSOs shall provide a list of relevant criteria which may be taken into consideration in the selection of a GB NEMO for the carrying out of activities and services.

In addition to the individual TSO-NEMO arrangements, it is expected that there will continue to be a requirement for a continuing multi-party agreement, to govern matters that all have an interest in, for example to set out GBP-EUR exchange rate management process, and the governance of GB procedures. Currently the GB Framework Agreement is the all-party document, and this will be reviewed within the above-mentioned agreement amendment process following approval of the Proposal.

Day Ahead Fallback arrangements

Issues may arise that provide challenges to TSOs, NEMOs and the market coupling system. In most extreme circumstances, the market coupling stakeholders and shareholders face a day-ahead decoupling. Different cases of day-ahead decoupling are possible:

1. bidding zones are partially coupled;
2. bidding zones are fully decoupled; and
3. bidding zones are coupled with subset of bidding zone hubs.

In the event of a decoupling of any particular interconnector from the market coupling process, TSOs responsible for the affected interconnector(s) shall carry out the fallback arrangements as per approved regional proposal.
Commentary on how intra-GB should be dealt with in de-coupling events.

5. Intraday

The figure below depicts the high-level European target model for the single intraday coupling; this figure hence also represents Cross-Border Intra-Day (XBID). It is important to emphasise that cross-border capacities are implicitly allocated by applying a first-come, first-served mechanism. A major challenge of this ID allocation mechanism is the combination of continuous trading and a pricing for the ID capacity as required by the CACM article 55.

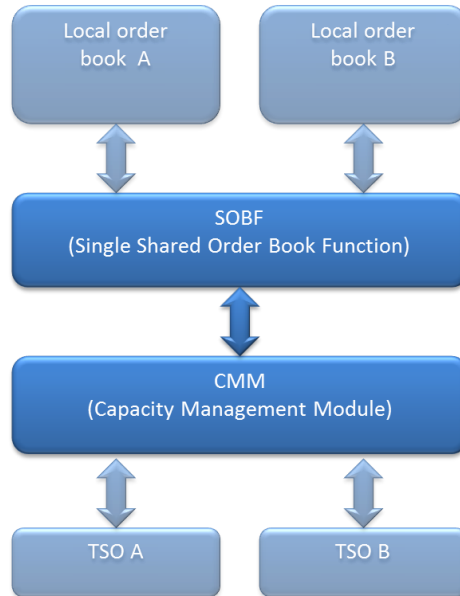


Figure 1: European single intraday coupling target solution

The ID platform consists of two modules that interact with one another:

1. the Shared Order Book Function (SOBF) that pools all the NEMOS' bids and offers for ID trade;
2. the Capacity Management Module (CMM) that provides the available cross-border capacity for ID trade.

TSOs will upload cross-zonal capacities and other associated inputs for the single intraday coupling via the Capacity Management Module (CMM) to the central XBID system. TSOs and NEMOs will all receive results directly from the CMM as well as from the Shipping Modules (SM). This will allow TSOs and NEMOs to submit and receive all necessary data on a non-discriminatory basis. The use of these modules and their respective technical interfaces will be defined in the course of the implementation of the XBID project.

In the continuous trading mechanism, a trader can log in at his bidding zone and monitor the available electricity bids in the same bidding zone and, depending on available capacities, on the other bidding zones. The trader can also give a bid into the system. The platform will check if the bid can be matched:

- If the matching bid is in the same bidding zone, no cross-zonal capacity is needed;
- If the matching bid is in another bidding zone, the bids will be given to the capacity queue. Capacity will be checked and - if available - capacity will be allocated.

After each trade that is allocated, the available cross-border capacity is updated in the CMM.

The high-level intraday solution divides the GB bidding zone into as many hubs as there are NEMOs within the GB bidding zone. Within the Algorithm the hubs are modelled as being coupled by means of infinite capacity. The application of infinite capacity between NEMO's in the GB bidding zone is necessary because:

1. infinite capacity facilitating sufficient capacity to ensure unlimited exchange between the hubs in the GB bidding zone,
2. without infinite capacity, congestions may occur between the hubs in the GB bidding zone thereby already limiting the exchange between the hubs.

XBID allocates continuously capacity and energy by means of a first-come first-served principle, to the extent that there is cross-border capacity available. Finally, XBID calculates the exchanges between bidding zones.

Intraday Implementation

Implementation of the Intraday Proposal will involve the entering into force of all agreements, processes and interfaces necessary to enable the content of the intraday proposal to be put into operation, in relation to the following:

- 1) individual TSO-NEMO arrangements that are arranged on a per interconnector basis, the timing of which will be based on each TSO's Local Implementation Plan (LIP) and
- 2) The specific NEMO-NEMO arrangements that NEMO's identify as being necessary to achieve the intra-GB requirements of the Intraday Proposal, the timing of which is proposed within the Intra-Gb proposal .
- 3) to coincide with the first interconnector to commence operation within the XBID project.

At the time of submission of the Day Ahead and Intraday Proposals BritNed and NGIC (the latter in conjunction with French TSO RTS) are both planning that their local Implementation plans (LIPs) are put into operation in Q3 2018.

Consideration will be given to whether arrangements relating to Intraday activities may be combined within agreement(s) relating to Day Ahead arrangements. In preparation for these LIPs, the GB I/C TSOs will propose modifications to their respective Access Rules, the process for which is set out in the respective Interconnector Licences.

6. How the Proposals achieve the objectives of CACM

- 1) This TSOs' Proposal contributes to the achievement of the objectives of Article 3 of the CACM Regulation. In particular, this Proposal (lettering below reflects the corresponding lettering within Article 3 of the CACM Regulation):
 - a. promotes effective competition in the generation, trading and supply of electricity by setting out arrangements for the coupling of separate NEMOs' order books;
 - b. ensures optimal use of the transmission infrastructure by setting out arrangements that allow interconnector capacity to be allocated efficiently based on the optimal matching of energy trades, for day ahead via the single day ahead price coupling and for intraday via the continuous trading matching algorithm, regardless of which NEMO the trades relate to;
 - d. optimises the calculation and allocation of cross-zonal capacity by setting out arrangements that allow interconnector capacity to be allocated efficiently based on the optimal matching of energy trades for day ahead via the single day ahead price coupling and for intraday via the continuous trading matching algorithm, regardless of which NEMO the trades are associated with;
 - e. ensures fair and non-discriminatory treatment of TSOs, NEMOs and market participants as it lays down the governance of responsibilities of NEMOs and TSOs for cross zonal capacity arrangements for the relevant bidding zone borders. This includes setting out arrangements for how NEMOs will be selected by TSOs and that afford market participants full access the available implicit cross zonal interconnector capacity, regardless of which NEMO they trade with;
 - h. respects the need for a fair and orderly market and fair and orderly price formation by establishing a transparent mechanism enabling the matching of orders between multiple NEMOs operating in the GB bidding zone and, within the Day Ahead Proposal the delivery of a single clearing price for Great Britain;
 - i. creates a level playing field for NEMOs as it lays down the governance of responsibilities of NEMOs and TSOs;
 - j. provides non-discriminatory access to cross-zonal capacity by setting out arrangements that allow interconnector capacity to be allocated efficiently based on the optimal matching of energy trades for day ahead via the single day ahead price coupling and for intraday via the continuous trading matching algorithm, regardless of which NEMO the trades are associated with.
 - k.

This TSOs' Proposal does not hinder or involve direct relevance to the achievement of the objectives of Article 3 of the CACM Regulation as follows:

- c. ensuring operational security;
- e. ensuring fair and non-discriminatory treatment of the Agency and regulatory authorities, as no roles or obligations are assigned to such organisations;
- f. ensuring and enhancing the transparency and reliability of information, as no information is required to be published by this Proposal, over and above what is required to be published by other Regulations;

contributing to the efficient long-term operation and development of the electricity transmission system and electricity sector in the Union.

7. Costs relating to Day Ahead and Intraday Projects

TSOs consider that the high level purpose of market coupling is to maximise consumer economic benefit, and hence TSOs consider that many of the costs associated with the market coupling projects should be borne by the market, rather than by the parties obligated to implement. TSOs recommend therefore that the cost recovery arrangements should be concluded forthwith, and alongside the Proposals' implementations. Where such cost recovery should be via GB tariffs then discussions should be extended to the GBSO accordingly.

8. Consultation

[Outcomes of the consultation to be included here].