CP Progression – CP1358 & CP1359

Meeting Name	Imbalance Settlement Group
Meeting Date	20 December 2011
Purpose of paper	For Decision
Summary	This report provides details of the background, solution, impacts and industry views of CP1358 'Change to time-band weightings in the Market Index Definition Statement' & CP1359 'Introducing new products into the Market Index Definition Statement'. The ISG is requested to consider the report and to reach a decision on whether to approve the CPs.

1. Why Change?

1.1 Background

1.1.1 ELEXON annually conducts a review of Market Index Definition Statement (MIDS). The MIDS set out the calculation for the reverse energy imbalance price, and defines what trades made on the power exchanges go into that calculation.

1.1.2 The MIDS includes a set of relevant products (and time-bands in which trades are made on those products) and sets weightings on them to determine which should be used to calculate the Market Index Price and Market Index Volume submitted by each power exchange in their role as Market Index Data Providers.

1.1.3 These products and weightings are reviewed annually.

1.2 What is the issue?

1.2.1 As part of the MIDS review an industry consultation was issued and responses were discussed at the Panel. After reviewing the responses the Panel recommended that the weightings for time bands 7 and 8 are set to zero. This would mean that only trades made within 12 hours of Gate Closure (time bands one to six) are included in the calculation of the reverse imbalance price.

1.2.2 The Panel also recommended that the MIDS is changed to incorporate two new products:

a) 1 hour block product being launched on the APX power exchange from Quarter 4 2011, this should be included in the MIDS with a weighting of one and hence included in the calculation of the Market Index Price; and

b) A Day Ahead Auction product used by both the APX and N2EX power exchanges. It is not proposed that this be used to calculate the reverse price, but that it should be included in the Market Index Definition Statement as a relevant product with a zero weighting.

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2. Solution

2.1 In order to implement the Panel recommendations two CPs were raised CP1358 'Change to time band weightings in the Market Index Definition Statement' & CP1359 'Introducing new products into the Market Index Definition Statement' by ELEXON on 25 October 2011.

3. Industry Views

3.1 CP1358 & CP1359 were issued for participant Impact Assessment via CPC00704. We received 4 responses for each of which 2 agreed and 2 were neutral.

3.2 The breakdown of responses is shown in the following table and the full collated participant responses to CP1358 & CP1359 are available on the ELEXON website here.

Respondent Role	Respondent Support		
	Yes	No	Neutral
LDSOs / UMSO	-	-	1
Supplier and Supplier Agents (NHH & HH)	-	-	1
Mixed (i.e. two or more of Supplier, Generator, Trader, Party agent or Distributor)	2	-	-
Total	**2**	**0**	**2**

3.3 No respondents were against the changes proposed in CP1358 & CP1359. One respondent made a specific point in their response stating that they support a preference for an "ASAP" change to the MIDS, as it doesn't seem to make sense to a) have an actively traded 1H product that is excluded from MIP calculations on one exchange but not the other; and b) have two releases of the MIDS (APX product, followed by time bands 7 and 8) in a short space of time.

3.4 We received one comment which queried whether there should be clarification on what happens with the October clock change for the new products (1 hour block and DA auction) This is inconsistent with the product (DA Auction) definition on PP20, A2.1. On the October clock change, these products are not traded for the extra hour. At present we have not changed to redlining, but can do if the ISG deems it appropriate.

3.5 Comments on the Proposed Redlining

3.5.1 No comments were received on the proposed redlined changes to the MIDS document.

4. Intended Benefits

4.1.1 The changes help better facilitate the principles of the MIDS.

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5. Impacts and Costs

5.1 The following table summarises the ELEXON effort required to implement CP1358 & CP1359. The implementation of these would have no impact on any Market Participants.

Market Participant	Cost/Impact	Implementation time needed
ELEXON (Implementation)	1.5 man days, equating to £360	April 2012 Release is suitable
All Market Participants	No Impact	April 2012 Release is suitable

6. Implementation Approach

6.1 CP1358 & CP1359 would be implemented on **01 April 2012**.

7. Recommendations

7.1 We invite you to:

c) **AGREE** the proposed amendments to MIDs; and

d) **APPROVE** CP1358 & CP1359 for implementation on 01 April 2012.

List of Attachments:
Attachment A – MIDs redlining – CP1358
Attachment B – MIDS redlining – CP1359

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Market Index Definition Statement for Market Index Data Provider(s)

Version ~~6.0~~

Effective Date: ~~5 April 2011~~

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MARKET INDEX DEFINITION STATEMENT VERSION ~~6.0~~

relating to

MARKET INDEX DATA PROVIDERS

This is the Market Index Definition Statement Version ~~6.0~~ relating to Market Index Data Providers.

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AMENDMENT RECORD

VERSION	DATE	DESCRIPTION OF CHANGES	CRs INCLUDED	MODS PANEL REF
1.0	30/12/02	Approved by the Authority for Use with effective date 25 February 2003	n/a	P78
2.0	11/03/03	Approved by the Authority for Use with effective date 11 March 2003	n/a	P78
3.0	14/08/03	Approved by the Authority for Use with effective date 14 August 2003	CP959	n/a
4.0	BETTA Effective Date	Approved by the Authority for Use with effective date BETTA Effective Date	BETTA 6.3; Panel review; Removal of OM London Exchange Ltd (UKPXMIDP) 88/016	n/a
5.0	01/04/06	Approved by the Authority for Use with effective date 1 April 2006. Removal of end date of parameters	Panel review	n/a
6.0	5/04/11	Amended to: • include NasdaqOMX as a new MIDP; • remove Timeband 13 following industry consultation; • correct manifest errors in the Timebands diagram in Section 4.4.2; • update APX Company details; and • implement housekeeping changes to future-proof against changes to BSC Section T for P217.	Panel review	n/a
	01/04/2012	Amended to change weighting of timebands 7 & 8 to '0'.	CP1358	n/a

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1. Introduction

Market Index Data is used in Settlement to calculate a price (expressed in £/MWh) in respect of each Settlement Period which reflects the price of wholesale electricity in Great Britain for delivery in respect of that Settlement Period in the short term market in circumstances where the levels of liquidity in the market during that period are not exceptionally low.

For the avoidance of doubt, any queries on the Market Index Data, Market Index Definition Statement should be directed to the BSC Service Desk and not to the Market Index Data Provider.

1.1 Purpose and Scope of the Market Index Definition Statement

The BSC Panel is required to establish and have in force at all times, in accordance with Section T of the Balancing and Settlement Code (the Code), a Market Index Definition Statement which is approved by the Authority containing details for each Market Index Data Provider. There is no specification in the Code as to the requisite number of Market Index Data Providers. The Market Index Definition Statement shall be reviewed by BSCCo, on behalf of the BSC Panel, from time to time and in any event at least once every 12 months.

The Market Index Definition Statement contains the following information:

(a) Market Index Data Provider details;

(b) full definition of the particular data and methodology to be used by the Market Index Data Provider(s) in determining the Market Index Data for each Settlement Period; and

(c) Individual Liquidity Thresholds for each Market Index Data Provider.

1.2 Review Procedure for the Market Index Definition Statement

The BSC Panel shall review the Market Index Definition Statement at least once every 12 months or sooner if there are any changes in circumstances, or when another Approved Modification requires amendment to the definition statement. Changes to the Market Index Definition Statement will be made in accordance with Section T of the Code, and with the procedure set out in BSCP40 'Change Management'.

In establishing and reviewing the Market Index Definition Statement, the BSC Panel shall:

(a) assess the data previously supplied by the Market Index Data Provider(s);

(b) consult with Parties and other interested parties; and

(c) provide to the Authority copies of any written representations so made and not withdrawn.

Following the review process, the amendments to the Market Index Definition Statement, which have been recommended by the BSC Panel, will be submitted to the Authority for approval.

1.3 Main Users of the Market Index Definition Statement

The main users of this Market Index Definition Statement are:

- Market Index Data Providers;
- BSC Parties;
- BSCCo;
- BSC Panel; and
- The Authority.

2. Acronyms and Definitions

2.1 List of Acronyms

The following is a list of acronyms used in this Market Index Definition Statement:

BMRA	Balancing Mechanism Reporting Agent
BSCCo	Balancing and Settlement Code Company
MIDP	Market Index Data Provider
SAA	Settlement Administration Agent

Other acronyms used are defined, where used, in the indivdual methodology statements.

2.2 List of Definitions

Market Index Definition Statement	has the meaning given to that term in Section T of the Code;
Individual Liquidity Threshold	has the meaning given to that term in Section T of the Code;
Market Index Data Provider	has the meaning given to that term in Section T of the Code;
Market Index Data	means the data to be provided by the Market Index Data Provider(s) in accordance with the Market Index Definition Statement or, in relation to a particular Market Index Data Provider, the data to be so provided by that Market Index Data Provider, in each case as set out in Section T of the Code;
Market Index Price	In relation to a Market Index Data Provider and a Settlement Period, the price data to be provided by that Market Index Data Provider in accordance with the Market Index Definition Statement or (where applicable) deemed in accordance with Section T of the Code;
Market Index Volume	In relation to a Market Index Data Provider and a Settlement Period, the volume data to be provided by that Market Index Data Provider in accordance with the Market Index Definition Statement or (where applicable) deemed in accordance with Section T of the Code;
qualifying contract/product	A qualifying contract or product is a contract or product which is traded on the spot market in the short term and which is eligible for inclusion in the Market Index Data calculation. Qualifying contracts or products for each Market Index Data Provider are defined in the individual methodology statements in this Market Index Definition Statement;
short term	Short term is defined in Section T of the Code, as no more than 3 Business Days prior to Gate Closure for the relevant Settlement Period;
time weighting	Trades nearer to Gate Closure will be weighted so these trades have more influence on the Market Index Data than trades notified earlier;
timebands	are the time periods used for the time weighting, and are as defined in section 4.4.1 of this Market Index Definition Statement;
product weighting	Products traded nearer to real time are weighted to ensure that they have a more proportionate effect on the Market Index Price than those products traded earlier thus making the Market Index more reflective of the price of short term energy and ensuring that unrepresentative products do not have a disproportionate effect on the resulting Market Index Data.

3. Market Index Data Provider(s)

In respect of each Market Index Data Provider (MIDP) the Market Index Definition Statement contains the following:

3.1 Company Data

Each MIDP is required to provide its company details as shown in the forms in Appendix 1 and Appendix 2.

3.2 Methodology for Derivation of the Market Index Data

Each MIDP is required to derive a Market Index Price and Market Index Volume (referred to as Market Index Data) for each Settlement Period, for use in the derivation of the Energy Imbalance Prices. Market Index Data will be calculated by each Market Index Data Provider in accordance with the methodology statement specific to that Provider (provided for the current Market Index Data Provider(s) as appendices to this Market Index Definition Statement).

The methodology statement contains a description of the qualifying products for each MIDP, the time and product weightings to be applied to these qualifying products, the detailed calculation for derivation of the Market Index Data and the mechanism for application of the Individual Liquidity Threshold.

Market Index Volume (MWh)

Each MIDP is required to provide a Market Index Volume, expressed in MWh, for each Settlement Period in accordance with the calculations detailed in the methodology statement, in the relevant Appendix.

Market Index Price (£/MWh) per Settlement Period

Each MIDP is required to provide a Market Index Price, expressed in £/MWh, for each Settlement Period in accordance with the calculations detailed in the methodology statement, in the relevant Appendix.

3.3 Individual Liquidity Threshold

The BSC Panel sets each MIDP an Individual Liquidity Threshold for each Settlement Period. For the avoidance of doubt, if the Market Index Volume is less than the Individual Liquidity Threshold then the Market Index Volume will be reported as zero.

3.3.1 Long and short day

For the avoidance of doubt, the following describes the rules to be applied by each MIDP to its Individual Liquidity Thresholds on clock change Settlement Days (long and short days).

Unless the Individual Liquidity Thresholds relating to a specific clock change day have been notified to each MIDP by BSCCo, then, where an Individual Liquidity Threshold is defined for a range of days that span a 'long' or 'short' day, the following rules will be applied:

(a) For a 'short' day, having 46 Settlement Periods (i.e. the spring clock change when 1am GMT changes to 2am BST);

(i) Settlement Periods 1 to 2 (00:00 to 01:00 GMT) of the 'short' day take the values of Settlement Periods 1 to 2 (00:00 to 01:00 local time) of the 'normal' day data;

(ii) Settlement Periods 3 to 46 (02:00 to 24:00 BST) of the 'short' day take the values of Settlement Periods 5 to 48 (02:00 to 24:00 local time) of the 'normal' day data;

(iii) Settlement Periods 3 and 4 of the 'normal' day data are not used on a short day.

(b) For a 'long' day, having 50 Settlement Periods (i.e. the autumn clock change when 2am BST changes to 1am GMT):

(i) Settlement Periods 1 to 4 (00:00 to 02:00 BST) of the 'long' day take the values of Settlement Periods 1 to 4 (00:00 to 02:00 local time) of the 'normal' day data;

(ii) Settlement Periods 5 to 6 (01:00 to 02:00 GMT) of the 'long' day take the values of Settlement Periods 3 to 4 (01:00 to 02:00 local time) of the 'normal' day data;

(iii) Settlement Periods 7 to 50 (02:00 to 24:00 GMT) of the 'long' day take the values of Settlement Periods 5 to 48 (02:00 to 24:00 local time) of the 'normal' day data.

4. Individual Liquidity Thresholds, Weightings and Timebands

The following sections list the principles that were applied in determining the Individual Liquidity Thresholds, and how these thresholds should be reviewed, and the weightings to be applied to different products. These principles were derived from the responses received from the first consultation and the two meetings of the Expert Group. Timebands have also been included.

4.1 Principles to be applied in setting Individual Liquidity Thresholds

(a) Individual Liquidity Thresholds should be set to the same value(s) for every MIDP;

(b) Individual Liquidity Thresholds may be set to zero;

(c) Individual Liquidity Thresholds may be set to different values for different Settlement Periods in the day and may vary by Season or Day Type;

(d) Individual Liquidity Thresholds should be set based on the analysis of historic data;

(e) Individual Liquidity Thresholds should be set at a level that minimises the likelihood that the Market Index Price will be set by a single trade;

(f) Individual Liquidity Thresholds should be set to ensure that the Market Index Price is defaulted in the minimum number of Settlement Periods, subject to (e) above.

4.2 Principles to be applied in setting product and time weighting values

(a) Weightings should be applied to the components that make up the Market Index Price;

(b) Weightings should not be applied to the Market Index Volume and should not be used in determining whether the traded volume meets the Liquidity Threshold for the half hour;

(c) Weightings may be applied to reflect how close to real time a trade was made (timeband weighting);

(d) Weightings may be applied to the product or contract types which qualify in the index calculation (ie those which are traded in the short term as defined in the BSC);

(e) The same weightings must be applied to equivalent qualifying products and timebands across all MIDPs (eg 4 Hour blocks, Half Hour blocks);

(f) Weightings may be set to ensure that the Market Index Price is reflective of the price of trades as close as possible to gate closure;

(g) Weightings may be set to minimise the flattening effect on the Market Index Price of including traded products used in the methodology that have one price for a time period longer than one Settlement Period;

(h) Weightings may take values from 0 to 1;

(i) Where a weighting is set to 0, the weighting is effectively null, trades in the related product type and timeband will be excluded from the Market Index Volume (and Price) calculation.

4.3 Principles to be applied to determine when Individual Liquidity Thresholds or product and time weightings should be reviewed

(a) The initial Individual Liquidity Thresholds and product and time weightings shall be reviewed within 3 months of Go-Live;

(b) Individual Liquidity Thresholds and product and time weightings shall be reviewed at least annually thereafter;

(c) Individual Liquidity Thresholds may be reviewed if ELEXON market monitoring reports indicate price distortions;

(d) Individual Liquidity Thresholds may be reviewed if market liquidity or individual MIDP liquidity changes significantly (up or down);

(e) Individual Liquidity Thresholds may be reviewed if required by the Authority.

4.4 Timebands

4.4.1 Description of Timebands

ELEXON has specified that each MIDP's systems must have the capability to support (without a system change) trades made within the following timebands:

No	Timeband	Timeband Description
1	1 Hour	GC (for the relevant Settlement Period) to >= -1 hour
2	2 Hours	> -1 hour to >= -2 hours
3	3 Hours	> -2 hours to >= -3 hours
4	4 Hours	> -3 hours to >= -4 hours
5	8 Hours	> -4 hours to >= -8 hours
6	12 Hours	> -8 hours to >= -12 hours
7	16 Hours	> -12 hours to >= -16 hours
8	20 Hours	> -16 hours to >= -20 hours
9	24 Hours	> -20 hours to >= -24 hours
10	1 calendar day	> -24 hours to SP 1 on CD-1
11	2 calendar days	SP 1 to SP48 on CD-2
12	3 calendar days	SP 1 to SP48 on CD-3

These timebands are represented pictorially in section 4.4.2.

For the avoidance of doubt, in terms of inclusivity of trades into a timeband:

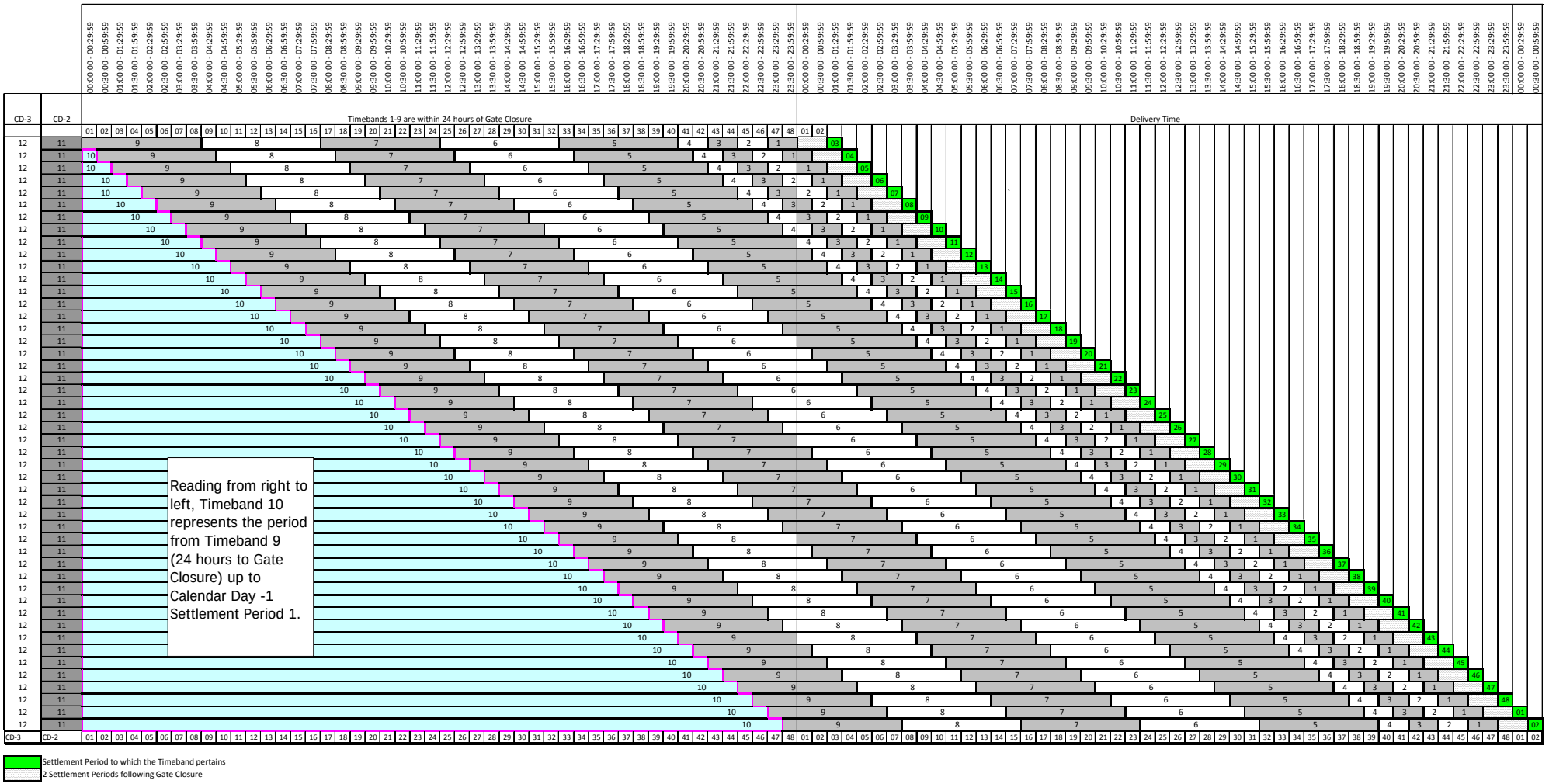
- Where the trade was done at HH:29:59 or HH:59:59, then it will fall into the earlier timeband;
- Where the trade was done at HH:30:00 or HH:00:00 then it will fall into the later timeband.

For example, a trade on CD-2 at 23:59:59 will fall into timeband 11, however, a trade made 1 second later at 00:00:00 will fall into timeband 10 (or 9 if it is Settlement Period 1, within day, as reflected in section 4.4.2).

Similarly, for Settlement Period 1 within day, where a trade is made at 06:59:59, then this falls into timeband 8, whereas a trade made at 07:00:00 falls into timeband 7.

4.4.2 Graphical Representation of Timebands

Note: a trade for delivery in the 'Delivery time' area of the diagram has a trade time before Gate Closure. The trade time determines which Timeband the trade applies to. For example a trade at 13:00 for delivery at Settlement Period 10 on the next calendar day falls within Timeband 7.



Appendix 1: APX Commodities Ltd

Company Details

Company Name: APX Commodities Ltd

Registration Number: 03751681

Address: Ergo Building Mere Way
Ruddington Fields
Ruddington
Nottingham
Nottinghamshire
NG11 6JS

Town / City: Nottingham Postcode: NG11 6JS

Individual Liquidity Threshold

The BSC Panel has set the MIDP an Individual Liquidity Threshold, as follows:

From Settlement Day	To Settlement Day	From Settlement Period	To Settlement Period	Individual Liquidity Threshold
01/04/06	–	1	48	25 MWh

A1 Methodology Statement for APX Commodities Ltd (APX)

The methodology is designed to generate a Market Index Price (representing a weighted average price relating to qualifying contracts) for each Settlement Period.

A qualifying contract may take the form of any of the following relevant APX Products, specifically traded on or after the third calendar day prior to Gate Closure for the relevant Settlement Period.

1. Relevant APX Product definitions:

Half Hour – duration of 30 minutes, commencing either on the hour or half hour.

2 Hour Block – normal duration of 2 hours, commencing at: 01:00, 03:00, 05:00, 07:00, 09:00, 11:00, 13:00, 15:00, 17:00, 19:00, 21:00 & 23:00. On the March clock change day, the block starting at 01:00 has a duration of one hour. On the October clock change day, the block starting at 01:00 (BST) has a duration of three hours.

4 Hour Block – normal duration of 4 hours, commencing at: 03:00, 07:00, 11:00, 15:00, 19:00 & 23:00. On the March clock change day, the block starting at 23:00 has a duration of three hours. On the October clock change day, the block starting at 23:00 has a duration of five hours.

Overnight – normal duration of 8 hours, commencing at 23:00. On the March clock change day the product has a duration of seven hours. On the October clock change day the product has a duration of nine hours.

Peak – duration of 12 hours, commencing at 07:00. This product is not affected by clock change days.

Extended Peak – duration of 16 hours commencing at 07:00. This product is not affected by clock change days.

All relevant APX Products are for delivery via an Energy Contract Volume Notification to the ECVAA.

Each qualifying contract's contribution to the Market Index Price is weighted. The weighting varies both according to product and to time of trade. Each qualifying contract falls within a specific Timeband and has a specific Weighting (defined as follows):

SHORT-TERM TIMEBANDS – for qualifying contracts traded less than or equal to 24 hours prior to Gate Closure for the relevant Settlement Period:

ID	Difference between time of trade and Gate Closure for the relevant Settlement Period (Hours)
1	0 <= AND <=1
2	1 < AND <=2
3	2 < AND <=3
4	3 < AND <=4
5	4 < AND <=8
6	8 < AND <=12
7	12 < AND <=16
8	16 < AND <=20
9	20 < AND <=24

LONGER-DATED TIMEBANDS – for qualifying contracts traded greater than 24 hours prior to Gate Closure for the relevant Settlement Period:

ID	Day of Trade relative to Day of Gate Closure for the relevant Settlement Period
10	D-1
11	D-2
12	D-3

For the avoidance of doubt, as Market Index Prices are calculated on a Settlement Period basis, the Timeband is calculated by reference to the difference in time between the time the contract was traded and Gate Closure for the Settlement Period for which the price is being calculated, not the difference in time between the time the contract was traded and Gate Closure for the first Settlement Period of a multi-period contract. E.g. if the contract is a 2 Hour Block, (which has a duration of 4 Settlement Periods), the weighting given to individual periods within this contract could vary if the difference in time between the time the contract was traded and Gate Closure for the individual Settlement Periods falls within different Timebands.

Timebands will need no adjustment on clock change days, as they refer to the absolute time between Gate Closure for the Settlement Period and the time the product was traded, not the difference in the local time of Gate Closure and the time the product was traded.

2. Weightings

Weighting (W_c)	Timebands											
Relevant APX Product	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Half-Hour	1	1	1	1	1	1	~~1~~ 0	~~1~~ 0	0	0	0	0
2 Hour Block	1	1	1	1	1	1	~~1~~ 0	~~1~~ 0	0	0	0	0
4 Hour Block	1	1	1	1	1	1	~~1~~ 0	~~1~~ 0	0	0	0	0
Overnight	0	0	0	0	0	0	0	0	0	0	0	0
Peak	0	0	0	0	0	0	0	0	0	0	0	0
Extended Peak	0	0	0	0	0	0	0	0	0	0	0	0

The Weightings Table is fixed for all contracts delivering on any particular Settlement Day and is the same value in all Settlement Periods.

3. Price Formula

The half-hourly Traded Price (TP_j) is calculated as the weighted average price of all qualifying contracts.

If $\sum_{c=1}^{n}\left(V_{jc}W_c\right)=0$ then $TP_j = 0$

else

$$TP_j = \frac{\left\{\sum_{c=1}^{n}\left(P_{jc}.V_{jc}.W_c\right)\right\}}{\left\{\sum_{c=1}^{n}\left(V_{jc}.W_c\right)\right\}}$$

The half hourly Traded Volume (TV_j) is calculated as the sum of the volume of all qualifying contracts, where W_c for that qualifying contract is non-zero.

$$TV_j = \sum_{c=1}^{m} V_{jc}$$ (excluding values of V_{jc} where $W_c = 0$

The Market Index Volume (MIV_j) and Market Index Price (MIP_j) are calculated as follows:

If $\{LT_j > TV_j\}$ then $MIV_j = 0$ and $MIP_j = 0$

else $MIV_j = TV_j$ and $MIP_j = TP_j$

Where:

P_{jc} is the price (£/MWh) of a qualifying contract 'c' in period 'j';

V_{jc} is the volume (MWh) of a qualifying contract 'c' delivered in period 'j';

W_c is the Weighting of qualifying contract 'c', with respect to the Relevant APX Product and the Timeband in which it was traded;

LT_j is the volume (MWh) of the Liquidity Threshold in period 'j'.

Sub-scripts:

'j' Settlement Period;

'c' qualifying contract.

Where no Liquidity Threshold has been provided for a Settlement Period the value will be set to 0, (except where the rules below for clock change days would otherwise apply).

If ELEXON does not provide Liquidity Thresholds specifically for the clock change days, then the following rules will be applied.

For a 'short' day, having 46 Settlement Periods (i.e. the spring clock change when 1am GMT changes to 2am BST):

Settlement Periods 1 to 2 (00:00 to 01:00 GMT) of the 'short' day take the values of Settlement Periods 1 to 2 (00:00 to 01:00 local time) of the 'normal' day data;

Settlement Periods 3 to 46 (02:00 to 24:00 BST) of the 'short' day take the values of Settlement Periods 5 to 48 (02:00 to 24:00 local time) of the 'normal' day data;

Settlement Periods 3 and 4 of the 'normal' day data are not used on a short day.

For a 'long' day, having 50 Settlement Periods (i.e. the autumn clock change when 2am BST changes to 1am GMT);

Settlement Periods 1 to 4 (00:00 to 02:00 BST) of the 'long' day take the values of Settlement periods 1 to 4 (00:00 to 02:00 local time) of the 'normal' day data;

Settlement Periods 5 to 6 (01:00 to 02:00 GMT) of the 'long' day take the values of Settlement Periods 3 to 4 (01:00 to 02:00 local time) of the 'normal' day data;

Settlement Periods 7 to 50 (02:00 to 24:00 GMT) of the 'long' day take the values of Settlement Periods 5 to 48 (02:00 to 24:00 local time) of the 'normal' day data.

The Market Index Price will be calculated in Pounds Sterling per MWh, supplied rounded to two decimal places, Market Index Volume will be supplied in MWh, rounded to three decimal places. Standard rounding rules will be applied, i.e. less than five round down, more than or equal to five round up.

APX (UK) shall submit Market Index Data to the BMRA no later than the end of the Settlement Period to which the data pertains and shall submit Market Index Data to the SAA and BSCCo no later than the end of the next Business Day following the relevant Settlement Day.

Relevant APX Products cease trading at or before Gate Closure for the first Settlement Period of delivery.

4. Erroneous Trades

Errors are determined in accordance with the provisions contained within the APX Master Service and Participation Agreement. Where APX (UK), in its absolute discretion, determines that a trade has been contracted through error, APX (UK) may reverse such a trade and make the necessary amendments to notifications and settlement. Such reversed trades shall not be included within the calculation of the Market Index Data.

Should APX (UK) become aware of an error or change that affects the underlying data of a previously submitted Market Index Data, such that the Market Index Data submitted is no longer the data that would have been submitted by APX (UK) in respect of that Settlement Period, APX (UK) will promptly inform the BSCCo of such change and its effect on the Market Index Data, recalculate and resubmit the Market Index Data for the relevant Settlement Period(s) and Settlement Day(s) taking account of such change.

Appendix 2: NASDAQ OMX Stockholm AB

Company Details

Company Name: NASDAQ OMX Stockholm AB (or any nominated Affiliate including ("Nord Pool Clearing ASA", "Nord Pool")

Registration Number: 556383 - 9058 (Sweden)

Address: NASDAQ OMX Stockholm AB
SE 105 78
Stockholm
Sweden

Town / City: Stockholm, Sweden, Postcode: SE – 10 578

Individual Liquidity Threshold

The BSC Panel has set the MIDP an Individual Liquidity Threshold, as follows:

From Settlement Day	To Settlement Day	From Settlement Period	To Settlement Period	Individual Liquidity Threshold
28/09/09	–	1	48	25 MWh

A2 Methodology Statement for NASDAQ OMX Stockholm AB (NOMX)

The methodology is designed to generate a Market Index Price (representing a weighted average price relating to qualifying contracts) for each Settlement Period.

A qualifying contract may take the form of any of the following relevant NASDAQ OMX Stockholm AB (NOMX) Products, specifically traded on or after the third calendar day prior to Gate Closure for the relevant Settlement Period.

1. Relevant NOMX Product definitions:

Half Hour – duration of 30 minutes, commencing either on the hour or half hour.

1 Hour Block – normal duration of 1 hour, commencing at: 01:00, 02:00, 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, & 00:00. On the March clock change day, there is no block commencing at 01:00. On the October clock change day, the block starting at 01:00 has a duration of two hours.

2 Hour Block – normal duration of 2 hours, commencing at: 01:00, 03:00, 05:00, 07:00, 09:00, 11:00, 13:00, 15:00, 17:00, 19:00, 21:00 & 23:00. On the March clock change day, the block starting at 01:00 has a duration of one hour. On the October clock change day, the block starting at 01:00 (BST) has a duration of three hours.

4 Hour Block – normal duration of 4 hours, commencing at: 03:00, 07:00, 11:00, 15:00, 19:00 & 23:00. On the March clock change day, the block starting at 23:00 has a duration of three hours. On the October clock change day, the block starting at 23:00 has a duration of five hours.

Overnight – normal duration of 8 hours, commencing at 23:00. On the March clock change day the product has a duration of seven hours. On the October clock change day the product has a duration of nine hours.

Peak – duration of 12 hours, commencing at 07:00. This product is not affected by clock change days.

Extended Peak – duration of 16 hours commencing at 07:00. This product is not affected by clock change days.

All relevant NOMX Products are for delivery via an Energy Contract Volume Notification to the ECVAA.

Each qualifying contract's contribution to the Market Index Price is weighted. The weighting varies both according to product and to time of trade. Each qualifying contract falls within a specific Timeband and has a specific Weighting (defined as follows):

SHORT-TERM TIMEBANDS – for qualifying contracts traded less than or equal to 24 hours prior to Gate Closure for the relevant Settlement Period:

ID	Difference between time of trade and Gate Closure for the relevant Settlement Period (Hours)
1	0 <= AND <=1
2	1 < AND <=2
3	2 < AND <=3
4	3 < AND <=4
5	4 < AND <=8
6	8 < AND <=12
7	12 < AND <=16
8	16 < AND <=20
9	20 < AND <=24

LONGER-DATED TIMEBANDS – for qualifying contracts traded greater than 24 hours prior to Gate Closure for the relevant Settlement Period:

ID	Day of Trade relative to Day of Gate Closure for the relevant Settlement Period
10	D-1
11	D-2
12	D-3

For the avoidance of doubt, as Market Index Prices are calculated on a Settlement Period basis, the Timeband is calculated by reference to the difference in time between the time the contract was traded and Gate Closure for the Settlement Period for which the price is being calculated, not the difference in time between the time the contract was traded and Gate Closure for the first Settlement Period of a multi-period contract. E.g. if the contract is a 2 Hour Block, (which has a duration of 4 Settlement Periods), the weighting given to individual periods within this contract could vary if the difference in time between the time the contract was traded and Gate Closure for the individual Settlement Periods falls within different Timebands.

Timebands will need no adjustment on clock change days, as they refer to the absolute time between Gate Closure for the Settlement Period and the time the product was traded, not the difference in the local time of Gate Closure and the time the product was traded.

2. Weightings

Weighting (W_c)	Timebands											
Relevant NOMX Product	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Half-Hour	1	1	1	1	1	1	~~1~~0	~~1~~0	0	0	0	0
1 Hour Block	1	1	1	1	1	1	~~1~~0	~~a)~~ 0	0	0	0	0
2 Hour Block	1	1	1	1	1	1	~~1~~0	~~1~~0	0	0	0	0
4 Hour Block	1	1	1	1	1	1	~~1~~0	~~1~~0	0	0	0	0
Overnight	0	0	0	0	0	0	0	0	0	0	0	0
Peak	0	0	0	0	0	0	0	0	0	0	0	0
Extended Peak	0	0	0	0	0	0	0	0	0	0	0	0

The Weightings Table is fixed for all contracts delivering on any particular Settlement Day and is the same value in all Settlement Periods.

3. Price Formula

The half-hourly Traded Price (TP_j) is calculated as the weighted average price of all qualifying contracts.

If $\sum_{c=1}^{n}\left(V_{jc}W_c\right)=0$ then $TP_j = 0$

else

$$TP_j = \frac{\left\{\sum_{c=1}^{n}\left(P_{jc}.V_{jc}.W_c\right)\right\}}{\left\{\sum_{c=1}^{n}\left(V_{jc}.W_c\right)\right\}}$$

The half hourly Traded Volume (TV_j) is calculated as the sum of the volume of all qualifying contracts, where W_c for that qualifying contract is non-zero.

$$TV_j = \sum_{c=1}^{m} V_{jc}$$ (excluding values of V_{jc} where $W_c = 0$

The Market Index Volume (MIV_j) and Market Index Price (MIP_j) are calculated as follows:

If $\{LT_j > TV_j\}$ then $MIV_j = 0$ and $MIP_j = 0$

else $MIV_j = TV_j$ and $MIP_j = TP_j$

Where:

P_{jc} is the price (£/MWh) of a qualifying contract 'c' in period 'j';

V_{jc} is the volume (MWh) of a qualifying contract 'c' delivered in period 'j';

W_c is the Weighting of qualifying contract 'c', with respect to the Relevant NOMX Product and the Timeband in which it was traded;

LT_j is the volume (MWh) of the Liquidity Threshold in period 'j'.

Sub-scripts:

'j' Settlement Period;

'c' qualifying contract.

Where no Liquidity Threshold has been provided for a Settlement Period the value will be set to 0, (except where the rules below for clock change days would otherwise apply).

If ELEXON does not provide Liquidity Thresholds specifically for the clock change days, then the following rules will be applied.

For a 'short' day, having 46 Settlement Periods (i.e. the spring clock change when 1am GMT changes to 2am BST):

Settlement Periods 1 to 2 (00:00 to 01:00 GMT) of the 'short' day take the values of Settlement Periods 1 to 2 (00:00 to 01:00 local time) of the 'normal' day data;

Settlement Periods 3 to 46 (02:00 to 24:00 BST) of the 'short' day take the values of Settlement Periods 5 to 48 (02:00 to 24:00 local time) of the 'normal' day data;

Settlement Periods 3 and 4 of the 'normal' day data are not used on a short day.

For a 'long' day, having 50 Settlement Periods (i.e. the autumn clock change when 2am BST changes to 1am GMT);

Settlement Periods 1 to 4 (00:00 to 02:00 BST) of the 'long' day take the values of Settlement periods 1 to 4 (00:00 to 02:00 local time) of the 'normal' day data;

Settlement Periods 5 to 6 (01:00 to 02:00 GMT) of the 'long' day take the values of Settlement Periods 3 to 4 (01:00 to 02:00 local time) of the 'normal' day data;

Settlement Periods 7 to 50 (02:00 to 24:00 GMT) of the 'long' day take the values of Settlement Periods 5 to 48 (02:00 to 24:00 local time) of the 'normal' day data.

The Market Index Price will be calculated in Pounds Sterling per MWh, supplied rounded to two decimal places, Market Index Volume will be supplied in MWh, rounded to three decimal places. Standard rounding rules will be applied, i.e. less than five round down, more than or equal to five round up.

NOMX shall submit Market Index Data to the BMRA no later than the end of the Settlement Period to which the data pertains and shall submit Market Index Data to the SAA and BSCCo no later than the end of the next Business Day following the relevant Settlement Day.

Relevant NOMX Products cease trading at or before Gate Closure for the first Settlement Period of delivery.

4. Erroneous Trades

Where NOMX, in its absolute discretion, determines that a trade has been contracted through error, NOMX may reverse such a trade and make the necessary amendments to notifications and settlement. Such reversed trades shall not be included within the calculation of the Market Index Data.

Should NOMX become aware of an error or change that affects the underlying data of a previously submitted Market Index Data, such that the Market Index Data submitted is no longer the data that would have been submitted by NOMX in respect of that Settlement Period, NOMX will promptly inform the BSCCo of such change and its effect on the Market Index Data, recalculate and resubmit the Market Index Data for the relevant Settlement Period(s) and Settlement Day(s) taking account of such change.

Market Index Definition Statement for Market Index Data Provider(s)

Version ~~6.0~~

Effective Date: ~~5 April 2011~~

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MARKET INDEX DEFINITION STATEMENT VERSION ~~6.0~~

relating to

MARKET INDEX DATA PROVIDERS

This is the Market Index Definition Statement Version ~~6.0~~ relating to Market Index Data Providers.

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AMENDMENT RECORD

VERSION	DATE	DESCRIPTION OF CHANGES	CRs INCLUDED	MODS PANEL REF
1.0	30/12/02	Approved by the Authority for Use with effective date 25 February 2003	n/a	P78
2.0	11/03/03	Approved by the Authority for Use with effective date 11 March 2003	n/a	P78
3.0	14/08/03	Approved by the Authority for Use with effective date 14 August 2003	CP959	n/a
4.0	BETTA Effective Date	Approved by the Authority for Use with effective date BETTA Effective Date	BETTA 6.3; Panel review; Removal of OM London Exchange Ltd (UKPXMIDP) 88/016	n/a
5.0	01/04/06	Approved by the Authority for Use with effective date 1 April 2006. Removal of end date of parameters	Panel review	n/a
6.0	5/04/11	Amended to: • include NasdaqOMX as a new MIDP; • remove Timeband 13 following industry consultation; • correct manifest errors in the Timebands diagram in Section 4.4.2; • update APX Company details; and • implement housekeeping changes to future-proof against changes to BSC Section T for P217.	Panel review	n/a
	01/04/2012	Amended to: • include new APX 1 Hour block product with a weighting of '1'; and • include Day Ahead Auction product for both MIDPs with a weighting of '0'.	CP1359	n/a

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1. Introduction

Market Index Data is used in Settlement to calculate a price (expressed in £/MWh) in respect of each Settlement Period which reflects the price of wholesale electricity in Great Britain for delivery in respect of that Settlement Period in the short term market in circumstances where the levels of liquidity in the market during that period are not exceptionally low.

For the avoidance of doubt, any queries on the Market Index Data, Market Index Definition Statement should be directed to the BSC Service Desk and not to the Market Index Data Provider.

1.1 Purpose and Scope of the Market Index Definition Statement

The BSC Panel is required to establish and have in force at all times, in accordance with Section T of the Balancing and Settlement Code (the Code), a Market Index Definition Statement which is approved by the Authority containing details for each Market Index Data Provider. There is no specification in the Code as to the requisite number of Market Index Data Providers. The Market Index Definition Statement shall be reviewed by BSCCo, on behalf of the BSC Panel, from time to time and in any event at least once every 12 months.

The Market Index Definition Statement contains the following information:

(a) Market Index Data Provider details;

(b) full definition of the particular data and methodology to be used by the Market Index Data Provider(s) in determining the Market Index Data for each Settlement Period; and

(c) Individual Liquidity Thresholds for each Market Index Data Provider.

1.2 Review Procedure for the Market Index Definition Statement

The BSC Panel shall review the Market Index Definition Statement at least once every 12 months or sooner if there are any changes in circumstances, or when another Approved Modification requires amendment to the definition statement. Changes to the Market Index Definition Statement will be made in accordance with Section T of the Code, and with the procedure set out in BSCP40 'Change Management'.

In establishing and reviewing the Market Index Definition Statement, the BSC Panel shall:

(a) assess the data previously supplied by the Market Index Data Provider(s);

(b) consult with Parties and other interested parties; and

(c) provide to the Authority copies of any written representations so made and not withdrawn.

Following the review process, the amendments to the Market Index Definition Statement, which have been recommended by the BSC Panel, will be submitted to the Authority for approval.

1.3 Main Users of the Market Index Definition Statement

The main users of this Market Index Definition Statement are:

- Market Index Data Providers;
- BSC Parties;
- BSCCo;
- BSC Panel; and
- The Authority.

2. Acronyms and Definitions

2.1 List of Acronyms

The following is a list of acronyms used in this Market Index Definition Statement:

BMRA	Balancing Mechanism Reporting Agent
BSCCo	Balancing and Settlement Code Company
MIDP	Market Index Data Provider
SAA	Settlement Administration Agent

Other acronyms used are defined, where used, in the indivdual methodology statements.

2.2 List of Definitions

Market Index Definition Statement	has the meaning given to that term in Section T of the Code;
Individual Liquidity Threshold	has the meaning given to that term in Section T of the Code;
Market Index Data Provider	has the meaning given to that term in Section T of the Code;
Market Index Data	means the data to be provided by the Market Index Data Provider(s) in accordance with the Market Index Definition Statement or, in relation to a particular Market Index Data Provider, the data to be so provided by that Market Index Data Provider, in each case as set out in Section T of the Code;
Market Index Price	In relation to a Market Index Data Provider and a Settlement Period, the price data to be provided by that Market Index Data Provider in accordance with the Market Index Definition Statement or (where applicable) deemed in accordance with Section T of the Code;
Market Index Volume	In relation to a Market Index Data Provider and a Settlement Period, the volume data to be provided by that Market Index Data Provider in accordance with the Market Index Definition Statement or (where applicable) deemed in accordance with Section T of the Code;
qualifying contract/product	A qualifying contract or product is a contract or product which is traded on the spot market in the short term and which is eligible for inclusion in the Market Index Data calculation. Qualifying contracts or products for each Market Index Data Provider are defined in the individual methodology statements in this Market Index Definition Statement;
short term	Short term is defined in Section T of the Code, as no more than 3 Business Days prior to Gate Closure for the relevant Settlement Period;
time weighting	Trades nearer to Gate Closure will be weighted so these trades have more influence on the Market Index Data than trades notified earlier;
timebands	are the time periods used for the time weighting, and are as defined in section 4.4.1 of this Market Index Definition Statement;
product weighting	Products traded nearer to real time are weighted to ensure that they have a more proportionate effect on the Market Index Price than those products traded earlier thus making the Market Index more reflective of the price of short term energy and ensuring that unrepresentative products do not have a disproportionate effect on the resulting Market Index Data.

3. Market Index Data Provider(s)

In respect of each Market Index Data Provider (MIDP) the Market Index Definition Statement contains the following:

3.1 Company Data

Each MIDP is required to provide its company details as shown in the forms in Appendix 1 and Appendix 2.

3.2 Methodology for Derivation of the Market Index Data

Each MIDP is required to derive a Market Index Price and Market Index Volume (referred to as Market Index Data) for each Settlement Period, for use in the derivation of the Energy Imbalance Prices. Market Index Data will be calculated by each Market Index Data Provider in accordance with the methodology statement specific to that Provider (provided for the current Market Index Data Provider(s) as appendices to this Market Index Definition Statement).

The methodology statement contains a description of the qualifying products for each MIDP, the time and product weightings to be applied to these qualifying products, the detailed calculation for derivation of the Market Index Data and the mechanism for application of the Individual Liquidity Threshold.

Market Index Volume (MWh)

Each MIDP is required to provide a Market Index Volume, expressed in MWh, for each Settlement Period in accordance with the calculations detailed in the methodology statement, in the relevant Appendix.

Market Index Price (£/MWh) per Settlement Period

Each MIDP is required to provide a Market Index Price, expressed in £/MWh, for each Settlement Period in accordance with the calculations detailed in the methodology statement, in the relevant Appendix.

3.3 Individual Liquidity Threshold

The BSC Panel sets each MIDP an Individual Liquidity Threshold for each Settlement Period. For the avoidance of doubt, if the Market Index Volume is less than the Individual Liquidity Threshold then the Market Index Volume will be reported as zero.

3.3.1 Long and short day

For the avoidance of doubt, the following describes the rules to be applied by each MIDP to its Individual Liquidity Thresholds on clock change Settlement Days (long and short days).

Unless the Individual Liquidity Thresholds relating to a specific clock change day have been notified to each MIDP by BSCCo, then, where an Individual Liquidity Threshold is defined for a range of days that span a 'long' or 'short' day, the following rules will be applied:

(a) For a 'short' day, having 46 Settlement Periods (i.e. the spring clock change when 1am GMT changes to 2am BST);

(i) Settlement Periods 1 to 2 (00:00 to 01:00 GMT) of the 'short' day take the values of Settlement Periods 1 to 2 (00:00 to 01:00 local time) of the 'normal' day data;

(ii) Settlement Periods 3 to 46 (02:00 to 24:00 BST) of the 'short' day take the values of Settlement Periods 5 to 48 (02:00 to 24:00 local time) of the 'normal' day data;

(iii) Settlement Periods 3 and 4 of the 'normal' day data are not used on a short day.

(b) For a 'long' day, having 50 Settlement Periods (i.e. the autumn clock change when 2am BST changes to 1am GMT):

(i) Settlement Periods 1 to 4 (00:00 to 02:00 BST) of the 'long' day take the values of Settlement Periods 1 to 4 (00:00 to 02:00 local time) of the 'normal' day data;

(ii) Settlement Periods 5 to 6 (01:00 to 02:00 GMT) of the 'long' day take the values of Settlement Periods 3 to 4 (01:00 to 02:00 local time) of the 'normal' day data;

(iii) Settlement Periods 7 to 50 (02:00 to 24:00 GMT) of the 'long' day take the values of Settlement Periods 5 to 48 (02:00 to 24:00 local time) of the 'normal' day data.

4. Individual Liquidity Thresholds, Weightings and Timebands

The following sections list the principles that were applied in determining the Individual Liquidity Thresholds, and how these thresholds should be reviewed, and the weightings to be applied to different products. These principles were derived from the responses received from the first consultation and the two meetings of the Expert Group. Timebands have also been included.

4.1 Principles to be applied in setting Individual Liquidity Thresholds

(a) Individual Liquidity Thresholds should be set to the same value(s) for every MIDP;

(b) Individual Liquidity Thresholds may be set to zero;

(c) Individual Liquidity Thresholds may be set to different values for different Settlement Periods in the day and may vary by Season or Day Type;

(d) Individual Liquidity Thresholds should be set based on the analysis of historic data;

(e) Individual Liquidity Thresholds should be set at a level that minimises the likelihood that the Market Index Price will be set by a single trade;

(f) Individual Liquidity Thresholds should be set to ensure that the Market Index Price is defaulted in the minimum number of Settlement Periods, subject to (e) above.

4.2 Principles to be applied in setting product and time weighting values

(a) Weightings should be applied to the components that make up the Market Index Price;

(b) Weightings should not be applied to the Market Index Volume and should not be used in determining whether the traded volume meets the Liquidity Threshold for the half hour;

(c) Weightings may be applied to reflect how close to real time a trade was made (timeband weighting);

(d) Weightings may be applied to the product or contract types which qualify in the index calculation (ie those which are traded in the short term as defined in the BSC);

(e) The same weightings must be applied to equivalent qualifying products and timebands across all MIDPs (eg 4 Hour blocks, Half Hour blocks);

(f) Weightings may be set to ensure that the Market Index Price is reflective of the price of trades as close as possible to gate closure;

(g) Weightings may be set to minimise the flattening effect on the Market Index Price of including traded products used in the methodology that have one price for a time period longer than one Settlement Period;

(h) Weightings may take values from 0 to 1;

(i) Where a weighting is set to 0, the weighting is effectively null, trades in the related product type and timeband will be excluded from the Market Index Volume (and Price) calculation.

4.3 Principles to be applied to determine when Individual Liquidity Thresholds or product and time weightings should be reviewed

(a) The initial Individual Liquidity Thresholds and product and time weightings shall be reviewed within 3 months of Go-Live;

(b) Individual Liquidity Thresholds and product and time weightings shall be reviewed at least annually thereafter;

(c) Individual Liquidity Thresholds may be reviewed if ELEXON market monitoring reports indicate price distortions;

(d) Individual Liquidity Thresholds may be reviewed if market liquidity or individual MIDP liquidity changes significantly (up or down);

(e) Individual Liquidity Thresholds may be reviewed if required by the Authority.

4.4 Timebands

4.4.1 Description of Timebands

ELEXON has specified that each MIDP's systems must have the capability to support (without a system change) trades made within the following timebands:

No	Timeband	Timeband Description
1	1 Hour	GC (for the relevant Settlement Period) to >= -1 hour
2	2 Hours	> -1 hour to >= -2 hours
3	3 Hours	> -2 hours to >= -3 hours
4	4 Hours	> -3 hours to >= -4 hours
5	8 Hours	> -4 hours to >= -8 hours
6	12 Hours	> -8 hours to >= -12 hours
7	16 Hours	> -12 hours to >= -16 hours
8	20 Hours	> -16 hours to >= -20 hours
9	24 Hours	> -20 hours to >= -24 hours
10	1 calendar day	> -24 hours to SP 1 on CD-1
11	2 calendar days	SP 1 to SP48 on CD-2
12	3 calendar days	SP 1 to SP48 on CD-3

These timebands are represented pictorially in section 4.4.2.

For the avoidance of doubt, in terms of inclusivity of trades into a timeband:

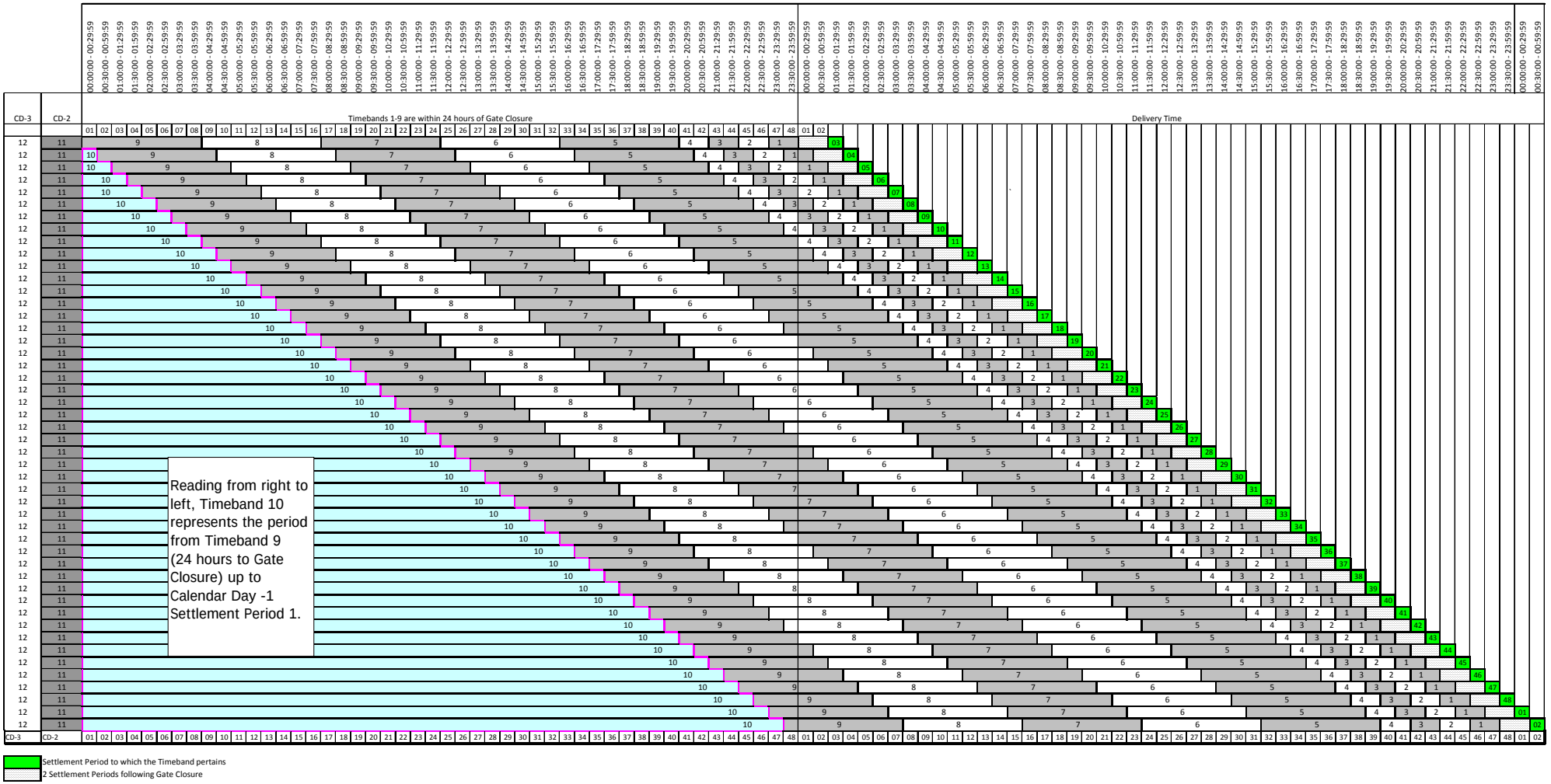
- Where the trade was done at HH:29:59 or HH:59:59, then it will fall into the earlier timeband;
- Where the trade was done at HH:30:00 or HH:00:00 then it will fall into the later timeband.

For example, a trade on CD-2 at 23:59:59 will fall into timeband 11, however, a trade made 1 second later at 00:00:00 will fall into timeband 10 (or 9 if it is Settlement Period 1, within day, as reflected in section 4.4.2).

Similarly, for Settlement Period 1 within day, where a trade is made at 06:59:59, then this falls into timeband 8, whereas a trade made at 07:00:00 falls into timeband 7.

4.4.2 Graphical Representation of Timebands

Note: a trade for delivery in the 'Delivery time' area of the diagram has a trade time before Gate Closure. The trade time determines which Timeband the trade applies to. For example a trade at 13:00 for delivery at Settlement Period 10 on the next calendar day falls within Timeband 7.



Appendix 1: APX Commodities Ltd

Company Details

Company Name: APX Commodities Ltd

Registration Number: 03751681

Address: Ergo Building Mere Way
Ruddington Fields
Ruddington
Nottingham
Nottinghamshire
NG11 6JS

Town / City: Nottingham Postcode: NG11 6JS

Individual Liquidity Threshold

The BSC Panel has set the MIDP an Individual Liquidity Threshold, as follows:

From Settlement Day	To Settlement Day	From Settlement Period	To Settlement Period	Individual Liquidity Threshold
01/04/06	–	1	48	25 MWh

A1 Methodology Statement for APX Commodities Ltd (APX)

The methodology is designed to generate a Market Index Price (representing a weighted average price relating to qualifying contracts) for each Settlement Period.

A qualifying contract may take the form of any of the following relevant APX Products, specifically traded on or after the third calendar day prior to Gate Closure for the relevant Settlement Period.

1. Relevant APX Product definitions:

Half Hour – duration of 30 minutes, commencing either on the hour or half hour.

1 Hour Block – normal duration of 1 hour, commencing at: 01:00, 02:00, 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, & 00:00. On the March clock change day, there is no block commencing at 01:00.

2 Hour Block – normal duration of 2 hours, commencing at: 01:00, 03:00, 05:00, 07:00, 09:00, 11:00, 13:00, 15:00, 17:00, 19:00, 21:00 & 23:00. On the March clock change day, the block starting at 01:00 has a duration of one hour. On the October clock change day, the block starting at 01:00 (BST) has a duration of three hours.

4 Hour Block – normal duration of 4 hours, commencing at: 03:00, 07:00, 11:00, 15:00, 19:00 & 23:00. On the March clock change day, the block starting at 23:00 has a duration of three hours. On the October clock change day, the block starting at 23:00 has a duration of five hours.

Overnight – normal duration of 8 hours, commencing at 23:00. On the March clock change day the product has a duration of seven hours. On the October clock change day the product has a duration of nine hours.

Peak – duration of 12 hours, commencing at 07:00. This product is not affected by clock change days.

Extended Peak – duration of 16 hours commencing at 07:00. This product is not affected by clock change days.

Day Ahead Auction – Duration of 1 hour. Trades are made by 10:50~~at XX.XX~~ for the following day. Traded blocks commence at 23:00, 00.00, 01:00, 02:00, 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. On the March clock change day, there is no block commencing at 01:00.~~ On the October clock change day, the block starting at 01:00 has a duration of two hours.~~

All relevant APX Products are for delivery via an Energy Contract Volume Notification to the ECVAA.

Each qualifying contract's contribution to the Market Index Price is weighted. The weighting varies both according to product and to time of trade. Each qualifying contract falls within a specific Timeband and has a specific Weighting (defined as follows):

SHORT-TERM TIMEBANDS – for qualifying contracts traded less than or equal to 24 hours prior to Gate Closure for the relevant Settlement Period:

ID	Difference between time of trade and Gate Closure for the relevant Settlement Period (Hours)
1	0 <= AND <=1
2	1 < AND <=2
3	2 < AND <=3
4	3 < AND <=4
5	4 < AND <=8
6	8 < AND <=12
7	12 < AND <=16
8	16 < AND <=20
9	20 < AND <=24

LONGER-DATED TIMEBANDS – for qualifying contracts traded greater than 24 hours prior to Gate Closure for the relevant Settlement Period:

ID	Day of Trade relative to Day of Gate Closure for the relevant Settlement Period
10	D-1
11	D-2
12	D-3

For the avoidance of doubt, as Market Index Prices are calculated on a Settlement Period basis, the Timeband is calculated by reference to the difference in time between the time the contract was traded and Gate Closure for the Settlement Period for which the price is being calculated, not the difference in time between the time the contract was traded and Gate Closure for the first Settlement Period of a multi-period contract. E.g. if the contract is a 2 Hour Block, (which has a duration of 4 Settlement Periods), the weighting given to individual periods within this contract could vary if the difference in time between the time the contract was traded and Gate Closure for the individual Settlement Periods falls within different Timebands.

Timebands will need no adjustment on clock change days, as they refer to the absolute time between Gate Closure for the Settlement Period and the time the product was traded, not the difference in the local time of Gate Closure and the time the product was traded.

2. Weightings

Weighting (W_c)	Timebands											
Relevant APX Product	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Half-Hour	1	1	1	1	1	1	1	1	0	0	0	0
1 Hour Block	1	1	1	1	1	1	1	1	0	0	0	0
2 Hour Block	1	1	1	1	1	1	1	1	0	0	0	0
4 Hour Block	1	1	1	1	1	1	1	1	0	0	0	0
Overnight	0	0	0	0	0	0	0	0	0	0	0	0
Peak	0	0	0	0	0	0	0	0	0	0	0	0
Extended Peak	0	0	0	0	0	0	0	0	0	0	0	0
Day Ahead Auction	0	0	0	0	0	0	0	0	0	0	0	0

The Weightings Table is fixed for all contracts delivering on any particular Settlement Day and is the same value in all Settlement Periods.

3. Price Formula

The half-hourly Traded Price (TP_j) is calculated as the weighted average price of all qualifying contracts.

If $\sum_{c=1}^{n}\left(V_{jc}W_c\right)=0$ then $TP_j = 0$

else

$$TP_j = \frac{\left\{\sum_{c=1}^{n}\left(P_{jc}.V_{jc}.W_c\right)\right\}}{\left\{\sum_{c=1}^{n}\left(V_{jc}.W_c\right)\right\}}$$

The half hourly Traded Volume (TV_j) is calculated as the sum of the volume of all qualifying contracts, where W_c for that qualifying contract is non-zero.

$$TV_j = \sum_{c=1}^{m} V_{jc}$$ (excluding values of V_{jc} where $W_c = 0$

The Market Index Volume (MIV_j) and Market Index Price (MIP_j) are calculated as follows:

If $\{LT_j > TV_j\}$ then $MIV_j = 0$ and $MIP_j = 0$

else $MIV_j = TV_j$ and $MIP_j = TP_j$

Where:

P_{jc} is the price (£/MWh) of a qualifying contract 'c' in period 'j';

V_{jc} is the volume (MWh) of a qualifying contract 'c' delivered in period 'j';

W_c is the Weighting of qualifying contract 'c', with respect to the Relevant APX Product and the Timeband in which it was traded;

LT_j is the volume (MWh) of the Liquidity Threshold in period 'j'.

Sub-scripts:

'j' Settlement Period;

'c' qualifying contract.

Where no Liquidity Threshold has been provided for a Settlement Period the value will be set to 0, (except where the rules below for clock change days would otherwise apply).

If ELEXON does not provide Liquidity Thresholds specifically for the clock change days, then the following rules will be applied.

For a 'short' day, having 46 Settlement Periods (i.e. the spring clock change when 1am GMT changes to 2am BST):

Settlement Periods 1 to 2 (00:00 to 01:00 GMT) of the 'short' day take the values of Settlement Periods 1 to 2 (00:00 to 01:00 local time) of the 'normal' day data;

Settlement Periods 3 to 46 (02:00 to 24:00 BST) of the 'short' day take the values of Settlement Periods 5 to 48 (02:00 to 24:00 local time) of the 'normal' day data;

Settlement Periods 3 and 4 of the 'normal' day data are not used on a short day.

For a 'long' day, having 50 Settlement Periods (i.e. the autumn clock change when 2am BST changes to 1am GMT);

Settlement Periods 1 to 4 (00:00 to 02:00 BST) of the 'long' day take the values of Settlement periods 1 to 4 (00:00 to 02:00 local time) of the 'normal' day data;

Settlement Periods 5 to 6 (01:00 to 02:00 GMT) of the 'long' day take the values of Settlement Periods 3 to 4 (01:00 to 02:00 local time) of the 'normal' day data;

Settlement Periods 7 to 50 (02:00 to 24:00 GMT) of the 'long' day take the values of Settlement Periods 5 to 48 (02:00 to 24:00 local time) of the 'normal' day data.

The Market Index Price will be calculated in Pounds Sterling per MWh, supplied rounded to two decimal places, Market Index Volume will be supplied in MWh, rounded to three decimal places. Standard rounding rules will be applied, i.e. less than five round down, more than or equal to five round up.

APX (UK) shall submit Market Index Data to the BMRA no later than the end of the Settlement Period to which the data pertains and shall submit Market Index Data to the SAA and BSCCo no later than the end of the next Business Day following the relevant Settlement Day.

Relevant APX Products cease trading at or before Gate Closure for the first Settlement Period of delivery.

4. Erroneous Trades

Errors are determined in accordance with the provisions contained within the APX Master Service and Participation Agreement. Where APX (UK), in its absolute discretion, determines that a trade has been contracted through error, APX (UK) may reverse such a trade and make the necessary amendments to notifications and settlement. Such reversed trades shall not be included within the calculation of the Market Index Data.

Should APX (UK) become aware of an error or change that affects the underlying data of a previously submitted Market Index Data, such that the Market Index Data submitted is no longer the data that would have been submitted by APX (UK) in respect of that Settlement Period, APX (UK) will promptly inform the BSCCo of such change and its effect on the Market Index Data, recalculate and resubmit the Market Index Data for the relevant Settlement Period(s) and Settlement Day(s) taking account of such change.

Appendix 2: NASDAQ OMX Stockholm AB

Company Details

Company Name: NASDAQ OMX Stockholm AB (or any nominated Affiliate including ("Nord Pool Clearing ASA", "Nord Pool")

Registration Number: 556383 - 9058 (Sweden)

Address: NASDAQ OMX Stockholm AB
SE 105 78
Stockholm
Sweden

Town / City: Stockholm, Sweden, Postcode: SE – 10 578

Individual Liquidity Threshold

The BSC Panel has set the MIDP an Individual Liquidity Threshold, as follows:

From Settlement Day	To Settlement Day	From Settlement Period	To Settlement Period	Individual Liquidity Threshold
28/09/09	–	1	48	25 MWh

A2 Methodology Statement for NASDAQ OMX Stockholm AB (NOMX)

The methodology is designed to generate a Market Index Price (representing a weighted average price relating to qualifying contracts) for each Settlement Period.

A qualifying contract may take the form of any of the following relevant NASDAQ OMX Stockholm AB (NOMX) Products, specifically traded on or after the third calendar day prior to Gate Closure for the relevant Settlement Period.

1. Relevant NOMX Product definitions:

Half Hour – duration of 30 minutes, commencing either on the hour or half hour.

1 Hour Block – normal duration of 1 hour, commencing at: 01:00, 02:00, 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, & 00:00. On the March clock change day, there is no block commencing at 01:00. On the October clock change day, the block starting at 01:00 has a duration of two hours.

2 Hour Block – normal duration of 2 hours, commencing at: 01:00, 03:00, 05:00, 07:00, 09:00, 11:00, 13:00, 15:00, 17:00, 19:00, 21:00 & 23:00. On the March clock change day, the block starting at 01:00 has a duration of one hour. On the October clock change day, the block starting at 01:00 (BST) has a duration of three hours.

4 Hour Block – normal duration of 4 hours, commencing at: 03:00, 07:00, 11:00, 15:00, 19:00 & 23:00. On the March clock change day, the block starting at 23:00 has a duration of three hours. On the October clock change day, the block starting at 23:00 has a duration of five hours.

Overnight – normal duration of 8 hours, commencing at 23:00. On the March clock change day the product has a duration of seven hours. On the October clock change day the product has a duration of nine hours.

Peak – duration of 12 hours, commencing at 07:00. This product is not affected by clock change days.

Extended Peak – duration of 16 hours commencing at 07:00. This product is not affected by clock change days.

Day Ahead Auction – Duration of 1 hour. Trades are made by 09:30 each Working Day for the following day (except for Saturdays, Sundays and Mondays where Trades are made by 09:15, 09:30 and 09:45 respectively each Friday. For Public Holidays and the days following Public Holidays, agreement is made with the market as to the auction timing). Traded blocks commence at 23:00, 00.00, 01:00, 02:00, 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. On the March clock change day, there is no block commencing at 01:00. On the October clock change day, the block starting at 01:00 has a duration of two hours.

All relevant NOMX Products are for delivery via an Energy Contract Volume Notification to the ECVAA.

Each qualifying contract's contribution to the Market Index Price is weighted. The weighting varies both according to product and to time of trade. Each qualifying contract falls within a specific Timeband and has a specific Weighting (defined as follows):

SHORT-TERM TIMEBANDS – for qualifying contracts traded less than or equal to 24 hours prior to Gate Closure for the relevant Settlement Period:

ID	Difference between time of trade and Gate Closure for the relevant Settlement Period (Hours)
1	0 <= AND <=1
2	1 < AND <=2
3	2 < AND <=3
4	3 < AND <=4
5	4 < AND <=8
6	8 < AND <=12
7	12 < AND <=16
8	16 < AND <=20
9	20 < AND <=24

LONGER-DATED TIMEBANDS – for qualifying contracts traded greater than 24 hours prior to Gate Closure for the relevant Settlement Period:

ID	Day of Trade relative to Day of Gate Closure for the relevant Settlement Period
10	D-1
11	D-2
12	D-3

For the avoidance of doubt, as Market Index Prices are calculated on a Settlement Period basis, the Timeband is calculated by reference to the difference in time between the time the contract was traded and Gate Closure for the Settlement Period for which the price is being calculated, not the difference in time between the time the contract was traded and Gate Closure for the first Settlement Period of a multi-period contract. E.g. if the contract is a 2 Hour Block, (which has a duration of 4 Settlement Periods), the weighting given to individual periods within this contract could vary if the difference in time between the time the contract was traded and Gate Closure for the individual Settlement Periods falls within different Timebands.

Timebands will need no adjustment on clock change days, as they refer to the absolute time between Gate Closure for the Settlement Period and the time the product was traded, not the difference in the local time of Gate Closure and the time the product was traded.

2. Weightings

Weighting (W_c)	Timebands											
Relevant NOMX Product	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Half-Hour	1	1	1	1	1	1	1	1	0	0	0	0
1 Hour Block	1	1	1	1	1	1	1	1	0	0	0	0
2 Hour Block	1	1	1	1	1	1	1	1	0	0	0	0
4 Hour Block	1	1	1	1	1	1	1	1	0	0	0	0
Overnight	0	0	0	0	0	0	0	0	0	0	0	0
Peak	0	0	0	0	0	0	0	0	0	0	0	0
Extended Peak	0	0	0	0	0	0	0	0	0	0	0	0
Day Ahead Auction	0	0	0	0	0	0	0	0	0	0	0	0

The Weightings Table is fixed for all contracts delivering on any particular Settlement Day and is the same value in all Settlement Periods.

3. Price Formula

The half-hourly Traded Price (TP_j) is calculated as the weighted average price of all qualifying contracts.

If $\sum_{c=1}^{n}\left(V_{jc}W_c\right)=0$ then $TP_j = 0$

else

$$TP_j = \frac{\left\{\sum_{c=1}^{n}\left(P_{jc}.V_{jc}.W_c\right)\right\}}{\left\{\sum_{c=1}^{n}\left(V_{jc}.W_c\right)\right\}}$$

The half hourly Traded Volume (TV_j) is calculated as the sum of the volume of all qualifying contracts, where W_c for that qualifying contract is non-zero.

$$TV_j = \sum_{c=1}^{m} V_{jc}$$ (excluding values of V_{jc} where $W_c = 0$

The Market Index Volume (MIV_j) and Market Index Price (MIP_j) are calculated as follows:

If $\{LT_j > TV_j\}$ then $MIV_j = 0$ and $MIP_j = 0$

else $MIV_j = TV_j$ and $MIP_j = TP_j$

Where:

P_{jc} is the price (£/MWh) of a qualifying contract 'c' in period 'j';

V_{jc} is the volume (MWh) of a qualifying contract 'c' delivered in period 'j';

W_c is the Weighting of qualifying contract 'c', with respect to the Relevant NOMX Product and the Timeband in which it was traded;

LT_j is the volume (MWh) of the Liquidity Threshold in period 'j'.

Sub-scripts:

'j' Settlement Period;

'c' qualifying contract.

Where no Liquidity Threshold has been provided for a Settlement Period the value will be set to 0, (except where the rules below for clock change days would otherwise apply).

If ELEXON does not provide Liquidity Thresholds specifically for the clock change days, then the following rules will be applied.

For a 'short' day, having 46 Settlement Periods (i.e. the spring clock change when 1am GMT changes to 2am BST):

Settlement Periods 1 to 2 (00:00 to 01:00 GMT) of the 'short' day take the values of Settlement Periods 1 to 2 (00:00 to 01:00 local time) of the 'normal' day data;

Settlement Periods 3 to 46 (02:00 to 24:00 BST) of the 'short' day take the values of Settlement Periods 5 to 48 (02:00 to 24:00 local time) of the 'normal' day data;

Settlement Periods 3 and 4 of the 'normal' day data are not used on a short day.

For a 'long' day, having 50 Settlement Periods (i.e. the autumn clock change when 2am BST changes to 1am GMT);

Settlement Periods 1 to 4 (00:00 to 02:00 BST) of the 'long' day take the values of Settlement periods 1 to 4 (00:00 to 02:00 local time) of the 'normal' day data;

Settlement Periods 5 to 6 (01:00 to 02:00 GMT) of the 'long' day take the values of Settlement Periods 3 to 4 (01:00 to 02:00 local time) of the 'normal' day data;

Settlement Periods 7 to 50 (02:00 to 24:00 GMT) of the 'long' day take the values of Settlement Periods 5 to 48 (02:00 to 24:00 local time) of the 'normal' day data.

The Market Index Price will be calculated in Pounds Sterling per MWh, supplied rounded to two decimal places, Market Index Volume will be supplied in MWh, rounded to three decimal places. Standard rounding rules will be applied, i.e. less than five round down, more than or equal to five round up.

NOMX shall submit Market Index Data to the BMRA no later than the end of the Settlement Period to which the data pertains and shall submit Market Index Data to the SAA and BSCCo no later than the end of the next Business Day following the relevant Settlement Day.

Relevant NOMX Products cease trading at or before Gate Closure for the first Settlement Period of delivery.

4. Erroneous Trades

Where NOMX, in its absolute discretion, determines that a trade has been contracted through error, NOMX may reverse such a trade and make the necessary amendments to notifications and settlement. Such reversed trades shall not be included within the calculation of the Market Index Data.

Should NOMX become aware of an error or change that affects the underlying data of a previously submitted Market Index Data, such that the Market Index Data submitted is no longer the data that would have been submitted by NOMX in respect of that Settlement Period, NOMX will promptly inform the BSCCo of such change and its effect on the Market Index Data, recalculate and resubmit the Market Index Data for the relevant Settlement Period(s) and Settlement Day(s) taking account of such change.