

# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

---

**PAPER NAME** MIDS Consultation

---

**Target Audience** BSC Trading Parties

**Purpose of paper** For consultation

**Deadline for responses** 12.00 – 11 September 2014

**Summary** The Market Index Definition Statement (MIDS) defines the way the Market Index Price – used to determine the 'reverse' Energy Imbalance Price – is calculated. We review the MIDS annually, as required by the Balancing Settlement Code (BSC). Our analysis shows that the current Individual Liquidity Threshold (ILT), timeband weightings and product weightings are suitable. However, the calculation could better reflect trades close to Gate Closure. We recommend excluding trades more than eight hours ahead of Gate Closure rather than the current 12 hours.

**Contact Name and Details** Thomas Routier, Market Analyst  
[Thomas.routier@elexon.co.uk](mailto:Thomas.routier@elexon.co.uk)  
0207 380 4378

---

## 1. Executive Summary

- 1.1 We have carried out the annual Market Index Definition Statement (MIDS) review and our analysis indicates that the current Individual Liquidity Threshold (ILT), timeband weightings and product weightings are suitable. However, we could better achieve the MIDS Principles by removing timeband 6 from the calculation. The rationale is explained in section 2 below.
- 1.2 We used Market Index Base Data (MIBD) which details individual trades on the two power exchanges to review the performance of the parameters in accordance with the MIDS principles. Our key findings were:
- **Volume:** The average Settlement Period Market Index Volume (MIV) – the traded volume across weighted timebands and Products – was 620MWh during the review period which has increased by 17MWh from the previous year (603MWh). See appendix 1 chapter 2 for more information.
  - **Individual Liquidity Threshold (ILT):** Over this review period, the traded volume in every Settlement Period was above the ILT which demonstrates that the current 25MWh threshold remains suitable.
  - **Weighting values:** The weightings are currently either '1' or '0', where '1' results in the data being included and '0' excluded.
  - **Timebands:** The current '1' weighting of timebands 1 to 6 include all trades within 12 hours of Gate Closure. The analysis indicates that the current timeband weighting could be changed in accordance with the MIDS principles. A change to the timeband 6 weighting from '1' to '0' is considered in Appendix 2.
  - **Products:** The weighted products are those of half hour, 1 hour, 2 hour and 4 hour duration. The analysis indicates that the current timeband weighting remain suitable in accordance with the MIDS principles.

# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

---

## 2. Considered Change

- 2.1 Following our data analysis, we determined that the MIDS calculation process would be better meet the MIDS if timeband 6 was removed. This could be completed by changing the timeband 6 weighting to '0', only keeping timebands from 1 to 5 in the calculation.
- 2.2 The Market Index Price (MIP) needs to be based on the trades made as close as possible to Gate Closure. In that case, the calculation process better achieve the MIDS Principles if it was based on the eight hours prior to Gate Closure rather than the current 12 hours. Hence, timeband 6 should to be removed from the calculation process. Our analysis, included in Appendix 2, demonstrates that the liquidity available using timebands 1 to 5 remains adequate.

## 3. Electricity Balancing Significant Code Review

- 3.1 In its Electricity Balancing Significant Code Review (EBSCR), Ofgem published final policy decisions that included a single imbalance price calculation. BSC [Modification P305 'Electricity Balancing Significant Code Review Developments'](#) recommends a single price and subsequently may make the MIDS redundant. The Modification is in the assessment phase and subject to progress of the Modification, we expect the MIDS to be in place through to at least winter 2018.

## 4. Interruption of data submission from NOMX MPID

- 4.1 As of the 1 April 2014, one of the two Market Index Data providers, NASDAQ OMX Stockholm AB (NOMX), has suspended the submission of spot and prompt markets data used in the Energy Imbalance Price calculation. As presented to the June 2014 Panel meeting (Paper no. 225/17), the provider has continuously submitted zero data to ELEXON to date and will continue until it restarts market trading operations.

## 5. ISG views

- 5.1 The ISG has reviewed the analysis as presented at the August ISG meeting. The ISG noted the option to remove the '1' weighting on timeband 6 and the impact on the MIV. MIV would reduce by 3.03%, bringin it to a similar level as last review period and would slightly increase the defaulted Settlement Periods from zero to three.
- 5.2 The ISG discussed interactions of the change with the work done by the Ofgem around the Electricity Balancing Significant Code Review (EBSCR). The ISG requested an additional question to be added to the consultation proforma, asking the Participants for their view on the interactions between the MIDS and EBSCR.

The ISG requested further data on the impact that the change will have on the System Prices. This data has been provided as an attachment of this consultation paper.

# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

---

## Appendix 1 – Market Index Base Data Analysis

### **Chapter 1 - Background Information**

- Definitions of the terminologies used in the review

### **Chapter 2 - Analysis of the Market Index Volume (MIV)**

- An overview of average MIV by Settlement Date
- An overview of average MIV by timebands/products across Settlement Period

### **Chapter 3 - Analysis of the Individual Liquidity Threshold (ILT)**

- Principles to be applied to ILT
- Number of defaults in the review period and previous years
- Analysis of suitability for the current ILT

### **Chapter 4 - Analysis of the timeband and Product Weightings**

- Principles to be applied to timeband and product weightings
- Analysis of the current product and timeband weightings

### **Chapter 5 - Analysis All Products and timebands**

- Analysis of all timebands and products for potential changes on the current weightings
- Analysis of the Auction Product

# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

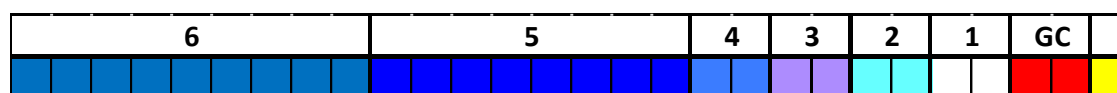
## 1. Background Information

- 1.1 We calculate a 'reverse' Energy Imbalance Price for every Settlement Period and use this for Energy Imbalance Settlement. The aim is for this 'reverse' price to reflect the price of wholesale electricity in the short term market for Great Britain.
- 1.2 Parties trade wholesale energy on power exchanges where they can buy and sell power exchange products. The products vary by duration and start time. A power exchange can provide data to us by becoming a Market Index Data Provider (MIDP). As a MIDP they calculate Market Index Data (MID), which consists of a half hourly price and volume. The calculation process is defined in the Market Index Definition Statement (MIDS).

The Market Index Definition Statement defines:

- The overall price (Market Index Price) and volume (Market Index Volume) calculation process
  - A volume threshold (Individual Liquidity Threshold), below which the default rules are applied
  - A list of power exchange products that are included in the calculation
  - A list of timebands which group trades according to how long before Gate Closure they are made
  - Weightings which reflect the importance of the products and timebands
  - Principles by which the weightings, products and thresholds are determined
- 1.3 The Individual Liquidity Threshold (ILT) is a volume threshold that is set to apply default rules when there is insufficient trading on the power exchange to provide a suitable price. The aim is to avoid the price being set on a single trade – i.e. not having the ILT too low – but also to minimise the number of Settlement Periods where the default rule is applied – not having the ILT too high.
- 1.4 When the volume traded in a half-hour is greater than the ILT, the Market Index Volume (MIV) is calculated as the sum of the traded volume across the selected products and timebands as defined in the MIDS. The Market Index Price (MIP) is the volume weighted average price of the trades. Where the volume does not meet the ILT, the MIP and MIV default to zero.
- 1.5 Trades are classified by a number of timebands which determine how long before Gate Closure the trade was made. These timebands cover a number of Settlement Periods. Timebands 1-6 are currently used to calculate the MIP. Timeband 6 begins 12 hours ahead of Gate Closure and is four hours in duration. Timeband 1 is the final hour up to Gate Closure. These timebands are shown in **Diagram 1** below.

**Diagram 1:** Timeband 1 to 6.



- 1.6 The current MIDS sets the products to be included in each half-hourly price and volume calculation as the half-hour, 1 hour, 2 hour and 4 hour products traded within 12 hours of Gate Closure.

## DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

1.7 **Weightings** are applied to reflect the importance of each product and timeband and are currently set to '1' or '0', which either completely include or exclude particular trades. The weightings applied to the different products and timebands used in the calculations are shown in **Table 1**.

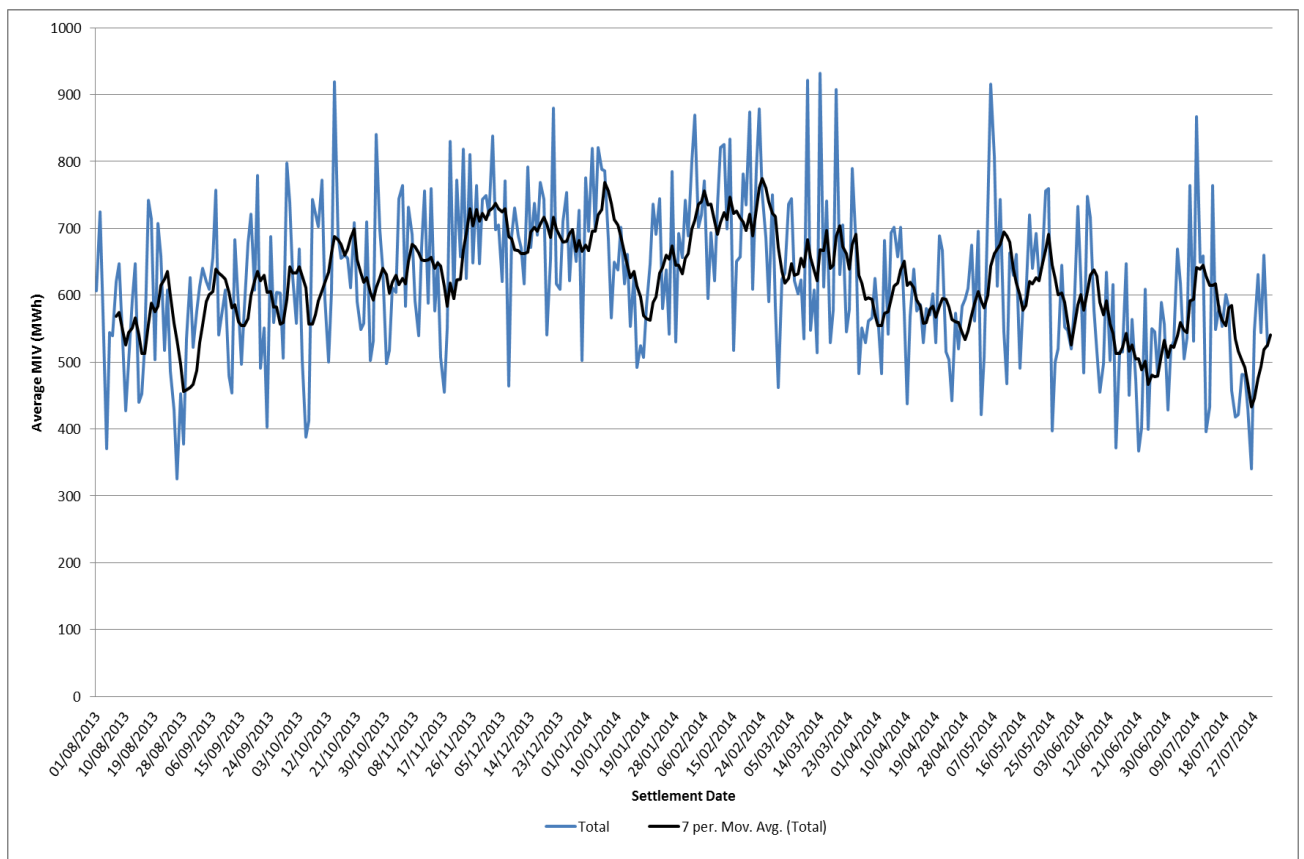
**Table 1:** Live Product and timeband Weightings

	Product	Timeband											
		1	2	3	4	5	6	7	8	9	10	11	12
Half-Hour	H	1	1	1	1	1	1	0	0	0	0	0	0
1 Hour Block	1	1	1	1	1	1	1	0	0	0	0	0	0
2 Hour Block	2	1	1	1	1	1	1	0	0	0	0	0	0
4 Hour Block	4	1	1	1	1	1	1	0	0	0	0	0	0
Overnight	O	0	0	0	0	0	0	0	0	0	0	0	0
Peak	P	0	0	0	0	0	0	0	0	0	0	0	0
Extended Peak	E	0	0	0	0	0	0	0	0	0	0	0	0
Day Ahead Auction	A	0	0	0	0	0	0	0	0	0	0	0	0

# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

## 2. Analysis of the Market Index Volume (MIV)

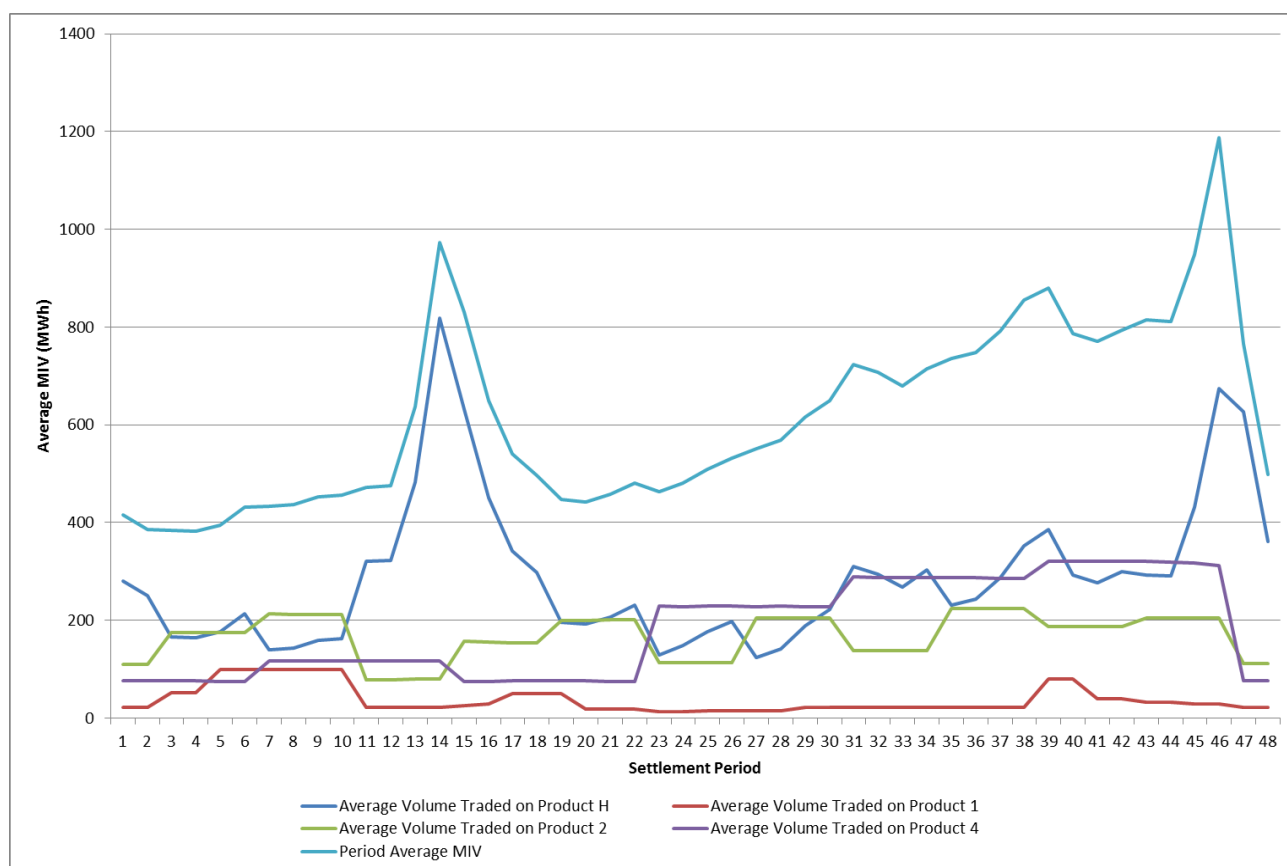
- 2.1 Market Index Volume (MIV) is the traded volume across the '1' weighted products and within '1' weighted timebands. The weightings are displayed in **Table 1**.
- 2.2 The daily average MIV was 620MWh over the review period, which has increased by 17MWh from the previous annual review which had an average of 603MWh.
- 2.3 **Graph 1** displays the daily average MIV throughout the review period. We witness a comparable shape to the previous review and the MIV reached a peak in October as well. However, the overall shape remained flatter than the previous year. Similarly to the last review, the MIV was also high during March and April 2014 with four peaks higher than 900MWh, as high as October's peak.
- 2.4 **Graph 1:** Daily Average Market Index Volume by Settlement Date



- 2.5 **Graph 2** shows the average MIV and average volume traded on each weighted product '1' by Settlement Period. Similar to the previous review, the Settlement Period average MIV increased through the day and peaked in Settlement Periods 14 and 46, where the volume traded on the Half Hour Product (H) peaks. Graph 2 shows that the One Hour Product had the least traded volume in comparison to the other products.

# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

**Graph 2: Average Market Index Volume by Settlement Period**



### 3. Analysis of the Individual Liquidity Threshold (ILT)

- 3.1 We carried out the analysis using the live products and timeband weightings specified in **Table 1**.
- 3.2 The ILT is currently set to 25MWh and triggers a default rule when there is a low liquidity of trades in a Settlement Period. When the MIV is not greater than the threshold, both the MIP and MIV are defaulted to zero.
- 3.3 The ILT must be set in accordance with the MIDS principles. We have analysed historic data to consider each of the principles and the results confirm that 25MWh is a suitable value. The principles that are applied in setting the ILT are:
- Individual Liquidity Thresholds should be set to the same value(s) for every Market Index Data Provider (MIDP);
  - Individual Liquidity Thresholds may be set to zero;
  - Individual Liquidity Thresholds may be set to different values for different Settlement Periods in the day and may vary by Season or Day Type;
  - Individual Liquidity Thresholds should be set based on the analysis of historic data;
  - 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; and

## DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

---

**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 the previous principle.

- 3.4 Currently both MIDPs have the value of 25MWh set, so principle **a)** is met.
- 3.5 The analysis shows that the ILT could be set to zero as per principle **b)** which would also meet principle **f)**. However, since no Settlement Period have defaulted throughout the year, reducing the ILT to zero would not improve any of the 17,520 Settlement Periods of that review period and this would also increase the likelihood that the MIP to be set on a single trade **e)**. In the current review period, no Settlement Periods – defaulted or otherwise - had the MIP based on a single trade. Principle **c)** allows the ILT to change across different periods, however, this would not impact any Settlement Periods and, as mentioned, could result in principle **e)** being compromised.
- 3.6 **Table 2** shows the number of defaults in the recent MIDS Reviews. Over the 2014 review period, no Settlement Periods were defaulted to zero.

**Table 2:** Defaulted Settlement Periods

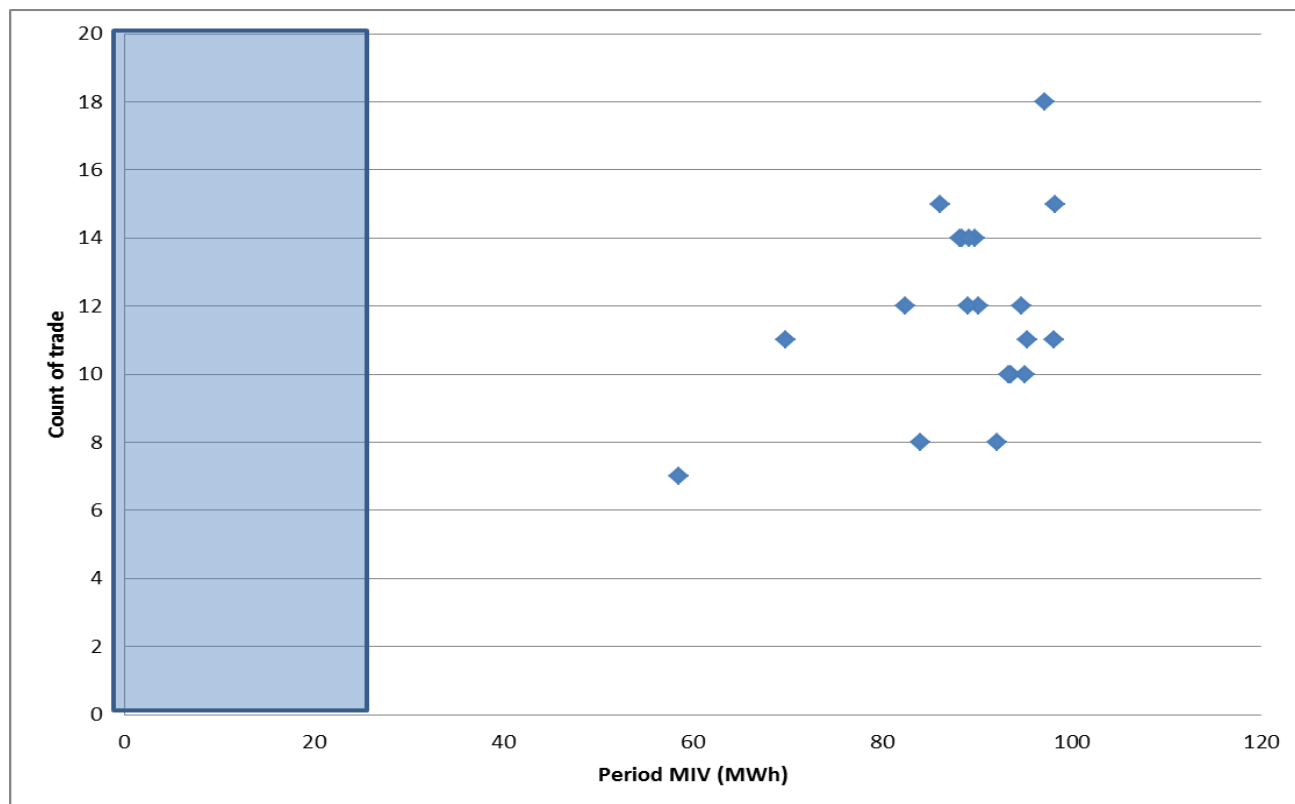
Review Periods	No. of Defaulted Settlement Periods
2006	38
2007	52
2008	5
2009	2
2010	6
2011	11
2012	6
2013	2
2014	0



# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

3.7 **Graph 3** shows the count of trades for Settlement Periods where the volume of trades was below 60MWh and that the MIP was not set by a single trade. Note that the data presented only displays one of the Market Index Data providers (MIDPs) – APX. Indeed, N2EX only met the ILT on ... out of ... Settlement Periods.

**Graph 3:** Count of Trades that MIP is set by under current parameters



3.8 As explained above, the historical data shows that no Settlement Periods have defaulted in the current review period, and also the MIP was not set by a single trade, therefore the current ILT of 25 MWh meets the principles and should remain unchanged. The data analysis of **Table 2** indicates that principle **d)** is met as an annual review of the defaulted Settlement Periods is made to ensure it is still relevant.

## 4. Analysis of the Timeband and Product Weightings

4.1 The analysis was carried out using the '1' weighted products and timebands specified in the live version of the MIDS. This is also shown in **Table 1**.

4.2 The timeband and product weightings determine which trades are included in the MIP and MIV calculation. Like the ILT, the timeband and product weightings are set in accordance with a set of principles detailed in the MIDS.

4.3 The principles are:

- 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;

## DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

---

- 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 (i.e. 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 Market Index Data Providers;
  - 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'; and
  - 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.
- 4.4 A number of the principles - **a), b), c), d), e), h)** and **i)** - are already met under the current operation. The remaining principles **f)** and **g)** are considered below.
- 4.5 The MIDP calculates the MIP using the weighted products and timebands when the MIV is above the 25MWh ILT. The '1' weighting is currently applied to products H, 1, 2 and 4 in timebands 1 to 6 which results in trades relating to these product and timeband combinations being used to calculate the MIP and MIV.
- 4.6 **Graph 4** shows the price curve for the '1' weighted products in each timeband. It can be clearly seen that the average prices variation was quite flat from timeband 6 towards Gate Closure (from right to left) for Product H, 2 and 4. The average price for Product 1 is not as flat as the other products which is due to a lower number of trades on this product (0.01% of all volume traded over the six timebands). Moreover, Product 1's average price has decreased toward Gate Closure which is the opposite situation as the one observed during the last review.

# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

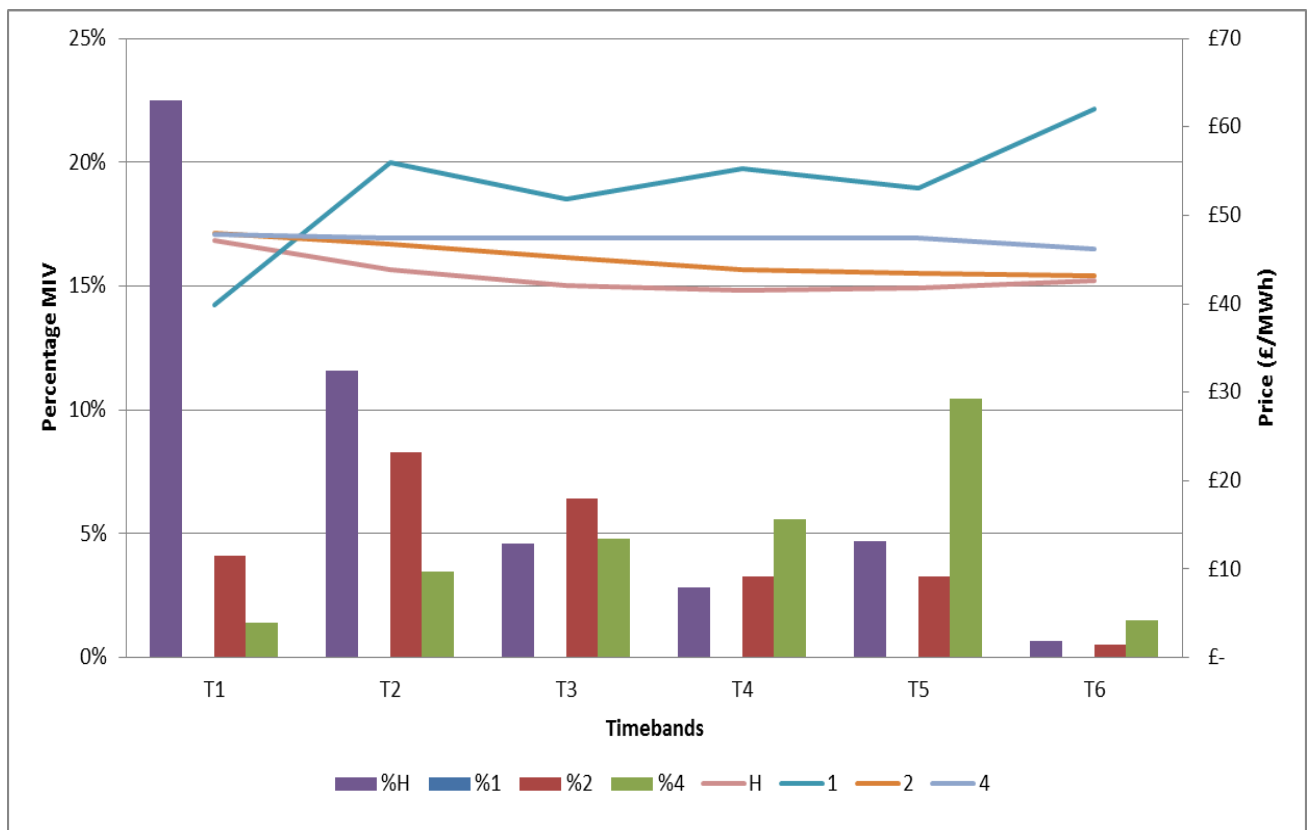
4.7 **Graph 4** also shows the percentage of traded volume on the '1' weighted products captured in the '1' weighted timebands. As expected, due to the nature of the products:

- The volume traded on the Half-Hour Product dominated in timebands 1 and 2;
- The volume traded on the 2-Hour Product was mainly captured in timebands 2 and 3; and
- Traded volume on the 4-Hour Product was mainly dominating in timebands 4 and 5.

It is worth noting that timebands 5 and 6 are of four hours duration compared to 1 to 4 which are only one hour.

4.8 We noted that the MIV captured in timeband 6 only accounted for 2.69% of the total MIV (based on the current products) which is 0.21% lower than what the previous review highlighted. This suggests that we could remove this timeband with minimal impact on liquidity (principle **f**). However a similar situation also occurred in the previous review and the view of industry was against removing timeband 6 considering the cost of changing the process and the potential impact of Ofgem's Significant Code Review (SCR). A Change consideration is included in Appendix 2 to support the need for removing timeband 6.

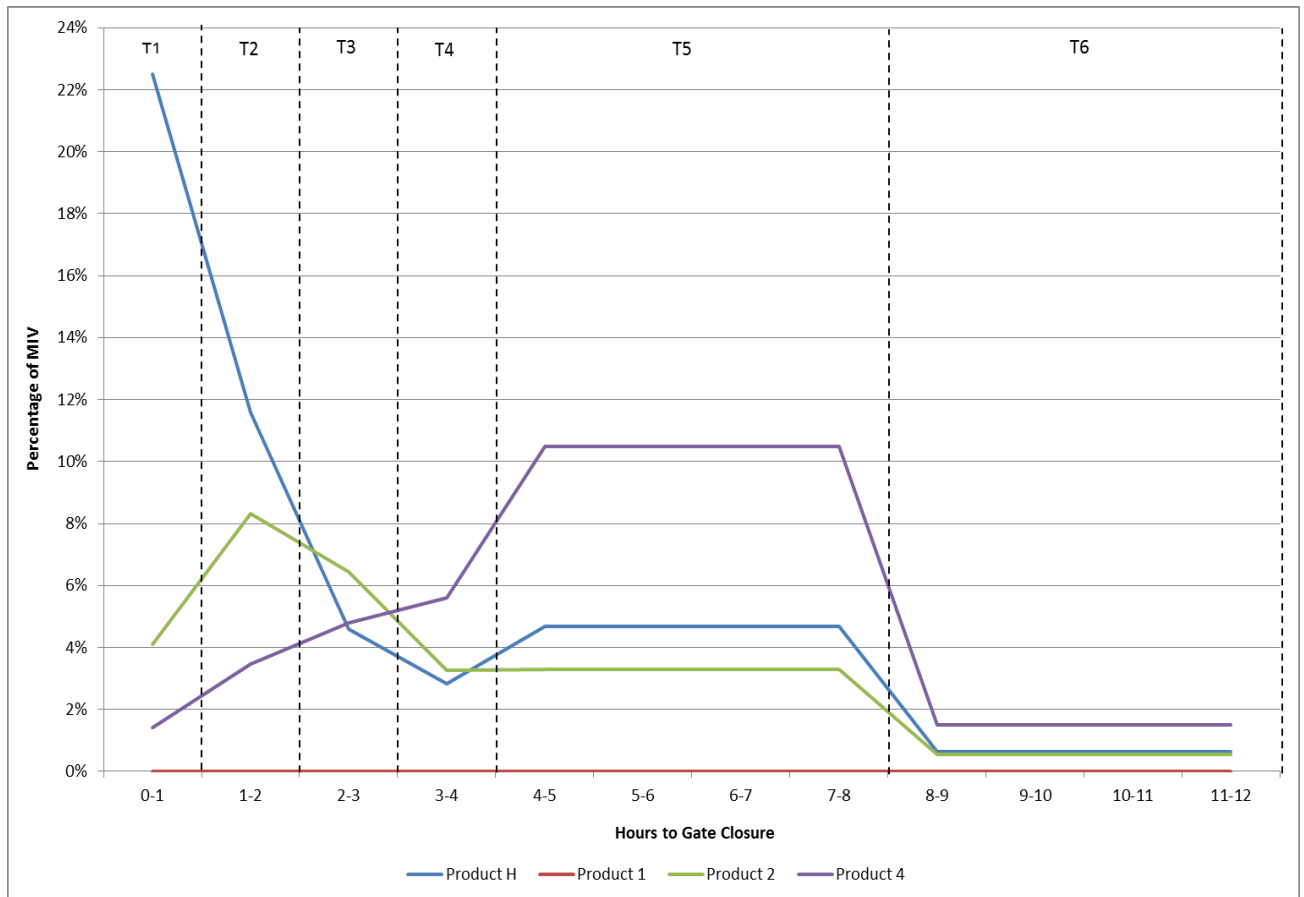
**Graph 4:** Average Price and Percentage of Market Index Volume by timeband



# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

4.9 **Graph 5** shows the same information as **Graph 4**, but with the x-axis to hourly scale. The volumes for the longer timebands (5 and 6) are averaged out across each of the four hours. The pattern shown in **Graph 5** remains the same as the one noted during the previous review for Products 1 and 2. However, the volume of Product 4 has significantly increased at timeband 5 compared to the last review, with an average peak above 10% over the four hours of the timeband.

**Graph 5:** Percentage of Market Index Volume by Time (hours) to Gate Closure



# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

---

## 5. Analysis of All Products and Timebands

5.1 All of the MIDS products are detailed in **Table 3** below and, so far, we have looked at 4 of the 9 products, as the weight of the others remains '0'. The analysis considers all of the products listed below except for the Auction Product (which is considered separately as the volume traded on this product is significantly larger than the other products).

**Table 3:** Products referenced in the MIDS

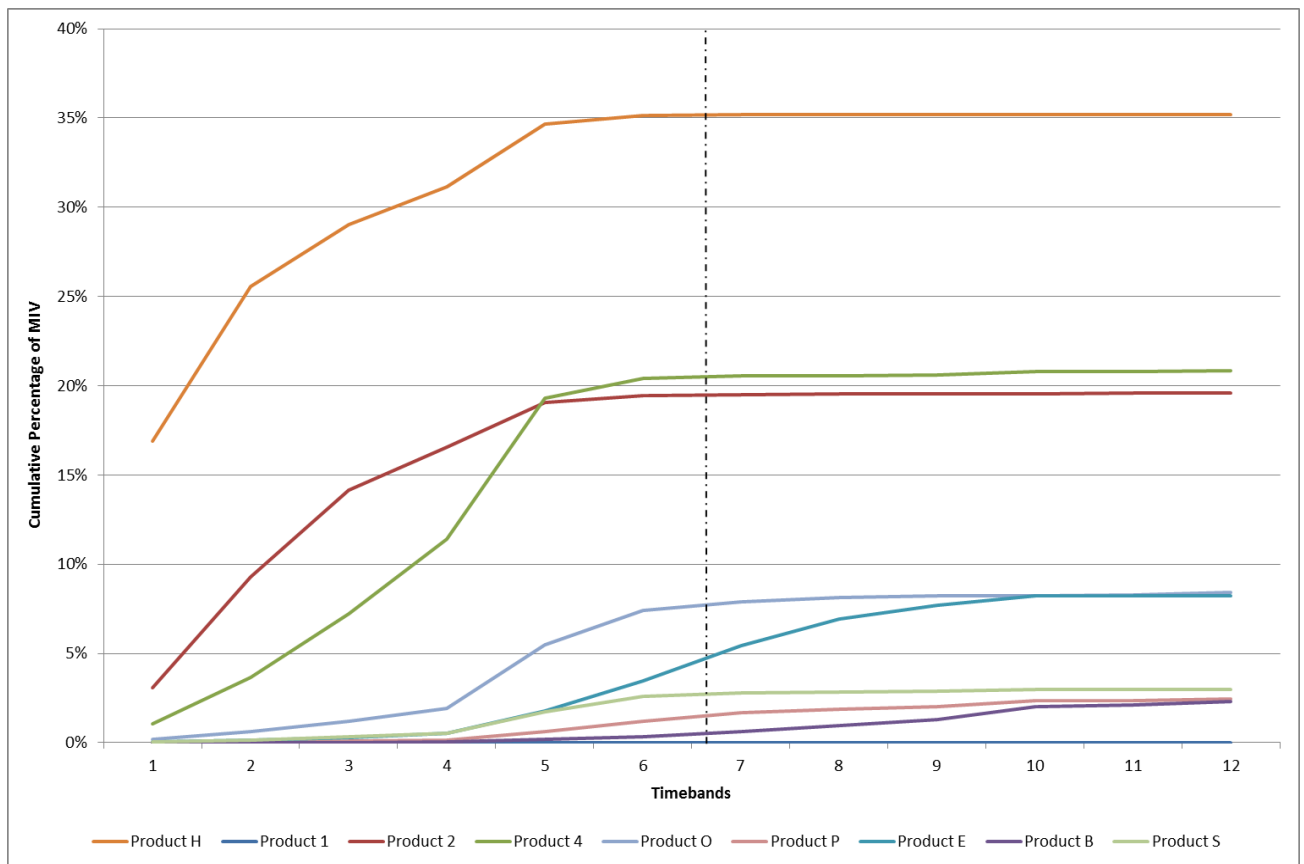
Product	Identifier	Duration (hours)
Half-Hour	H	0.5
1 Hour Block	1	1
2 Hour Block	2	2
4 Hour Block	4	4
Overnight	O	8
Peak	P	12
Extended Peak	E	16
Base Day	B	24
Day Ahead Auction	A	1

5.2 We have reviewed data for trades up to three Calendar Days ahead of Gate Closure and this period is broken down into 12 timebands. We have already discussed timebands 1-6 which cover trades made up to 12 hours ahead of Gate Closure. We will now consider timebands 1-12 to confirm the relevancy of the current weightings.

# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

- 5.3 **Graph 6** shows the cumulative percentage of volume traded on all products in all timebands for the review period. In the earlier timebands, a much higher percentage of volume is traded on products H, 2 and 4 than any other products. This suggests that the current products remain suitable as they are traded close to Gate Closure (principle **f**) and represent a significant percentage of the total volume.
- 5.4 The volume traded on the Overnight Product is visible in timebands 5 & 6, which is similar to that noted in the previous review. Previous consultations with industry on including this product have not resulted in any change to its weighting due to the risk of flattening or 'smoothing' effect.

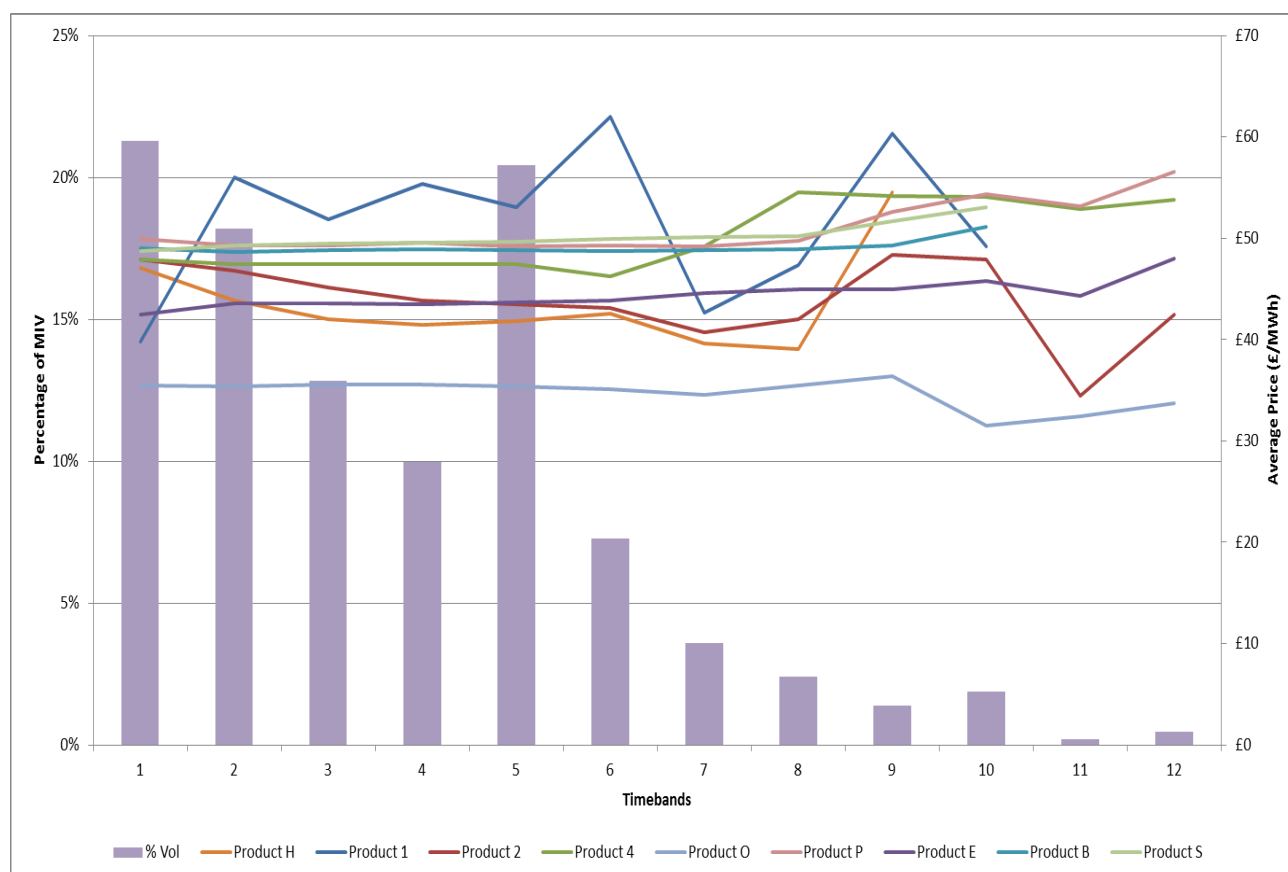
**Graph 6:** Cumulative Percentage of Total Trade Volume on all Products across all timebands



# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

5.5 **Graph 7** shows the average price of each traded product and the cumulative percentage of total volume traded in each timeband. The largest volumes were traded at timeband 1 (accounting for 21.30% of the total trade) followed by timeband 5 (20.44% of all trades). This is largely due to the volume traded on the Base Day Product as shown in the previous graph. The Base Day Product is 24 hours in duration. The Total volume traded at timeband 10 has dropped since last review when it accounted for more than 20%. This is largely due to a lower volume of trades on Product B on that timeband. The least volume is traded on the 1-hour product which follows the x-axis.

**Graph 7:** Percentage of total volume traded in each timeband



5.6 The analysis of all products and timebands suggests that, given that the current liquidity is sufficient in calculating MIP, there is no need to include any additional products or timebands. However, the low volume of trades in the last four hours suggests that the removal of timeband 6 would have a limited impact and could be possible.

## 6. Day Ahead Auction Product

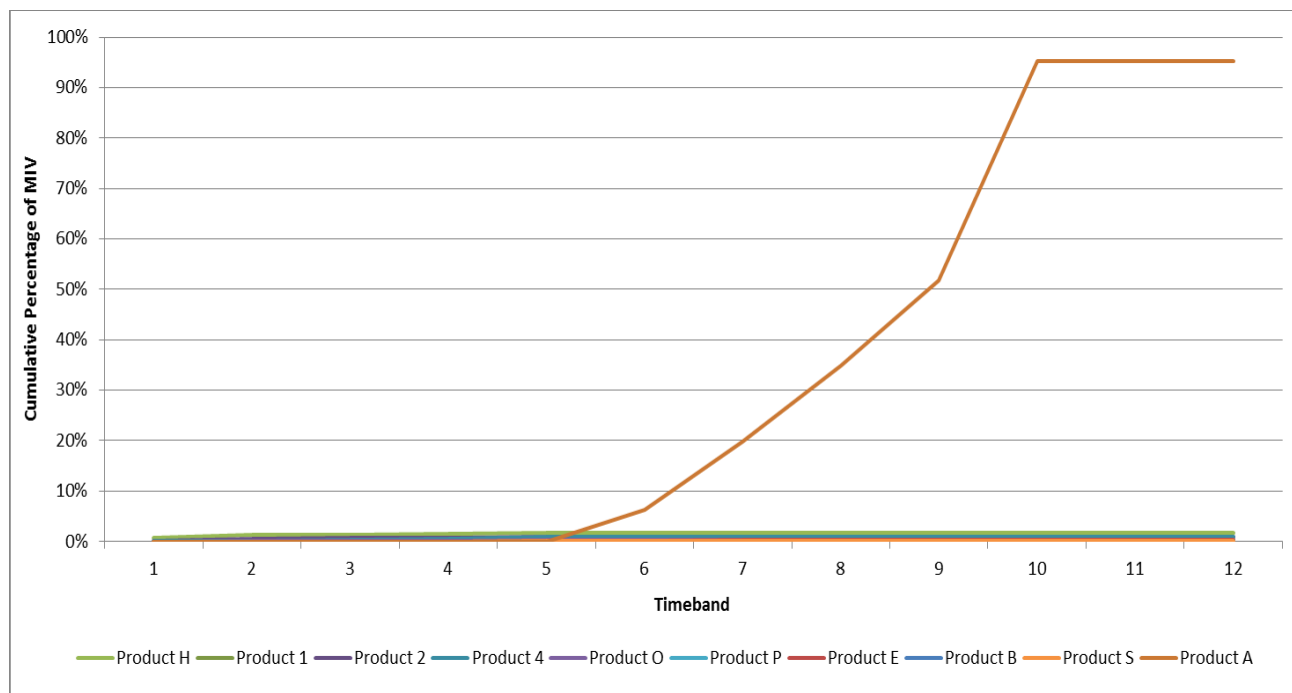
6.1 The Day Ahead Auction Product is a blind auction where buyers and sellers enter anonymous orders for each hourly period from 23:00 to 23:00. The auction market closes at 10:30, after which the orders are matched for each hourly period. The time that the orders are matched gives the trade time used in calculating the timeband for the trade.

6.2 The Auction Product has been given '0' weighting and the ISG recommended that this product should be monitored considering its large traded volume on the market.

## DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

- 6.3 **Graph 8** shows that the Auction Product accounted for 95.23% of total traded volume during the review period. The product only applies to one weighted timeband, timeband 6. Unlike the other products this product is not traded in timebands 1 to 5 that are closer to Gate Closure.
- 6.4 Considering the current market liquidity and weighting principle **f)**, the current '0' weighting on the Auction Product remains suitable.

**Graph 8:** Cumulative Percentage of total traded volume on all Products (including A) across all timebands



- 6.5 **Table 4** shows the total traded volume on all products across all timebands. As outlined in the above **Graph 8**, Product A accounts for most of the traded products and, overall, a large proportion of all trades (43.52%) is made during timeband 10 driven by Product A (accounting for 43.44% of all trades at timeband 10).

**Table 4:** Percentage of Total Traded Volume on all Products across all timebands

Products	Timebands											
	1	2	3	4	5	6	7	8	9	10	11	12
1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2	0.15%	0.30%	0.23%	0.12%	0.12%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
4	0.05%	0.12%	0.17%	0.20%	0.37%	0.05%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%
A	0.00%	0.00%	0.00%	0.00%	0.00%	6.27%	13.50%	15.17%	16.85%	43.44%	0.00%	0.00%
B	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.02%	0.03%	0.01%	0.01%
E	0.00%	0.00%	0.01%	0.01%	0.06%	0.08%	0.09%	0.07%	0.04%	0.03%	0.00%	0.00%
H	0.81%	0.41%	0.16%	0.10%	0.17%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
O	0.01%	0.02%	0.03%	0.03%	0.17%	0.09%	0.02%	0.01%	0.00%	0.00%	0.00%	0.01%
P	0.00%	0.00%	0.00%	0.00%	0.02%	0.03%	0.02%	0.01%	0.01%	0.01%	0.00%	0.01%
S	0.00%	0.01%	0.01%	0.01%	0.06%	0.04%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%
Grand Total	1.02%	0.87%	0.61%	0.48%	0.97%	6.62%	13.68%	15.28%	16.92%	43.52%	0.01%	0.02%



# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

## Appendix 2 – Removal of Timeband 6 – Impact Analysis

### 1. Rationale behind the proposal

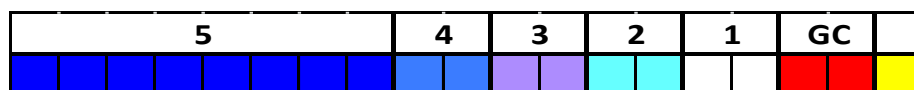
1.1 According to Principle **f)** from the *Principles to be applied in setting product and time weighting values*, 'Weighting may be set to ensure the Market Index Price is reflective of the price of trades as close as possible to Gate Closure'. Under that principle, the Market Index Price calculation should be based on trades made as close as possible to Gate Closure. Therefore, in order to make the calculation process in better accordance with the MIDS Principles, we considered the removal of timeband 6, changing its weighting from '1' to '0' and reducing the time cover to Gate Closure from 12 to eight hours.

### 2. Impact on MIDS

2.1 In order to support our proposal to remove timeband 6 from the MIP calculation process, we have simulated a similar analysis to the one included in Appendix 1, without timeband 6.

2.2 **Diagram 2** shows the proposed timebands potentially used to calculate the MIP. By removing timeband 6, the calculation method would cover eight hours to Gate Closure.

**Diagram 2:** Proposed timebands 1 to 5.



2.3 Regarding the weightings, the removal of timeband 6 from the MIP calculation process would be done by changing its current weightings from '1' to '0' as described below on **Table 5**.

**Table 5:** Proposed Live Product and Timeband Weightings

	Product	Timeband											
		1	2	3	4	5	6	7	8	9	10	11	12
Half-Hour	H	1	1	1	1	1	0	0	0	0	0	0	0
1 Hour Block	1	1	1	1	1	1	0	0	0	0	0	0	0
2 Hour Block	2	1	1	1	1	1	0	0	0	0	0	0	0
4 Hour Block	4	1	1	1	1	1	0	0	0	0	0	0	0
Overnight	O	0	0	0	0	0	0	0	0	0	0	0	0
Peak	P	0	0	0	0	0	0	0	0	0	0	0	0
Extended Peak	E	0	0	0	0	0	0	0	0	0	0	0	0
Day Ahead Auction	A	0	0	0	0	0	0	0	0	0	0	0	0

## DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

The following table shows the different areas potentially affected by the removal of timeband 6 and the potential impact on them.

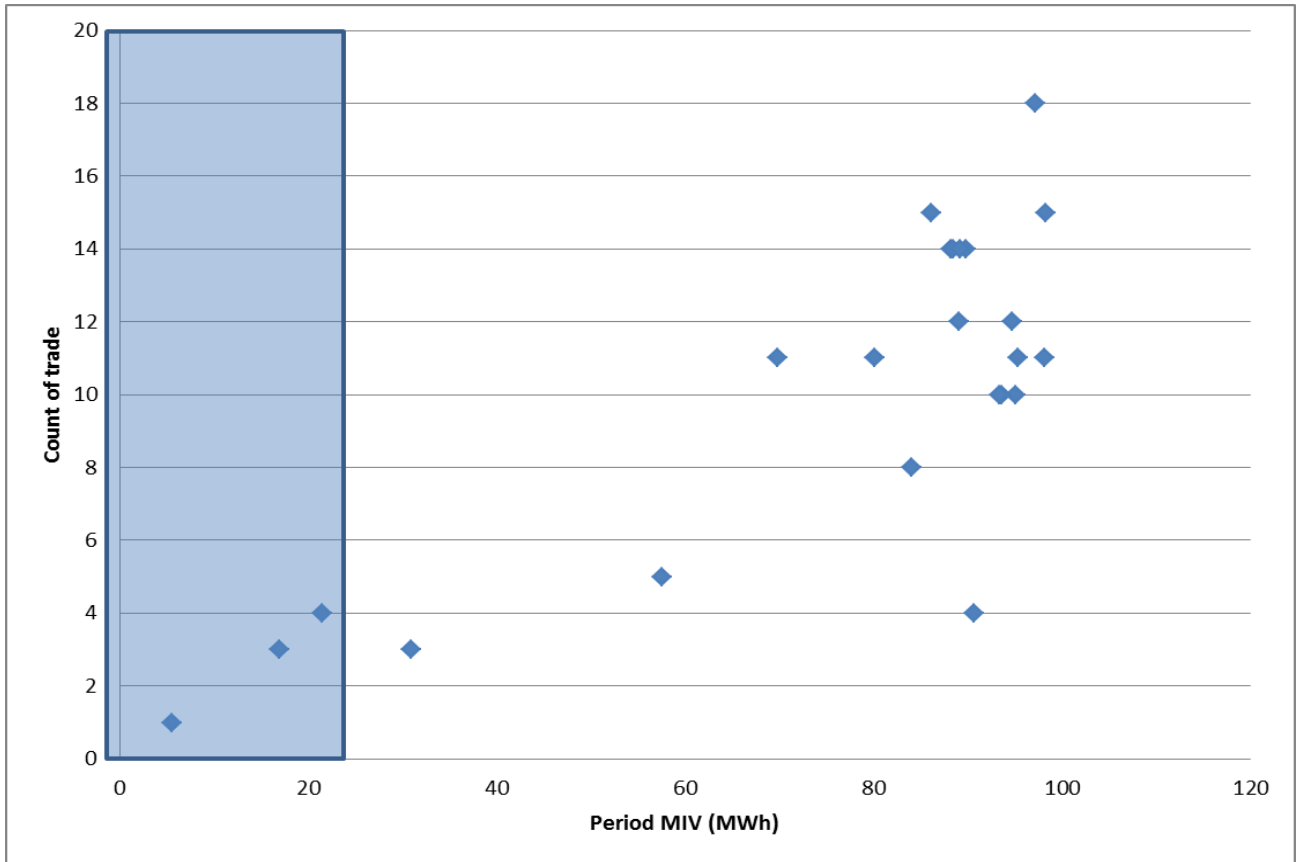
Affected area	Impact	Scale
Average Market Index Volume (MIV)	Limited	<b>-3.03%</b>
ILT & Defaults	Limited	<b>+3</b> Defaulted Settlement Periods
Market Index Price (MIP)	Limited	Average MIP <b>+£0.02</b> /Affected Settlement Period <b>96.1%</b> of Settlement Periods affected by less than <b>£0.50</b> <b>98.2%</b> of Settlement Periods affected by less than <b>£1.00</b>

- 2.4 The original analysis, in Appendix 1, identifies the low volume traded at timeband 6 suggesting a limited impact on the amount of liquidity used to calculate the reverse price. By removing timeband 6, the total volume traded across all products would reduce by 2.69%. The average MIV would be 601.74MWh as compared to 620MWh with timeband 6 which represent a decrease of 3.03%. The MIV would be comparable to that observed during the 2012/2013 review period (603MWh).
- 2.5 Our analysis demonstrates that removing timeband 6 would raise the number of defaulted Settlement Periods from zero to three. Historical comparison driven by principle d) indicates that this number of defaults remains relatively low. Table 2 in Appendix 1 shows the historical number of defaulted Settlement Periods. Based on timebands 1 to 5, our analysis demonstrates that the average MIP would increase by £0.02 in affected Settlement Periods.
- 2.6 Graph 10 and Graph 11 below represent, respectively, the number of defaulted Settlement Periods and the price change on all Settlement Periods when removing timeband 6.

We have modelled the Settlement calculations across the same period as the MIDS review, 1 August 2013 to 31 July 2014. We have applied changes in System Buy Prices (SBP) and System Sell Prices (SSP) to analyse the impact on individual Parties. 71.6% of all Parties were impacted by £100 or less, 30.6% are not affected by the change at all. 7.8% of all Parties would be affected by an amount over £1,000 with three Parties (1.4%) affected by more than £5,000. Graph 12 shows the annual impact on Trading Charges for BSC Parties where changes exceed £100 following the removal of timeband 6.

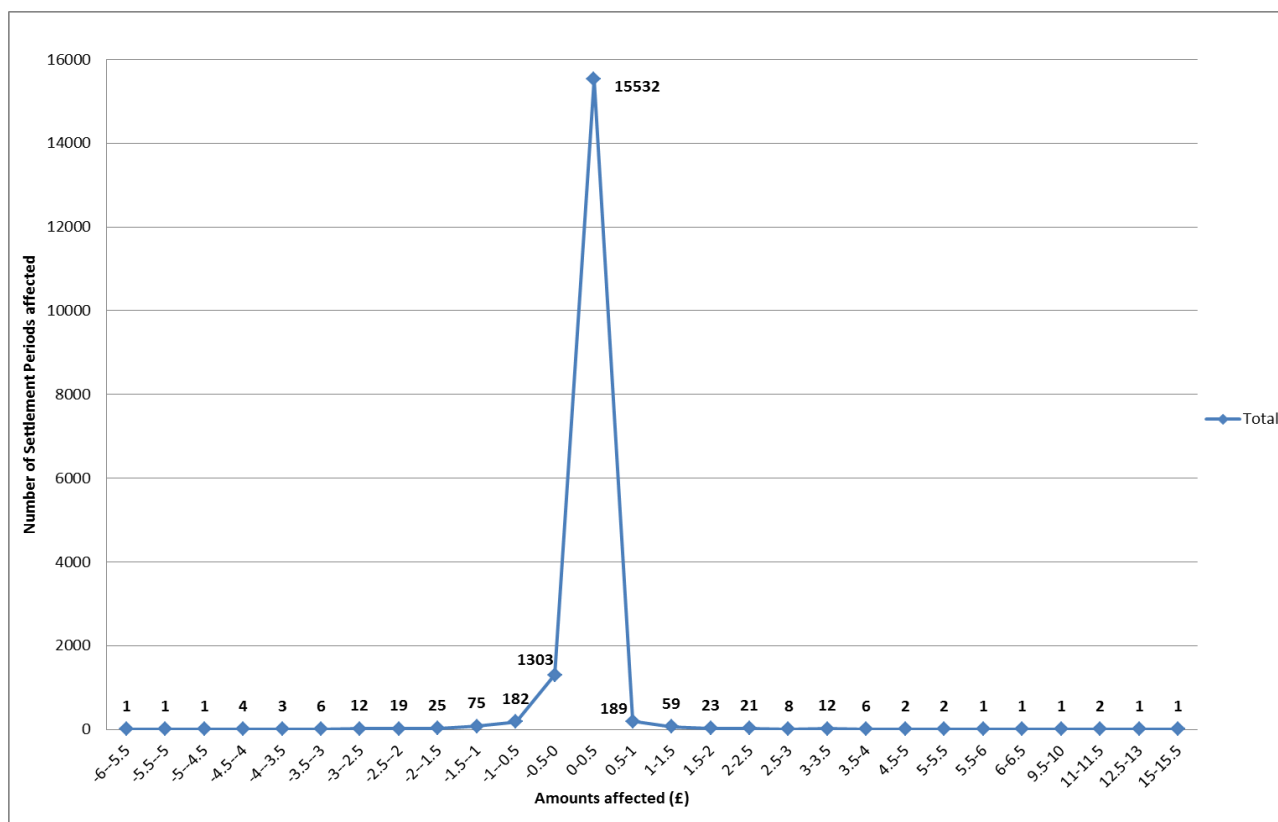
# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

**Graph 10:** Count of Trades that MIP would be set by under suggested parameters



# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

**Graph 11:** Differences between the live MIP calculation and the MIP calculation without timeband 6



**Table 6:** Trading Charge Impact on BSC Parties (absolute values)

Affected By	Number of Parties	% affected
£ > £5000	3	1.4%
£ > £1000	17	7.8%
£1000 ≤ £ < £100	45	20.5%
£100 ≤ £ < £10	39	17.8%
£10 ≤ £ < £1	25	11.4%
£1 ≤ £ < £0	26	11.9%
No effect	67	30.6%

# DATA REVIEW FOR THE MARKET INDEX DEFINITION STATEMENT 2014

**Graph 12:** Annual impact on trading Charges for BSC Parties where changes exceed +/- £100

