

Review of the Market Index Definition Statement

Date Published: 25 August 2011

Overview or Purpose of Document:

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 BSC.

The MIDS defines a set of principles to which threshold and weighting parameters are applied to determine the data that is included in the price calculation. In this paper we present analysis on the performance of these parameters in meeting the principles.

Our analysis shows that the Individual Liquidity Threshold and product/timeband weightings specified in the current MIDS remain suitable.

The Imbalance Settlement Group (ISG) has requested industry views on possible changes to product and timeband weightings before making its recommendation to the BSC Panel.

Your responses to this consultation will be presented to the ISG in September when they will be invited to make a final recommendation on the MIDS to the BSC Panel. The consultation responses need to be submitted by **17:00 on Friday, 9 September 2011.**

Target Audience:

All Parties and other interested parties in connection with the MIDS.

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1 Summary

We have carried out the annual Market Index Definition Statement (MIDS) Review and the analysis indicates that the current parameters are suitable, and therefore should remain unchanged. To perform the analysis, we used Market Index Base Data (MIBD), which details individual trades made on the power exchanges. Our key findings were:

- **New MIDP:** In April, a second MIDP began providing Market Index Data. The new MIDP introduced new Products into the market and has increased trading on the Auction product. This is discussed in Section 7 of Appendix 1.
- **Volume:** The average Market Index Volume (the Traded Volume across weighted timebands and products) has increased by 40MWh to 579MWh per Settlement Period. See Appendix 1 Section 3 for more information.
- **Individual Liquidity Threshold:** There were 11 Settlement Periods where the Traded Volume was below the ILT. This represents 0.06% of all Settlement Periods in the review period. The current value of the ILT – 25MWh – 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 '1' weighting of timebands 1 to 8 include all trades within 20 hours of Gate Closure. Due to the increased volumes traded on the Auction and other longer duration products, only 61% of the total volume is traded within timebands 1 to 8. See appendix 1 sections 5 to 7 for more information. Unless additional products are included in the MIDS, changing the timeband weightings would have little impact on the calculation of Market Index Data.
- **Products:** The weighted products are those of half hour, 1 hour, 2 hour and 4 hour duration. The new MIDP has introduced the 1 hour product. These remain suitable as they meet the key criteria within the MIDS, and account for 61% of the volume in the weighted timebands. Since the introduction of the new MIDP, the Day Ahead Auction Product has become increasingly popular, with a significant volume traded within the weighted timebands. See appendix 1 sections 4 to 7 for more information.

We have found that the current Individual Liquidity Threshold, timeband and product weightings remain appropriate in determining the Market Index Data Price and Volume in accordance with the principles of the MIDS.

Large volumes are now traded on the Day Ahead Auction product in timebands 7 and 8 and therefore there may be an argument for including it in the calculation of market Index data, if the timeband weightings remain the same. However, it may not be the most suitable product given the principles of the MIDS. This is also true of the Overnight product.

The ISG has reviewed our analysis and has recommended that the ILT remains the same, but have requested that industry opinion be sought about the possible inclusion of the Auction and Overnight products. A summary of the ISG discussions is provided on the next page.

2 ISG Discussions

The ISG reviewed the analysis and consider the current ILT of 25MWh remains suitable.

The ISG noted that the new MIDP has resulted in a significant change in the way that energy is traded in the short term market. A significant volume is now being traded on the Day Ahead Auction Product in the three of the weighted timebands. As the product is traded in one-hour blocks, the ISG felt it was consistent with the type of product currently included in the weightings. The Auction Product is not traded in timebands 1-5 and only in low volumes in timeband 6, which are closer to Gate Closure. It would not be included if timebands 7 and 8 were not weighted. The ISG members felt that the Auction product is suitable for inclusion, but wished to get the opinions of the industry on this product through the consultation before making its final recommendations to the BSC Panel.

Similarly, opinion is sought on including the Overnight product, which accounts for a large proportion of the traded volume in the overnight period.

A further item for consideration is whether timebands 7 and 8 could be removed to ensure only those Trades made within 12 hours of Gate Closure are included.

The ISG did not believe any additional timebands should be included.

Price Impact

If the various scenarios had been in place between 5 April 2011 and 31 July 2011, the Reverse Price would have been impacted in the following manner:

	Product A		Product O		Both		No Timebands 7 & 8	
Total Settlement Periods	5664		5664		5664		5664	
Settlement Periods Impacted	2386	42.13%	1888	33.33%	2386	42.13%	5664	100.00%
SPs with MIP increase	1210	21.36%	990	17.48%	1288	22.74%	318	5.61%
SPs with MIP decrease	1175	20.75%	898	15.85%	1098	19.39%	210	3.71%
Impacted SPs with no change	1	0.02%	0	0.00%	0	0.00%	5136	90.68%
Average Change	£0.02		£0.09		£0.13		£0.10	
Average Increase	£1.34		£1.33		£1.37		£0.28	
Average Decrease	-£1.41		-£1.28		-£1.32		-£0.18	
Max Increase	£8.10		£5.69		£6.32		£4.40	
Max Decrease	-£7.64		-£5.52		-£6.60		-£2.52	

Including products A and O would not impact every Settlement Period due to the nature of the products; product O is only traded for the period 23:00 to 7:00 each day and the Auction product is traded several hours ahead of Gate Closure (this is discussed in Section 7). Including either results in a change in the Market Index Price in each of the Settlement Periods it impacts, but this change is evenly split between increases and decreases. Approximately 50% of the changes are less than £1 in either direction. Including either product would also result in there being no Settlement Periods defaulting due to insufficient liquidity.

Removing timebands 7 and 8 would potentially impact every Settlement Period, however as the volumes traded on the weighted products in these timebands is so low, less than 10% of Settlement Periods have seen a change in the MIP, and on average these changes are very small. If timebands 7 and 8 were removed, there would have been no increase in the number of defaulted Settlement Periods.

Market Index Base Data Analysis

1 Background Information

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.

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, and;
- Principles by which the weightings, products and thresholds are determined.

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).

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 selected trades. Where the volume does not meet the ILT the MIP and MIV default to zero.

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 1-8 are used to calculate the MIP. Timeband 8 begins 20 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.

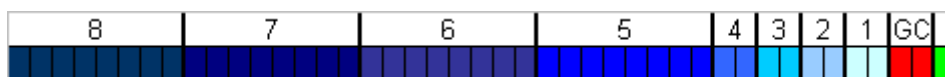


Diagram 1: Timebands 1 to 8.

The current MIDS sets the **products** to be included in each half hourly price and volume calculation as the half hour, 1 hour (introduced following the entry to the market of the new MIDP), 2 hour and 4 hour products traded within 20 hours of Gate Closure (timeband 8).

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.

	Product	Timeband											
		1	2	3	4	5	6	7	8	9	10	11	12
Half-Hour	H	1	1	1	1	1	1	1	1	0	0	0	0
1 Hour Block	1	1	1	1	1	1	1	1	1	0	0	0	0
2 Hour Block	2	1	1	1	1	1	1	1	1	0	0	0	0
4 Hour Block	4	1	1	1	1	1	1	1	1	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

Table 1: Current Product and Timeband Weightings

The MIDS parameters must be set according to historic data. In this review we have used base data for the period 1 August 2010 to 31 July 2011. If the historic data shows that a change to the MIDS is required, the change will need approval by the Panel and ultimately the Authority.

2 New MIDP

On 5 April 2011, NasdaqOMX Stockholm AB (NOMX) began submitting Market Index Base Data for the N2EX Power Exchange. Up until the end of the review period (31 July 2011), approximately 2,000MWh had been traded on the weighted timebands and products on this new power exchange. Consequently, it has had little impact on Market Index Volume and Market Index Price, and most of the focus of the first sections of this review will be on trades made on the APX exchange.

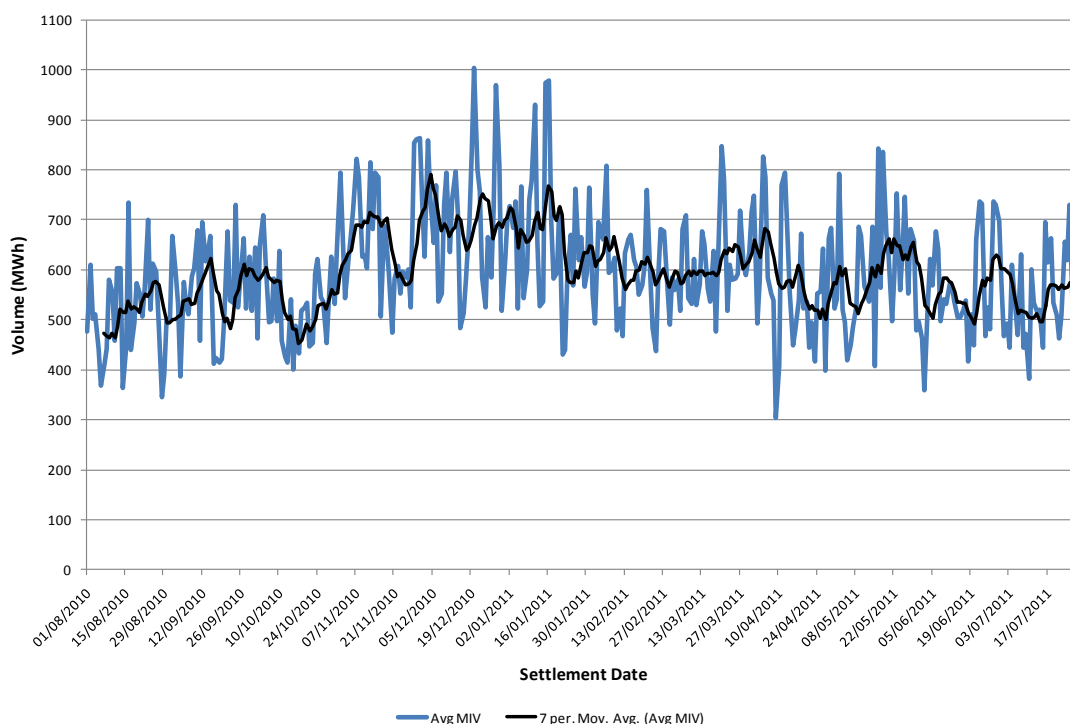
The majority of Trading on the N2EX is undertaken on products that are not included in the MIDS. These are discussed in Section 8.

3 Market Index Volume

Market Index Volume is the Traded Volume across the '1' weighted products and timebands. This means products H, 1, 2 and 4 up to timeband 8 (20 hours before Gate Closure) are included.

The overall average of the Market Index Volume (MIV) has increased from the previous review period. When we undertook the review last year, the average MIV was 539MWh, this year the average MIV for 1 August 2010 to 31 July 2011 was 579MWh. Graph 1 shows the daily average MIV throughout the review period.

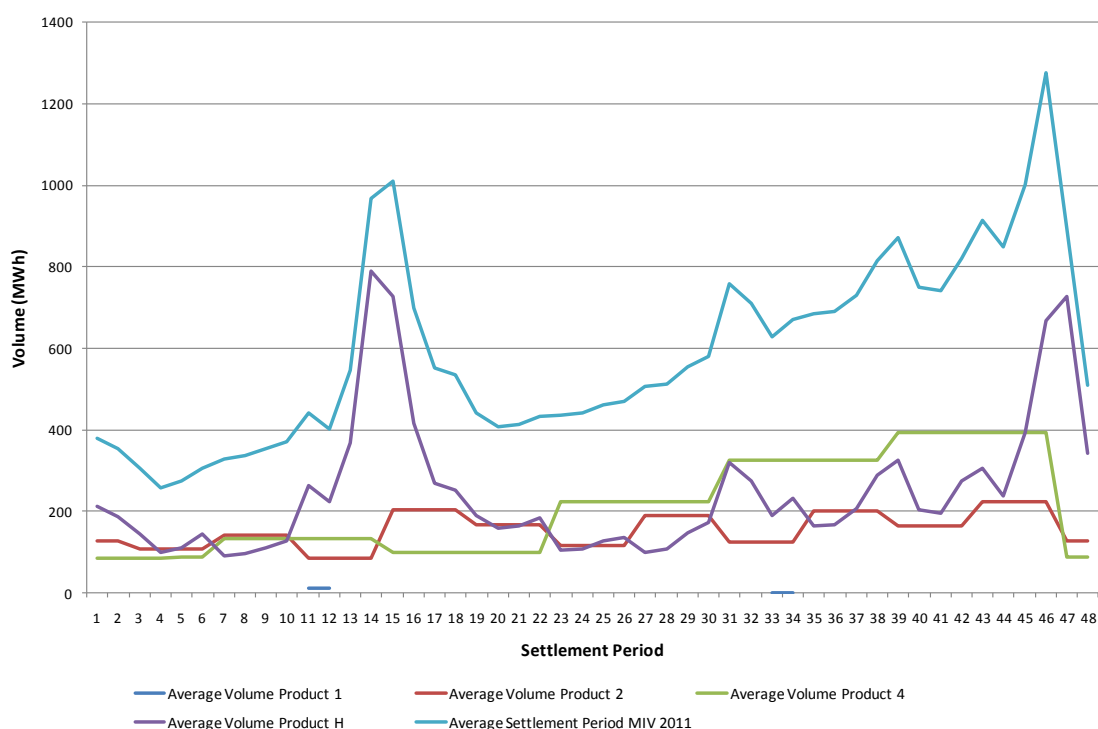
The pattern is similar to that noted in the previous review, with a peak in MIV noted across winter, which decreases throughout the rest of the year.



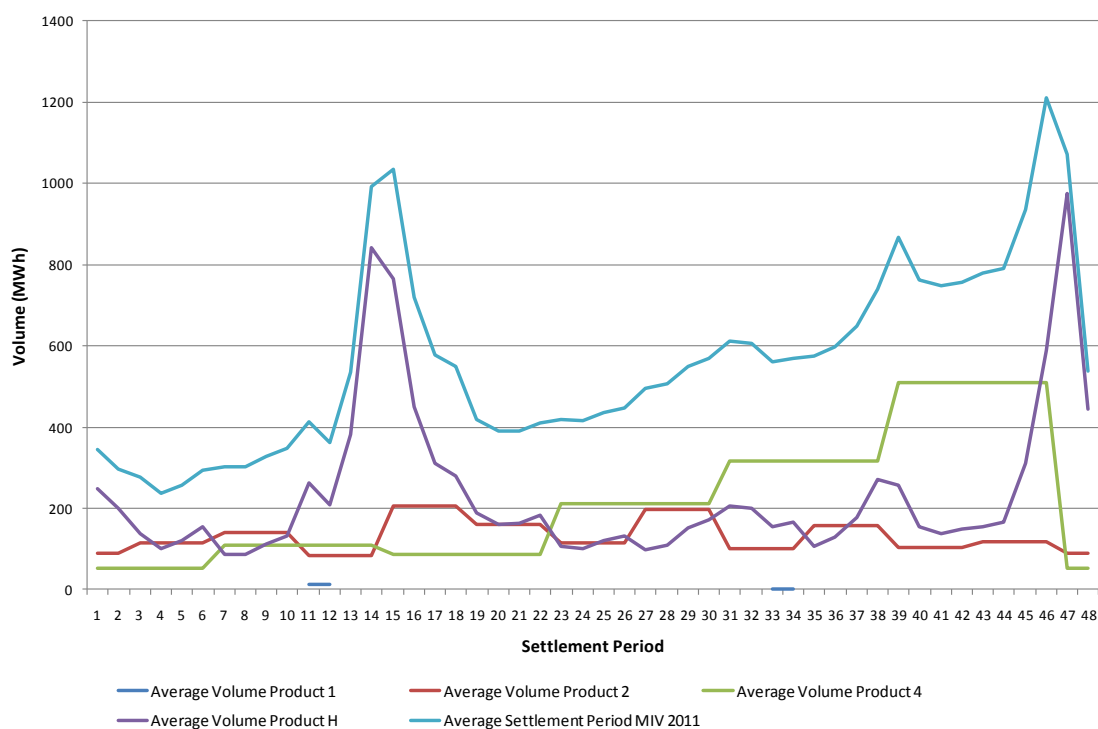
Graph 1: Average Settlement Period MIV by Settlement Date

Graph 2 displays the average MIV and volume for products H, 1, 2 and 4 in timebands 1-8 by Settlement Period for the entire reference period. The half hour product dominates the MIV in the morning peak and also around Settlement Period 47. The trends are very similar to those evidenced in the last review – with the least volume across Settlement Periods 1 to 12. Very little volume – 54MWh – was traded on Product 1 during the period.

Graph 2a shows the same information since 5 April 2011 in order to see if the introduction of the new MIDP has had any impact on the overall trading practices on these products. The averages are slightly lower, but this is to be expected given the decrease in MIV noted above, but the overall pattern of trades remains the same. The only notable differences being the increase in volume traded on the H and 4 products during the later part of the Settlement Day.



Graph 2: Average MIV by Settlement Period



Graph 2a: Average MIV by Settlement Period since 5 April 2011

4 Individual Liquidity Threshold

The Individual Liquidity Threshold (ILT) is 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.

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:

- a)** Individual Liquidity Thresholds should be set to the same value(s) for every Market Index Data Provider (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; and
- 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.

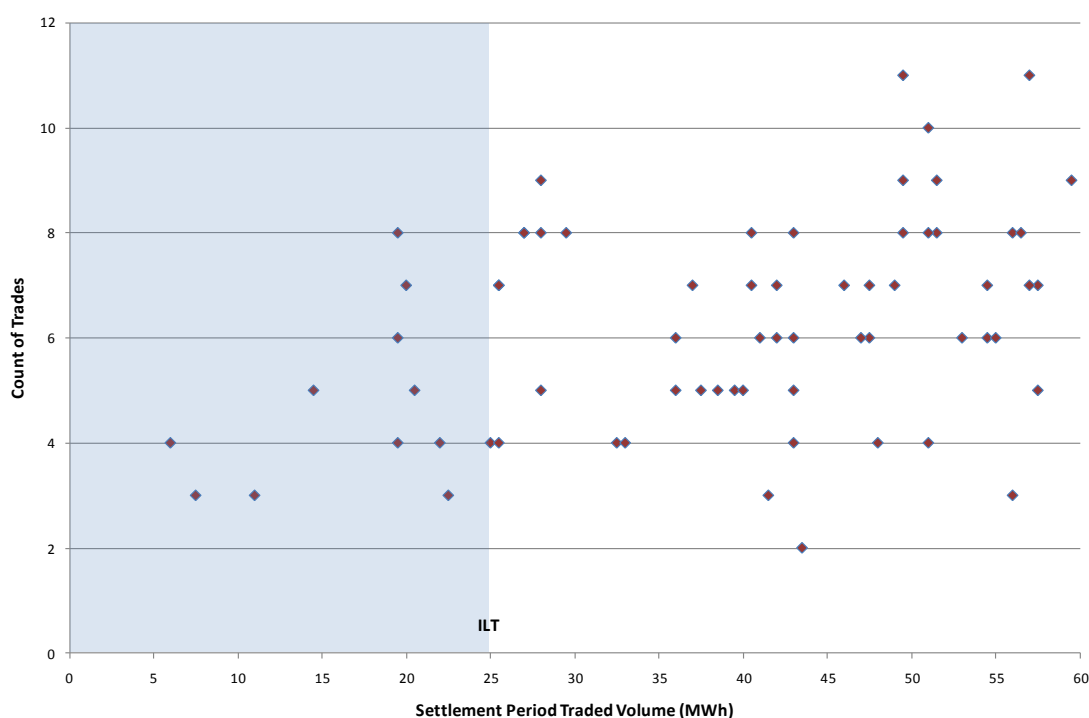
Currently both MIDPs have the value of 25MWh set, so principle **(a)** is met.

The analysis shows that the ILT could be set to zero as per principle **(b)** which would also meet principle **(f)**. However if we reduce the ILT to zero it would only improve 11 Settlement Periods out of 17520 in the review period. This would also increase the likelihood that the MIP could be set on a single trade **(e)**. Although in the latest 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 only impact 11 periods, and as mentioned could result in principle **(e)** being compromised.

Review	No. of Settlement Periods below ILT
2006	38
2007	52
2008	5
2009	2
2010	6
2011	11

Table 2: Defaulted Settlement Periods

Over the review period, where MIV has been above the ILT, the MIP has not been set on a single trade. Graph 3 shows that there is a risk of this happening, as in one period, it was set on two trades, and on three in another two Settlement Periods. However, this is not a significant risk as it represents 3 in 17520 Settlement Periods.



Graph 3: Count of Trades that MIP is set by

With regard to the new MIDP, only 4 of the defaulted Settlement Periods occurred since N2EX began trading. No trades were made on the new exchange during those periods, so having a lower ILT for both MIDPs would not have improved the situation, and would increase the possibility of the MIP being set on a single trade.

Analysing the split of trades used for the MIP between the overnight period (Settlement Periods 1-12) and the rest of the day, there has been an increase in the average number of trades per Settlement Period overnight trades by 1 to 21. The rest of the day averaged 41 Trades per Settlement Period, which is an increase from 37.

The historic data **(d)** shows that the current ILT of 25MWh meets the principles to be applied in setting the ILT.

5 Timeband and Product Weightings

The timeband and product weightings determine which trades are included in the MIP and MIV calculation. The weightings were introduced in section 1 where table 1 displays the current product and timeband weightings. Like the ILT, the timeband and product weightings are set in accordance with a set of principles detailed in the MIDS. We have considered each principle in this review and the results show that the current weightings remain suitable.

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;
- 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 (e.g. 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.

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.

6 '1' Weighted Products and Timebands

The MIDP calculates a Market Index Price and Volume using the weighted products and timebands when the Market Index Volume is above the 25MWh ILT. The '1' weighting is applied to products H, 1, 2 and 4 in timebands 1 to 8 which results in trades relating to these product and timeband combinations being used to calculate the MIP and MIV.

Graph 4 shows the price curves for the '1' weighted products and the volume traded in each timeband. Note that the x-axis is not completely to scale as timebands vary in duration (see diagram 1 in section 1). The curves display similar characteristics to previous reviews, increasing in price from timeband 5 towards Gate Closure (from right to left). The rise in price is less rapid than in previous years and overall prices have shown a marked increase, which reflects the rises in wholesale market prices over the last year.

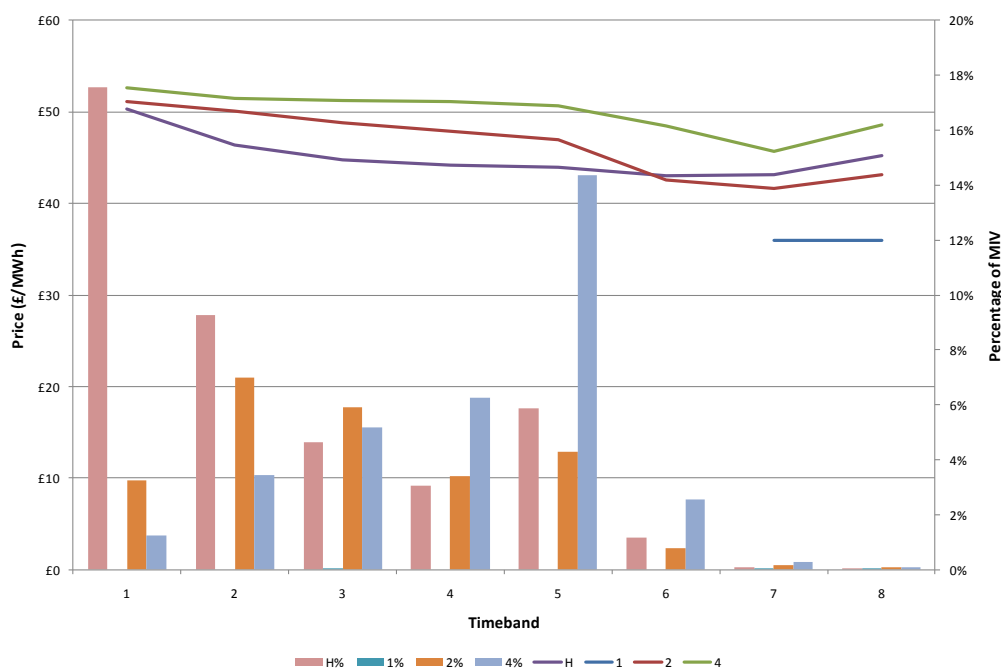
Principle **(f)** states that the weightings may be set to ensure that the MIP is reflective of the price of trades as close as possible to Gate Closure. Graph 4 displays a very low traded volume across timebands 7 and 8. It could be argued that these should be weighted at '0', and the data shows that removing the weightings from these timebands would not have impacted the number of Settlement Periods that were below the ILT.

Graph 5 is similar to graph 4, but with the x-axis to scale in hours. Due to the lack of sufficient detail in the data, the volumes for the longer timebands are an average per hour for the timeband and therefore not representative of the true traded volumes. However, breaking down the timebands into these hourly periods shows that the spike in timeband 5 for product 4 is as a result of the extended length of the timeband as opposed to an increase in volume. Product H shows an increasing volume towards Gate Closure; this is expected in a 'short term' market as more short duration trades are made to avoid exposure to imbalance charges.

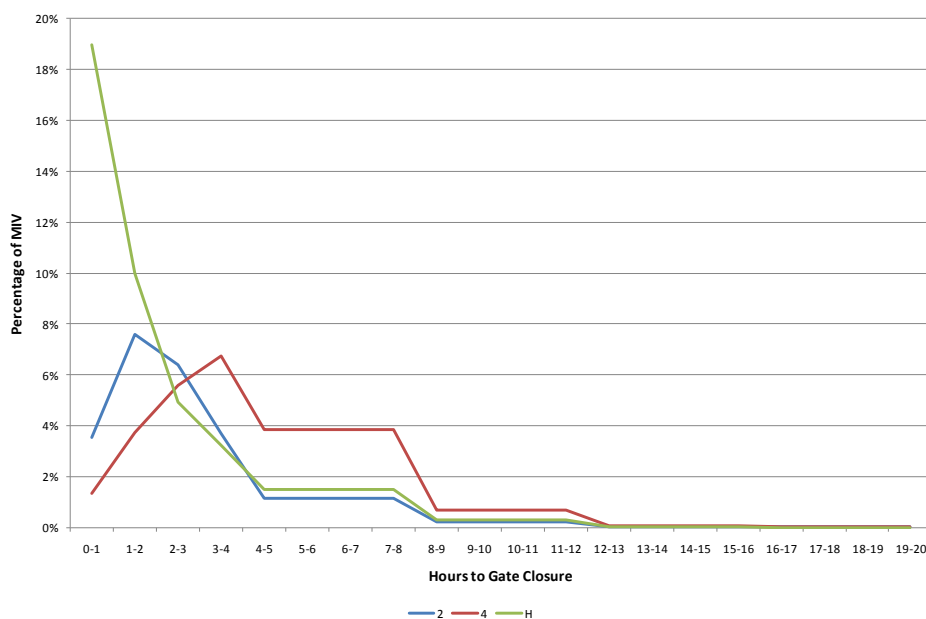
The pattern shown in Graph 5 is exactly the same as that noted in the last review. The percentage split has changed slightly, with a greater percentage being traded on the Half-Hourly product in the hour before gate closure. Beyond timeband 5, longer duration products, and the Day Ahead Auction product become more popular and power exchange trades switch away from the short duration products H, 2 and 4. These other products are discussed in the next section of this report.

Overall, the data shows that the current '1' weighted products and timebands are suitable in reflecting the 'short term' price of energy in accordance with the MIDS principles.

Currently, on the N2EX market the only weighted product traded across every timeband is the 4 hour one. This means that the average prices are mainly those on the APX exchange.



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



Graph 5: Average Price and Percentage of Market Index Volume by Time to Gate Closure

7 All Products and Timebands

The MIP is a half hourly price and could be represented by just the half hour product traded as close to Gate Closure as possible. However, due to possible issues with liquidity, other products and trades made further away from Gate Closure are included. So far we have looked at 4 of the 7 products listed in the MIDS. The remaining products are O, P and E which are for 8, 12 and 16

hour periods, which will be discussed now. In addition, we have looked at the other products traded on the power exchanges. Details of these products are provided in Table 3 below.

The introduction of N2EX to the market is a significant change from previous years. Whereas originally short-term trading was carried out on the APX exchange alone, since 5 April 2011 70% of all volume traded has been through the N2EX exchange. Consequently, this section of the review will focus mainly on the period 5 April 2011 to 31 July 2011. Extra focus is placed on the Auction Product A, as since the 5 April 2011 this has accounted for 41% of all traded volume across both exchanges.

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
Blocks 3 & 4	S	8
Day Ahead Auction	A	1

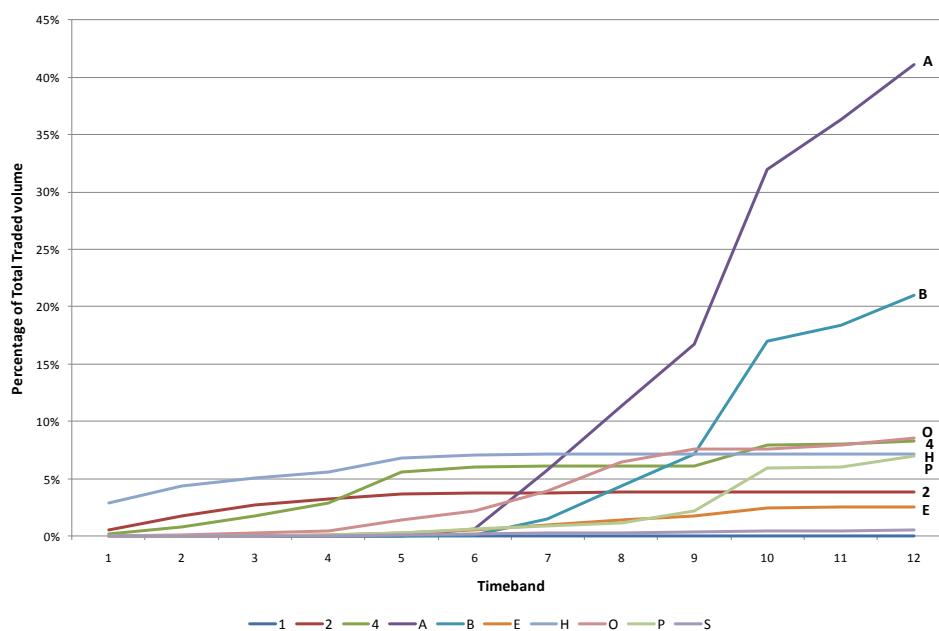
Table 3: Products Traded on the Power Exchanges

We receive data for trades up to 3 Business days ahead of Gate Closure and this period is broken down into 12 timebands. We have already discussed timebands 1-8 which cover trades made up to 20 hours ahead of Gate Closure. We will now consider timebands 1-12.

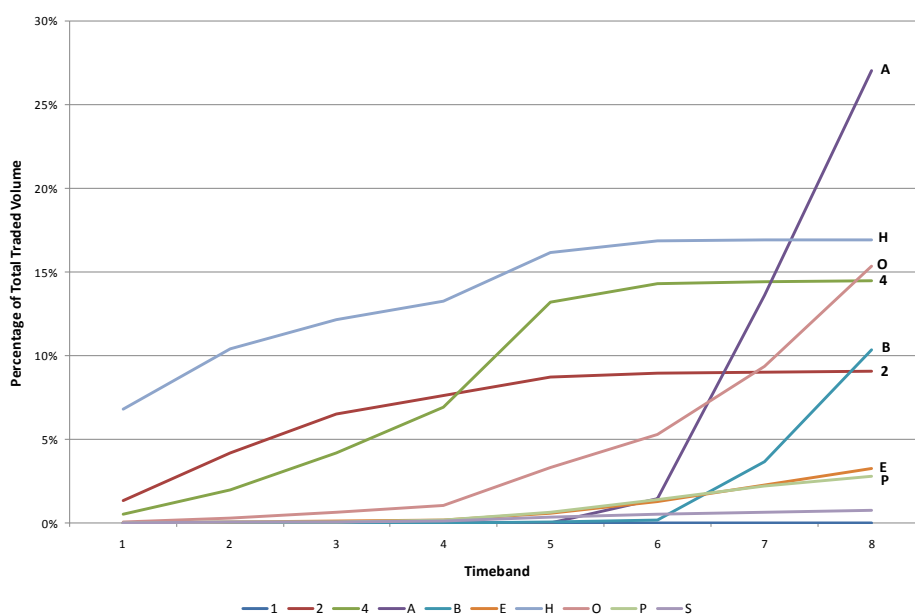
All Products and Timebands

Graph 6 shows the cumulative percentage of total volume for all products since 5 April 2011. This shows that the majority of the traded volume is on two products; the Day Ahead Auction and B – which is 24 hours in length – in the timebands that are furthest away from Gate Closure.

As there is such a heavy emphasis on those two products in later timebands, Graph 6a shows the same information, but for timebands 1 to 8 only. In the earlier time bands, a much higher percentage of total volume is traded on products H, 2 and 4 than any other products. The graph shows that products H, 2 and 4 remain the most suitable products to be used in calculating the MIP as they are traded closest to Gate Closure **(f)** and represent a significant percentage of the total volume traded in these timebands.

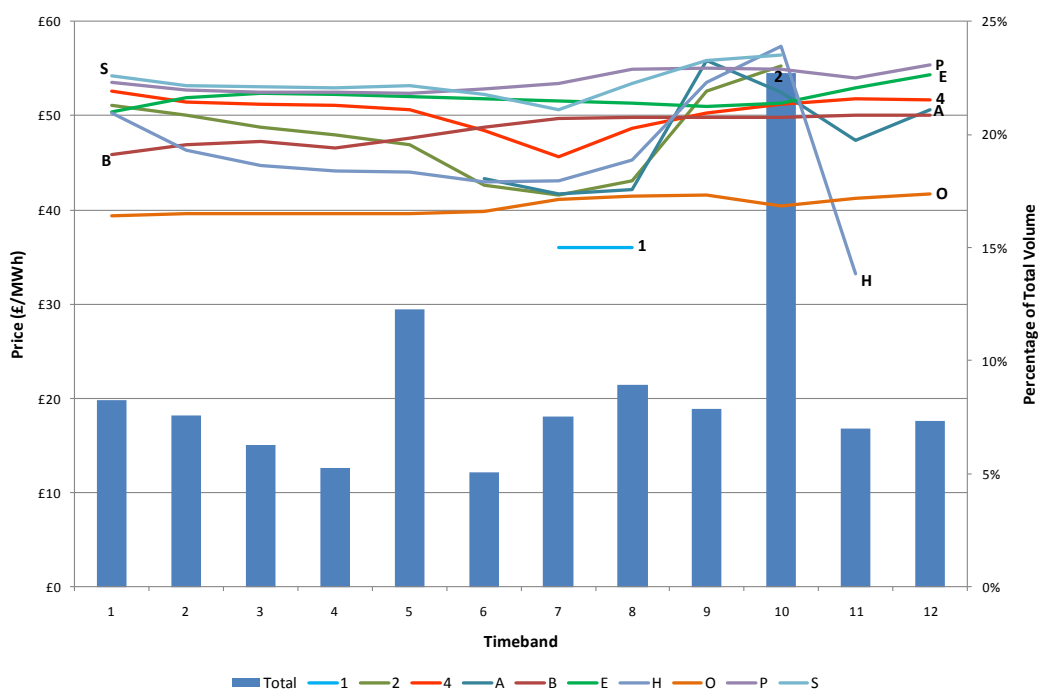


Graph 6: Cumulative Percentage of Total Traded Volume



Graph 6a: Cumulative Percentage of Total Volume traded in timebands 1 to 8

Graph 7 shows the average price of each traded product and the percentage of total volume traded in each timeband.



Graph 7: Average Price of Product by Timeband and Percentage of Total Volume by Timeband

Auction Product

The 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 in the morning, after which the orders are matched for each hourly period. The time that the orders are matched gives the trade time that ELEXON has used in calculating the timeband for the trade. In some European markets the Auction product Price is used exclusively to provide the reverse Imbalance Price.

The Auction Product is traded in 1 hour blocks, so it fits with the current weighted products in the MIDS, which are of 30 minute, 1, 2 and four hour durations.

When the product was originally introduced by APX in February 2009, uptake of it was small. And it was not then traded after September 2009, it was not considered for inclusion in previous MIDS reviews. However, since N2EX went live and reintroduced the Day Ahead Auction to the wholesale market, the volume traded on this product on both exchanges has increased significantly, accounting for 43.6% of the volume traded on the N2EX exchange and 22% of that traded on APX since 5 April 2011.

There are slight differences in the Day Ahead Auction products offered by the APX and N2EX exchanges. The APX auction is traded 7 days a week, with the Trades for the following day being matched at 10:50am every morning. The N2EX Auction is for all wholesale energy, but is only traded on Working Days, with the Auctions for Sundays and Mondays being carried out on the Friday. The trades are then matched at 9:30am on these days.

The Day-Ahead nature of the Auctions means the current timeband weightings will result in Product A Trades being excluded from the calculation of Market Index Data for the majority of Settlement Periods because, as Graph 6 shows, only very small volumes are traded before timeband 7. The difference between the ways the products are traded across the exchanges means that there will be differences in the way that the product is included:

- APX is traded 12 to 36 hours ahead of Gate Closure. This means it would be missing from the calculations for Settlement Periods 19 to 46 each day.

- N2EX is traded 13 hours to 3 or 4 days ahead of gate closure. This means that it would only be included in the calculations for Settlement Periods 1 to 14 on Tuesdays to Saturdays, and Settlement Periods 47 and 48 on Tuesdays to Fridays (not including weeks where there are public holidays).

The way the different auction products would be included in the Market Index Data calculation during a typical week is demonstrated in Diagram 2 below.

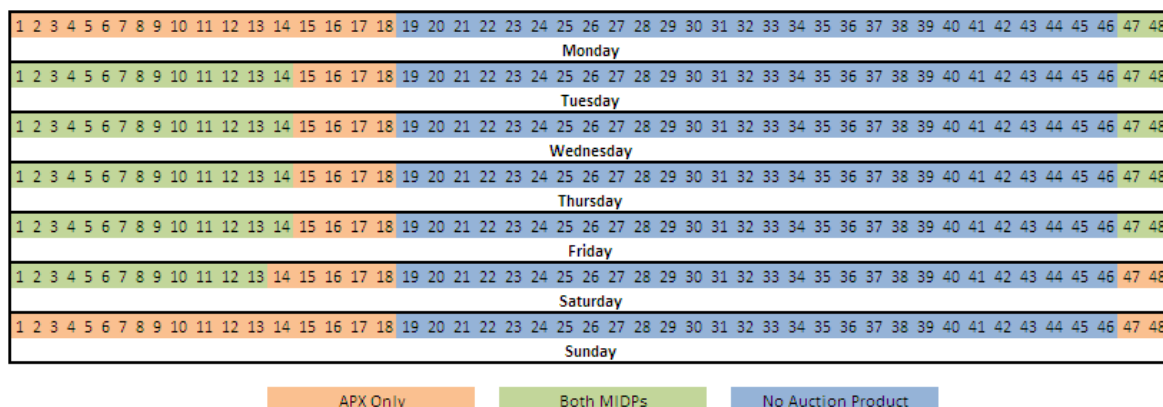
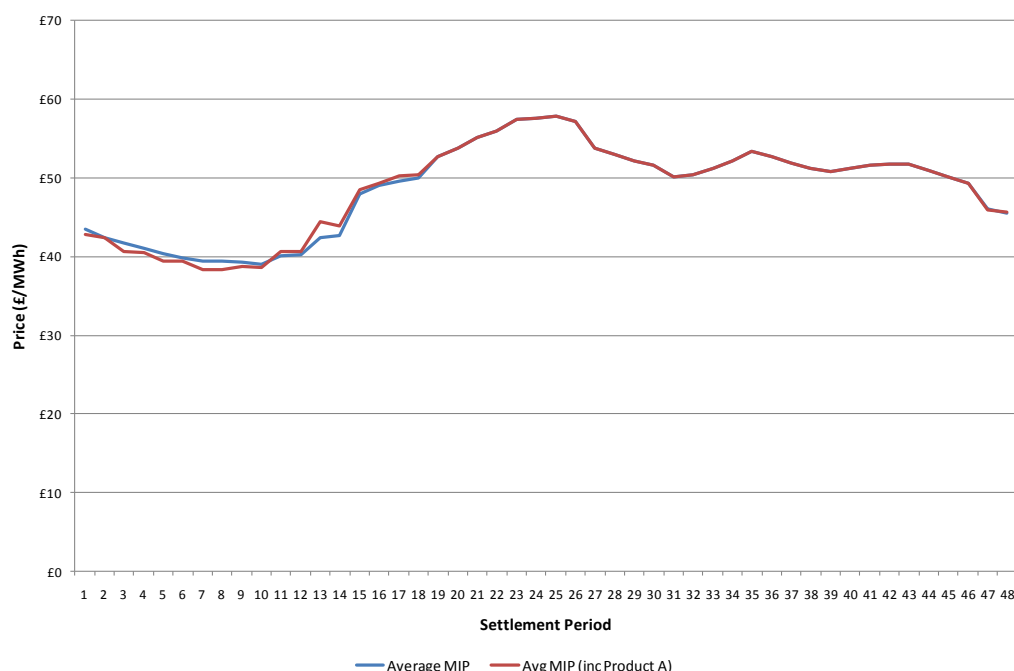


Diagram 2: Auction Product inclusion by Settlement Period

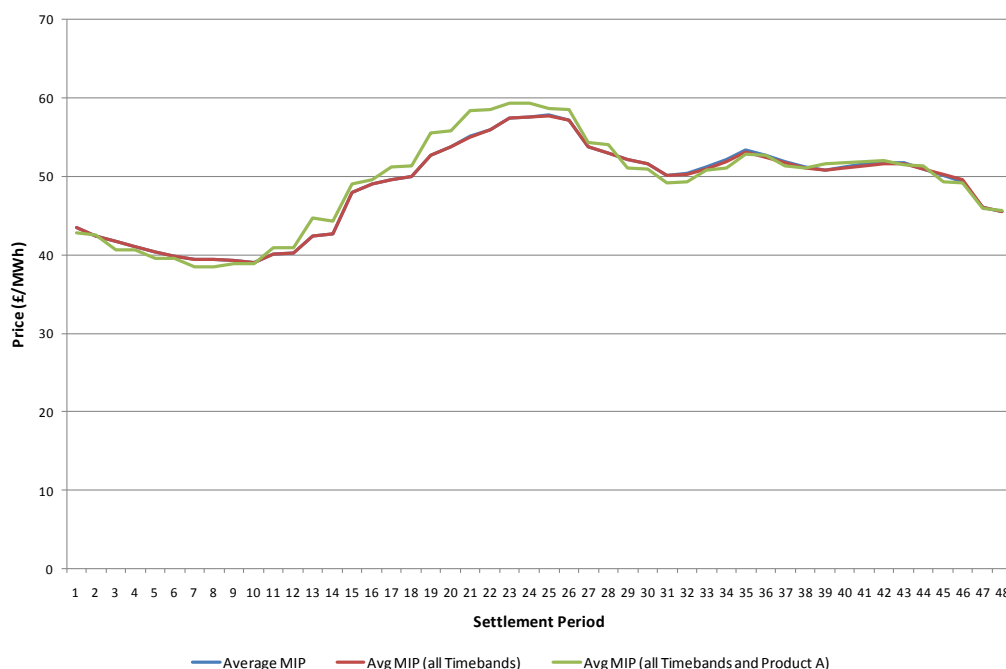
Given this inconsistency in the inclusion of the product, it may be viewed as less suitable for inclusion in the weightings.

The impact that including the Auction Product for the weighted timebands would have on the average MIP is provided in Graph 8 below.



Graph 8: Average Market Index Price including Product A

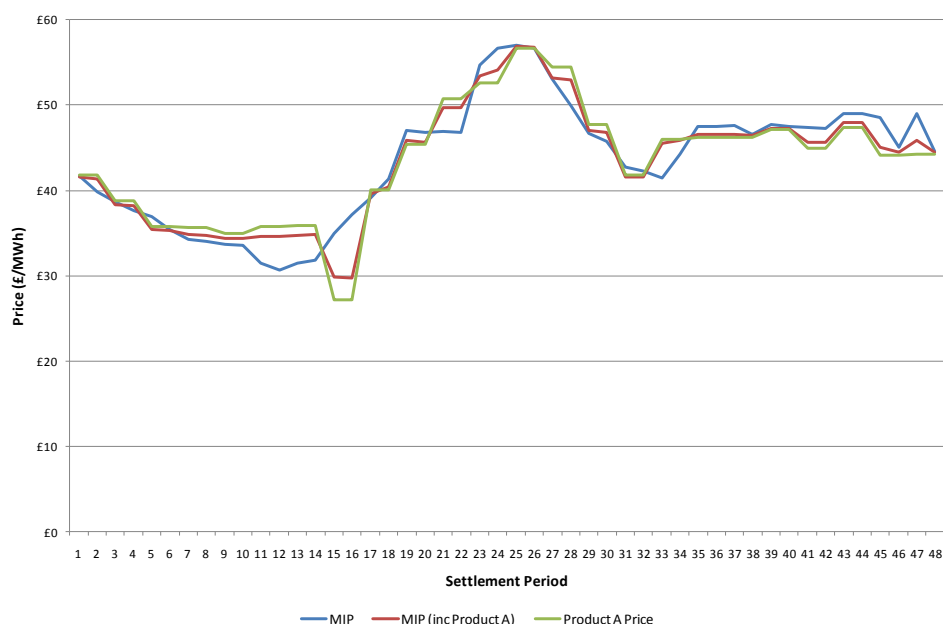
If the timeband weightings were to be adjusted to include 9 to 12, this would mean that the Auction Product would be used for all Settlement Dates and Settlement Periods. This is demonstrated in Chart 8a.



Graph 8a: Average Market Index Price including Product A for all timebands.

However, as this would mean that trades will be included that are made several days before Gate Closure, this could be viewed to be in contradiction to principle (f) of the MIDS. Conversely, if timebands 7 and 8 were removed from the weightings, the Auction Product would have little impact on the calculation, as only 3% of the total volume in timebands 1 to 6 is on the Auction product.

Due to the size of the volumes being traded on the Day ahead Auction product, including it would bring the MIP much closer in line with the price of the Auction Product for that Settlement Period, reducing the impact of other products traded closer to Gate Closure, and also resulting in prices that are very similar in consecutive Settlement Periods. Graph 8c demonstrates this for an individual Settlement Day if all timebands are included.



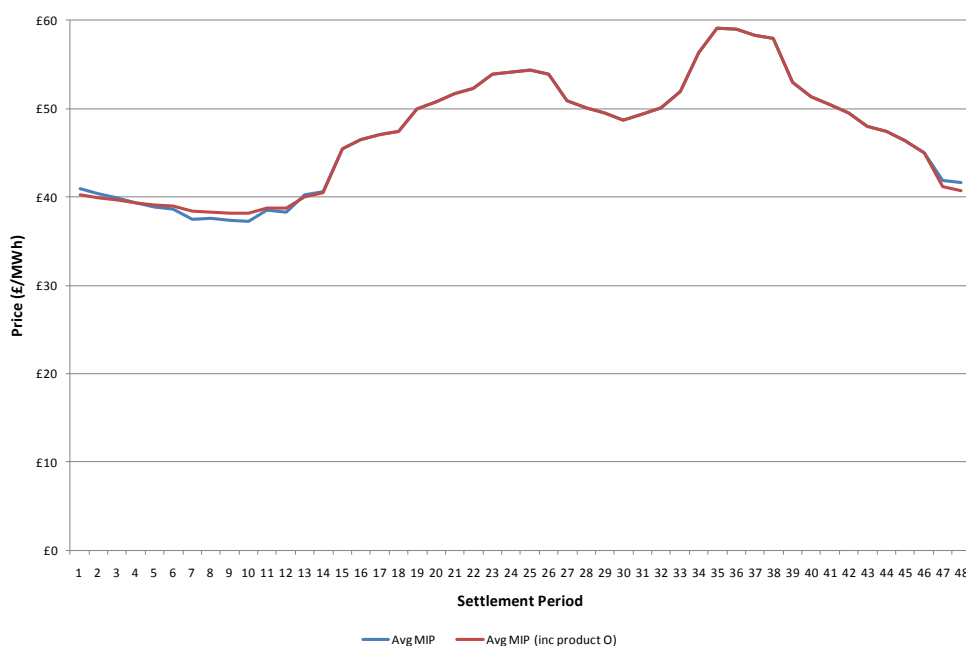
Graph 8c: Market Index Price compared to Auction Price for one Settlement Day

Overnight Product

In previous reviews, we have discussed the Overnight Product, an 8 hour long product that is traded for Settlement Periods 47 to 14 the following day. Longer duration products such as this have the same price across all the Settlement Periods for which they are traded, and including them in the calculation of Market Index Data can have a flattening effect on the Market Index Price. Principle (g) of the MIDS allows weightings to be set to prevent such an effect.

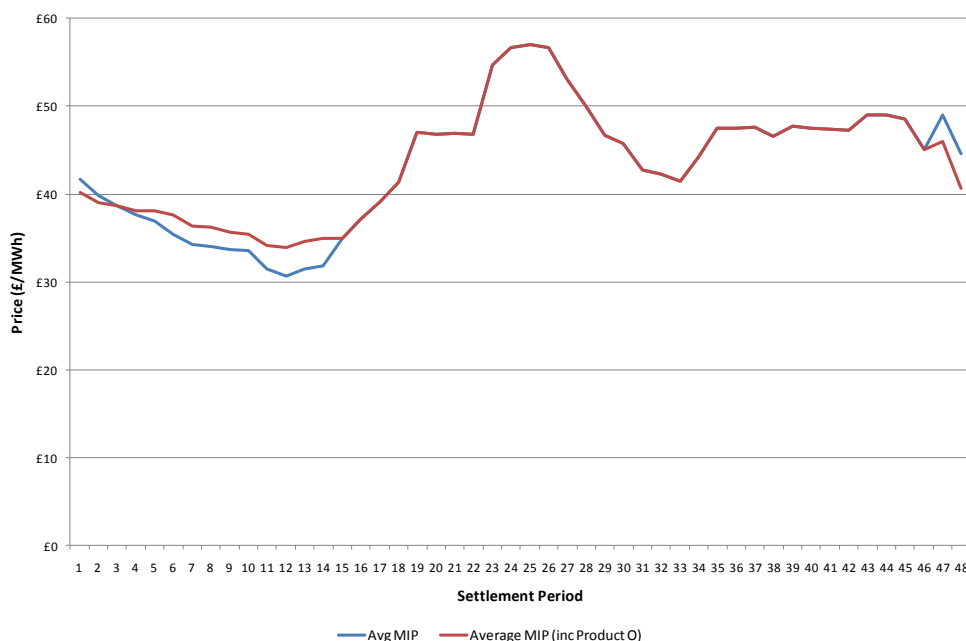
As the product O has the same price over 16 Settlement Periods, it has demonstrated this flattening effect on the prices when we have carried out the analysis previously, and it has been discounted from inclusion in the weightings as a result.

The impact that including product O would have had on the calculation of the average Market Index Price between 1 August 2010 and 31 July 2011 is demonstrated in Graph 9.



Graph 9: Average Market Index Price including Product O

Again, there the flattening effect during the periods that the product is being traded for is evident, which is contrary to principle **(g)**. This effect is more pronounced if we look at an individual Settlement Day.



Graph 9a: Market Index Price including Product O for one Settlement Day

Product O represents 30% of the volume Traded on the APX exchange in the overnight period, and 22% of that on N2EX. Including it would have meant no Settlement Periods were defaulted due to not reaching the ILT. However as there were only 11 defaulted in the first place, this does not suggest there is an issue with liquidity at present that would require additional products to be included.