

GB wholesale electricity market liquidity: summer 2011 assessment

Results and next steps

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Overview:

We have been monitoring liquidity in the GB power market since concerns were raised during the Energy Supply Probe in 2008. We have always maintained that we would prefer to see industry initiatives deliver the required improvements. However we are committed to take action in the event that insufficient or slow progress could be putting consumers at risk.

This is our fourth assessment. In March we published the findings of our Retail Market Review in which we observed static market structure in the supply market, and also that liquidity in the GB power market was continuing to stagnate according to several high-level indicators. As a result, we put forward two proposals to address liquidity: a Mandatory Auction and Mandatory Market Making obligations.

This assessment has found some evidence of a market which is evolving to meet participants' needs. However, the pace of change is slow, our metrics do not illustrate a step-change and independent participants continue to raise concerns.

In light of these results, we are continuing to develop our March proposals, and consider that they should align with what works well and with ongoing market change. We look forward to further constructive engagement as we work towards publishing our detailed proposals and an impact assessment at the end of the year.

Context

Ofgem's principal objective is to protect the interests of consumers, present and future, wherever appropriate by promoting effective competition. In accordance with this objective, we are concerned with making sure that liquidity in the GB power market is sufficient to underpin healthy supply and generation markets.

This assessment represents a further step in our ongoing liquidity project, in which we have been monitoring power market liquidity in Great Britain. We have always maintained that we would prefer to see industry initiatives deliver the required improvements. However, we are committed to take action in the event that insufficient or slow progress could be putting consumers at risk.

Associated documents

- The Retail Market Review – Findings and initial proposals, 21 March 2011, 34/11
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=1&refer=Markets/RetMkts/rmr>
- GB wholesale electricity market liquidity: summer 2010 assessment, 29 July 2010, 95/10
<http://www.ofgem.gov.uk/Markets/WhlMkts/CompandEff/Documents1/GB%20wholesale%20electricity%20market%20liquidity%20-%20summer%202010%20assessment.pdf>
- Liquidity Proposals for the GB wholesale electricity market, 22 February 2010, 22/10
<http://www.ofgem.gov.uk/Markets/WhlMkts/CompandEff/Documents1/Liquidity%20Proposals%20for%20the%20GB%20wholesale%20electricity%20market.pdf>
- Liquidity in the GB wholesale energy markets, 8 June 2009, 62/09
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=58&refer=Markets/WhlMkts/CompandEff>
- Energy Supply Probe - Initial Findings Report, 6 October 2008, 140/08
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=4&refer=Markets/RetMkts/ensuppro>

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Summary

Since undertaking the Energy Supply Probe¹ (the Probe) in 2008 we have been concerned about GB wholesale electricity market liquidity and supply market contestability. The Probe found that the market was working well in important respects, but that competition could be strengthened in some areas. One concern was that an illiquid wholesale market was potentially forming a barrier to entry in supply, and limiting the development of a healthy, competitive generation market.

On this basis, we have been monitoring the development of GB power market liquidity since 2009², and put forward initial intervention options in February 2010³ and a complete assessment framework in July 2010⁴. Over the course of the last year we gave the market time for industry-led initiatives to deliver necessary improvements. We have stated that we want to see a market which allows all market participants – and potential new entrants – to operate their businesses effectively. We think such a market would offer high volumes of trading in standard products, longer-term products, and other products which independent participants consider are required.

In March 2011 we published the findings of our Retail Market Review (the Review)⁵. This captured analysis of the retail supply market alongside high-level indicators of how liquidity in the wholesale power market was developing. We continued to observe a stagnant retail market structure and limited developments in power market liquidity.

We therefore decided to put forward more detailed intervention proposals for a Mandatory Auction (MA) and Mandatory Market Making obligations (MMM). We invited views on these proposals, and are currently considering the responses received. Additionally, we had previously committed to undertake a full assessment of power market liquidity in 2011. This document meets that commitment. It assesses the development of liquidity in the GB power market against a framework of eleven metrics.

Our latest assessment

This summer we have fully considered how liquidity has developed over the course of 2010. We find that while developments to improve certain aspects of liquidity are ongoing, these have not yet resulted in the step change necessary for us to conclude that intervention would not be in the best interests of consumers.

¹ Energy Supply Probe - Initial Findings Report, 6 October 2008, 140/08

² Liquidity in the GB wholesale energy markets, 8 June 2009, 62/09

³ Liquidity Proposals for the GB wholesale electricity market, 22 February 2010, 22/10

⁴ GB wholesale electricity market liquidity: summer 2010 assessment, 29 July 2010, 95/10

⁵ The Retail Market Review – Findings and initial proposals, 21 March 2011, 34/11

Key Findings

High volumes in standard products: *Limited improvement and some deterioration*

- Churn declined in the second half of 2010 and whilst there was some recovery in the first months of 2011, this was not sustained. Levels now are around two, and the forecast for 2011 is under four.
- Some narrowing of bid-offer spreads, but these remain wide for baseload at the far end of the curve, and for peak products.
- Increased trading on exchanges in GB.

Availability of longer dated products: *Limited improvement*

- Marginal increase in trading of baseload 13 months out and later. Decrease in trading for longer-term peak and off-peak products.
- Greater availability of financial derivatives, but trading is slow to take off.

Meeting independents' wholesale requirements: *Limited improvement and some deterioration*

- Evidence that the diversity of traded products has declined.
- Some evidence of increased numbers of counterparties for independent players, but overall qualitative feedback continues to raise concerns.

Next Steps

The position reached in March 2011 remains unchanged, and we are continuing to refine the design proposals put forward in the Review. This includes taking account of the responses we have received, and developing a full impact assessment. We expect to publish our detailed proposals and impact assessment at the end of the year.

1. Introduction

1.1. This document has two objectives:

- It provides a comprehensive follow-up to our July 2010 assessment, and considers how liquidity has developed over the course of 2010-2011.
- It completes the market update we produced as part of the Retail Market Review (the Review) in March 2011, and is therefore an input into any final decision to take forward any proposals for action.

Structure of this document

1.2. This document is aimed at updating the metrics outlined last summer to provide an updated assessment on GB wholesale power market liquidity:

- Chapter 2 sets out the updated assessment and considers metrics in the same three categories as our 2010 assessment: (i) high volumes in standard products; (ii) availability of longer dated products; and (iii) meeting independent suppliers' and others' wholesale requirements.
- Chapter 3 contains our conclusions. We highlight areas of improvement and of concern and set out our next steps.
- The Appendices include a copy of the questionnaire sent to independent market participants, and a reminder of the proposals for intervention put forward as part of the Review.

2. Assessment Summer 2011

Chapter Summary

This chapter provides an updated assessment of GB wholesale electricity market liquidity. There is some evidence of industry-led positive development. However our high level metrics show that in several key respects liquidity has declined over the course of 2010-11. As a result of this assessment, the position we reached in March is unchanged, and we continue to believe that action is necessary.

Introduction

2.1. In this chapter we update the assessment of GB wholesale market liquidity using the framework developed last summer and building on the high level assessment we presented in the Review. We also provide updated views on the state of liquidity. The data used for this assessment is correct up to the end of April 2011, unless otherwise stated.

2.2. As with our July 2010 assessment, we have used a combination of quantitative and qualitative analysis to assess liquidity levels. We used the same qualitative questionnaire as last year, asking respondents to update their views to assess whether the market developments better met their needs. A copy of the questionnaire can be found in appendix one. All responses have been treated as confidential.

2.3. Additionally, we have considered key market developments, and the impact that these have had on the market's performance. In reaching a judgement on the progress made on liquidity compared to last year, no absolute targets have been set. Instead we favour looking at the trends over time and exploring whether market developments appear likely to deliver a market which meets the needs of participants and potential new entrants.

High Volumes in standard products

Overview

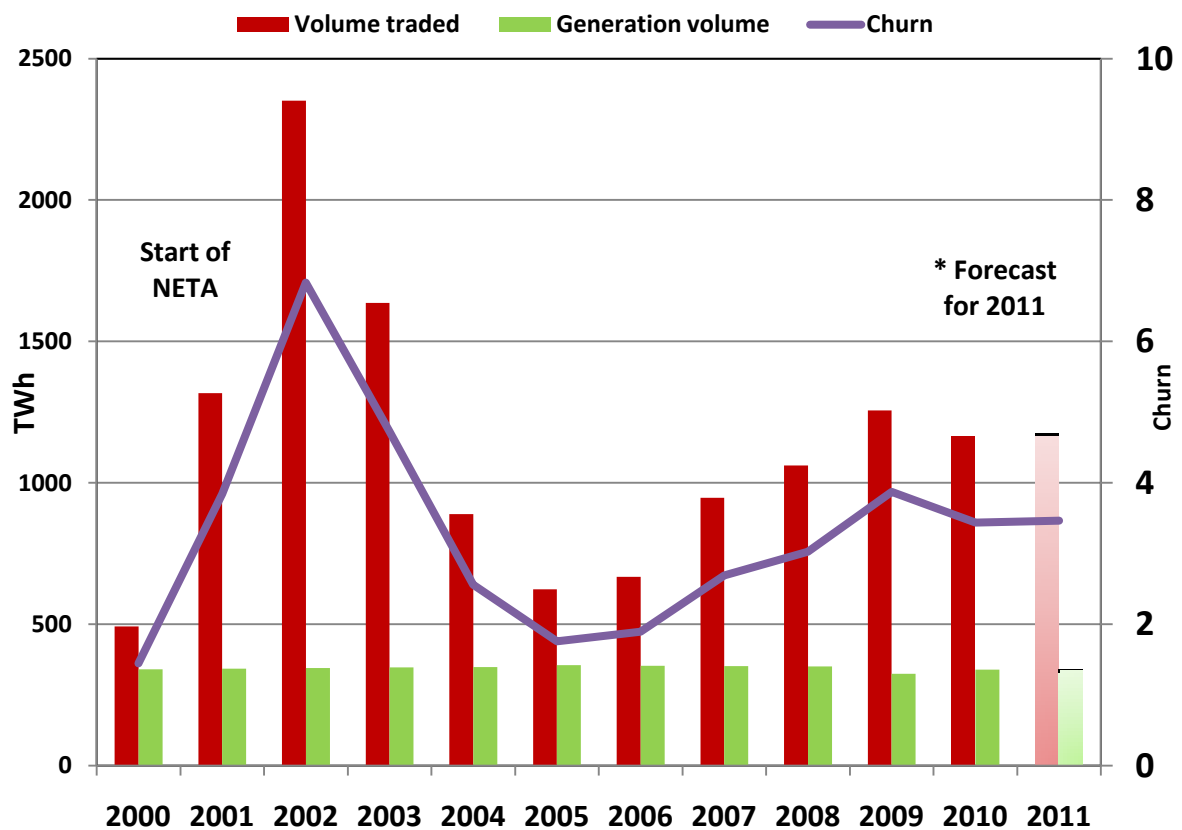
2.3 Last summer's assessment stated that, in terms of volumes in standard products, there was a mixed performance, but with a positive bias. It was noted that there had been an improvement in overall levels of churn and that it looked to be on an upwards trajectory. However, GB churn levels were found to well below those of the more liquid wholesale electricity markets of Nordpool and in Germany. There was also evidence that bid-offer spreads had been narrowing for products at the prompt stage of delivery, but further along the curve bid-offer spreads appeared to

be widening. Last year’s analysis suggested that there had been limited growth in exchanged based trading.

Yearly aggregate churn

2.4. Aggregate churn is defined as the number of times a unit of generation is traded. Liquid market are often characterised as having physical volumes traded many times over. The wholesale electricity markets of Germany and Nordpool have high levels of churn, in which each unit of electricity generated is traded seven and ten times respectively.

Figure 1: GB trade volume, generation output and annual churn



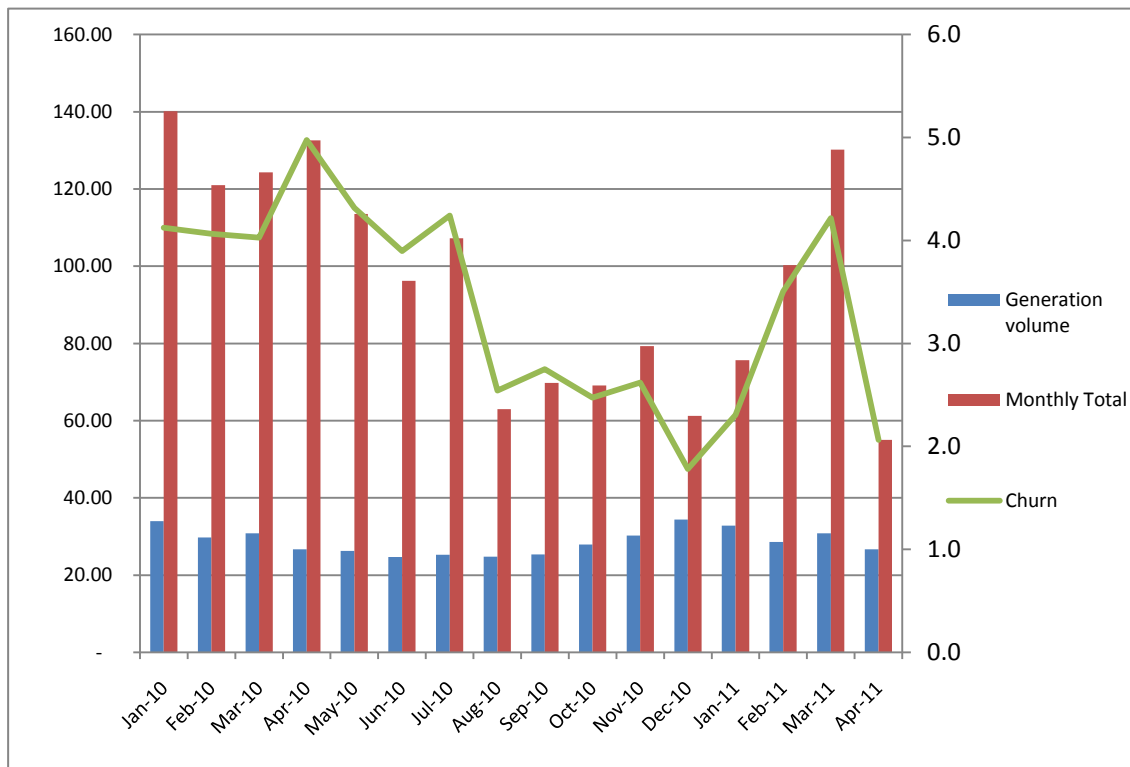
2.5. Figure 1 above shows total annual volume of electricity traded, generation volume consumed in GB and the churn ratio since 2000. The figure includes a forecast number for 2011 which is a linear extrapolation of traded volumes based on trading up to May 2011.

2.6. Our assessment last year contained a forecast for 2010 which suggested that churn was on an upwards trajectory and could be approaching a ratio of five by the end of 2010. However, as illustrated in the figure above, this upwards trajectory

was not maintained and that the actual ratio for churn in 2010 was around 3.4. The forecast figure for 2011 suggests churn could remain static.

2.7. Figure 2 provides greater depth on the most recent churn levels by showing monthly churn levels from the beginning of 2010 to the end of May 2011. The figure illustrates that churn levels dropped off dramatically over the course of 2010. In the second half of 2010 churn levels were well below three and by December they had dropped below two. After a brief increase in February and March this year, churn levels appear to have fallen again, suggesting the upturn seen at the beginning of the year will not be sustained.

Figure 2: GB Monthly trade volume, generation output and churn



2.8. The GB wholesale power market was not the only energy market to experience a drop in churn levels in 2010. Other power markets across Europe also experienced drops in wholesale power churn levels as trading activity was more muted than in previous years. Further, the GB gas market witnessed a similar fall in liquidity as the GB power market in 2010; the churn level of the NBP dropped from fourteen to twelve year on year in 2010. This suggests that GB power market liquidity in 2010 may have been affected by wider factors affecting trading in energy markets.

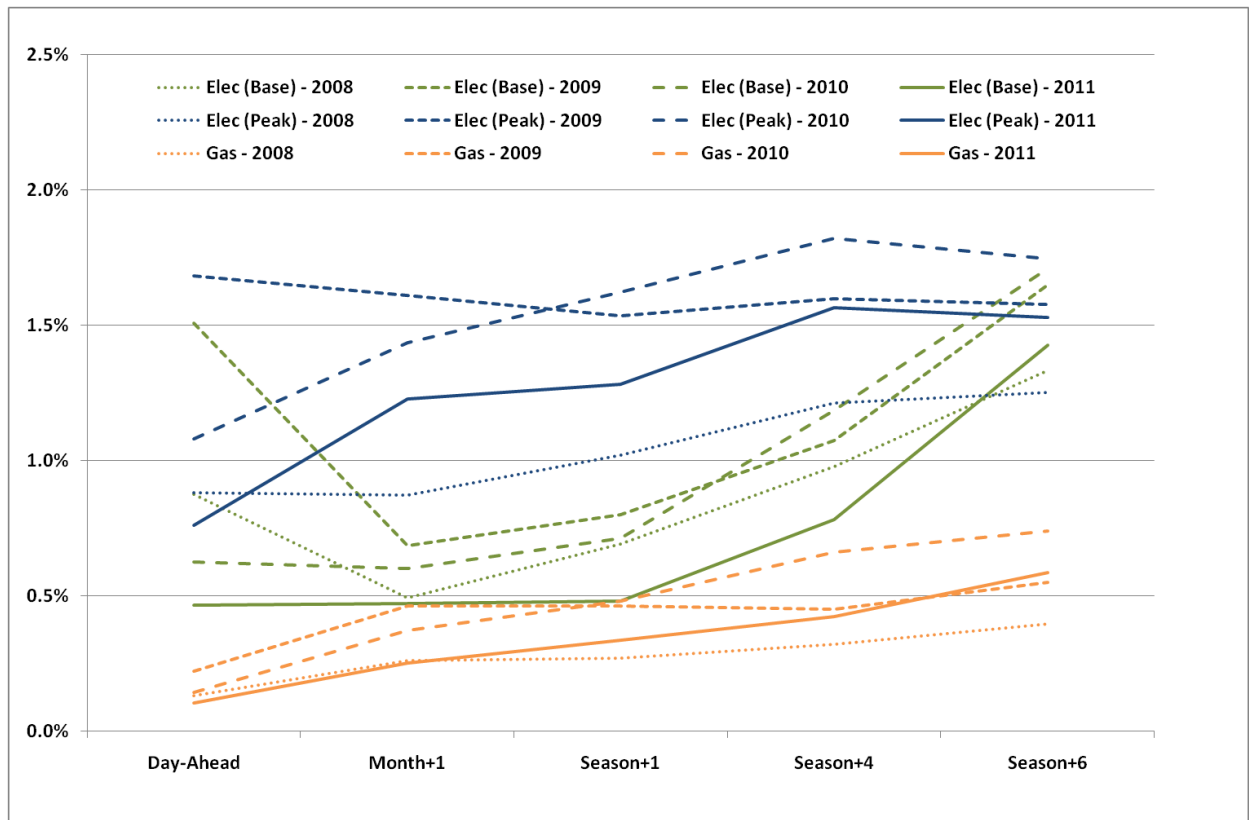
2.9. However it remains the case that in GB, the churn ratio is no longer on an upwards trajectory and is forecast to flatten at around 3.4 over the course of 2011.

Bid-offer spreads

2.10. A tight spread between the bid price (the price at which buyers are prepared to buy) and the offer price (the price which sellers are willing to sell) is a good indication of a liquid market as it indicates that arbitrage opportunities have been exhausted by the presence of numerous players in the market.

2.11. Last summer’s assessment noted spreads on near term products (day ahead and month ahead) were forecast to narrow in 2010 compared to levels in the previous two years. However, we noted that the spread further along the curve appeared to have widened. We also highlighted that spreads in the GB power sectors were significantly wider than the spreads for GB gas trading, highlighting the greater depth in GB gas market liquidity compared to GB power.

Figure 3: Average bid-offer spreads in the GB gas and electricity markets



2.12. Our analysis shows that, so far in 2011, there has been a further narrowing of spreads for near term, i.e. day ahead to month ahead, baseload electricity products when compared to the preceding three years. The spread for baseload products is below 0.5% and closer to the levels seen in gas. However, further out on the curve, from a season ahead, the spread, while having narrowed, has remained wide and approaches 1.5% at 18 months out. This suggests that for baseload products there has been some improvement in the near term, but that further along the curve liquidity is still weak.

2.13. For peak products, the spread has again narrowed since 2010 but remains wide for products up to a month out and widens further along the curve. Responses to our questionnaire also highlighted that the availability of tight bid-offer spreads outside the front months (up to around six months out) remains a concern.

2.14. Our updated bid-offer spread analysis does show evidence of improvement. However, the analysis also suggests that, for peak products and for all products further along the curve, liquidity remains thin, especially when compared to the GB gas market.

Use of platforms which promote price transparency

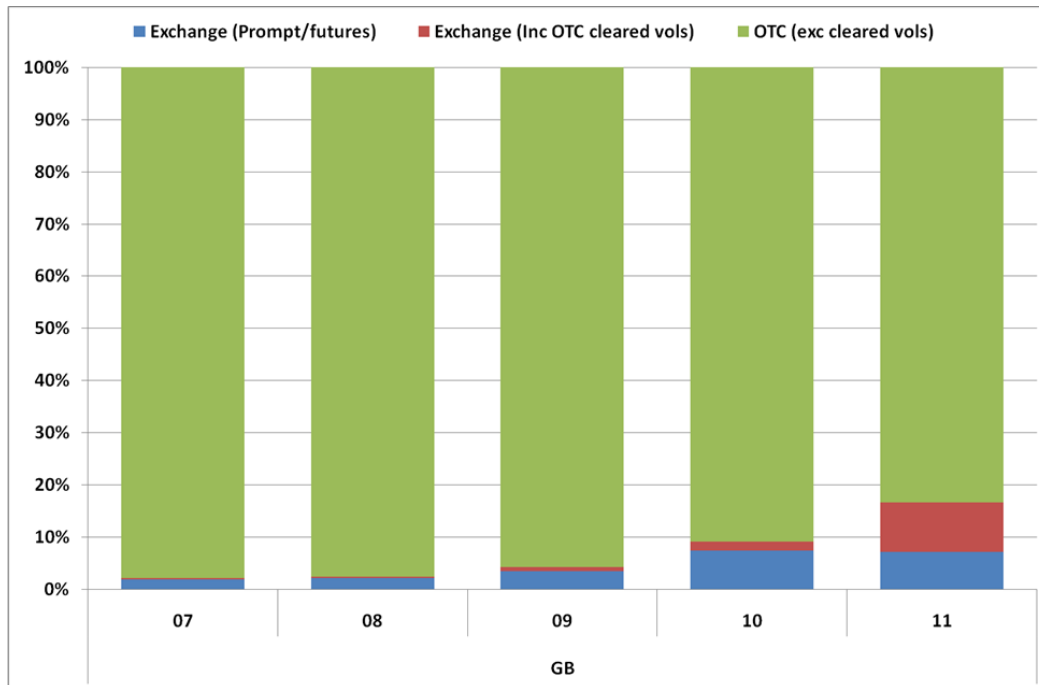
2.15. Energy trading in GB can take place on exchanges, Over the Counter (OTC) (via electronic platforms or over the phone), and bilaterally between two counterparties. Trading OTC or bilaterally requires that a party has trading agreements in place with its trading partners (GTMA's). By contrast, trading on an exchange requires that a party needs to have met the requirements of the exchange to become a member – but these requirements are the same for all parties.

2.16. Power trading in GB has been dominated by OTC trading since market liberalisation. This is in marked contrast to other European countries in which there is often more exchange-based trading. Exchange-based trading has been cited as important reason why other European markets, such as in Nordpool, are more liquid than in GB. It has been argued that exchanges offer transparency and this generates more robust reference prices that are more readily trusted by market participants. Additionally, Ofgem recognises the possible benefit to new market participants of being able to trade without multiple GTMA's in place.

2.17. In Figure 4 we update our analysis of the proportion of trading that takes place on exchanges or OTC. The blue and red bars show exchange traded volumes, with the red bars showing OTC volumes that are cleared through exchanges (that is volumes traded on OTC platforms but given up for clearing on exchanges). The green bars show volumes traded solely on OTC platforms. All volumes are expressed as a proportion of the total traded volume.

2.18. Our analysis shows that the proportion of trading in GB that takes place on exchanges has increased markedly since 2009. Nearly 20% of trading has taken place on exchanges this year. We recognise that this metric appears to be on an upward trajectory.

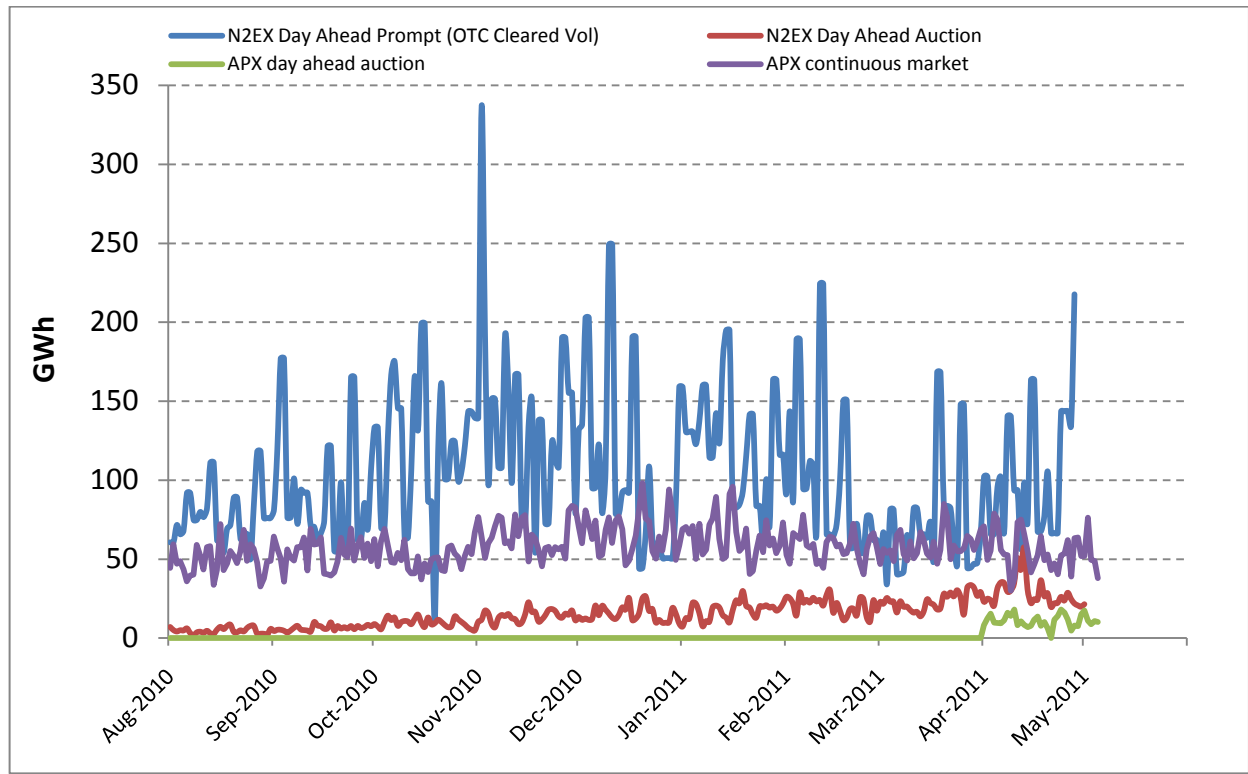
Figure 4: Proportion of volume trades on exchanges and OTC, 2007-2011



Market developments

2.19. The N2EX electricity exchange was launched in 2010, originally offering a day-ahead prompt and a day-ahead auction. Over the course of 2010 volumes have increased, particularly following a drive to increase volumes in May 2011. For the reasons of market transparency and product access outlined above, Ofgem recognises the benefits of exchange-based trading.

2.20. N2EX has also continued to develop its product offering. The day-ahead auction now provides the reference price for N2EX’s cash-settled power futures contract, which was launched on 31 January 2011. And on 5 April 2011, N2EX launched a continuous market for ½ hour contracts, 1 hour contracts, 2 hour blocks and 4 hour blocks, Overnight, Block 3+4, Peak, Off-peak, Extended Peak and Base. At the time of writing, volumes were limited in both the futures and continuous products. However, two parties have signed up as market makers on the futures contract; EDF Trading Ltd. and RWE Supply & Trading GmbH. We discuss this further below, as we consider the availability of financial derivatives.

Figure 5: Trading on N2EX and APX 2010-May 2011

2.21. On the 1 April 2011 the Britned power cable between the Netherlands and GB became commercially operational meaning that up to 1 GW of power could flow between the two countries. This cable also supports a market coupling solution with the Netherlands. This utilises the day-ahead auction on the APX exchange. This auction had been dormant since September 2009. However, since the opening of commercial operations with Britned, APX has recorded record volumes of trading activity, reaching 18 GWh on 30 April 2011. The volumes of trade on APX are captured in figure 5. Whilst the figures are small relative to the overall size of the GB market, it does represent some progress in transparent trading.

2.22. Overall, our analysis suggests that there has been a small, but sustained move towards more power trading taking place on exchanges in GB. There have been some positive developments from the exchanges that serve market players and both N2EX and APX have witnessed growth over the year.

Availability of longer dated products

Overview

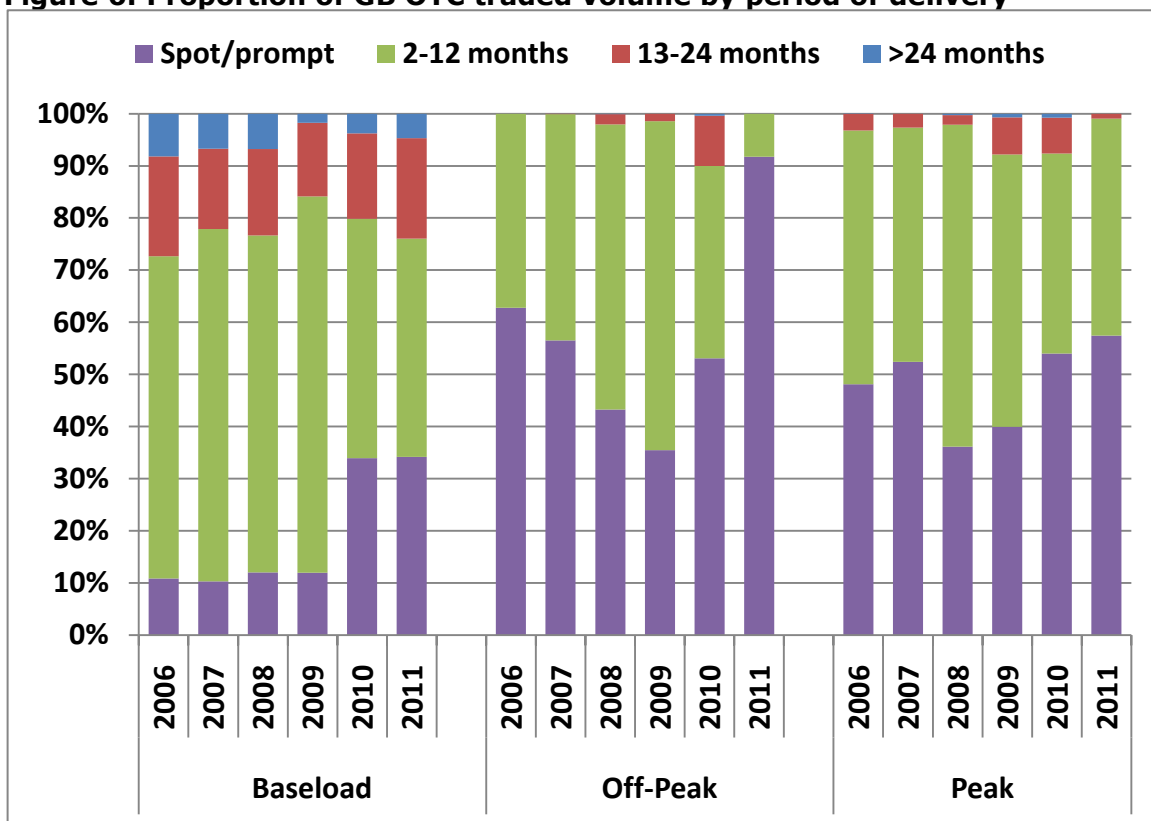
2.23. A consistent theme in our analysis of GB wholesale power market liquidity has been the relative lack of trading in products for delivery beyond the prompt stage, ie produces more than one month ahead. Last year our assessment found that GB trading was dominated by trading in the near-term and that there was very limited

amount of trading in products further out along the curve, and in financial derivatives. These products are important to allow independent market participants to adequately manage risk. In 2010, our view was that the market performance on the availability of longer dated products was mixed, but with a negative bias.

Volume of trade along the forward curve

2.24. The ability to hedge risk by selling power forward is a key attribute of a mature and well functioning energy market; it allows energy companies to hedge their risks and provides smoother prices for consumers. Therefore, we consider the volume of trading along the forward curve to be an important element of liquidity.

Figure 6: Proportion of GB OTC traded volume by period of delivery



2.25. Figure 6 shows the percentage of volume traded, across all electricity OTC baseload, off-peak and peak products, broken down by period of delivery. This is intended to give an indication over time of liquidity in the forward market.

2.26. Last year we noted that since 2006 the share of trading on the forward curve had steadily declined for baseload products, suggesting that market participants were not hedging that much beyond a year out. However, our analysis suggested that there had been an increase in the share of trading for peak and off peak products for delivery longer than a year out. Our updated analysis suggests that baseload products in 2011 continued to be dominated by the prompt, albeit that there has been a small improvement in the share of trading from 13 months out.

However, whereas last year we saw an increasing share of trading along the curve in peak and off peak products, the data so far in 2011 suggests that this share has fallen significantly.

2.27. The majority of respondents to our questionnaire have stated that they have not seen any improvements in liquidity for products further along the curve. A message emerging from these responses was that liquidity along the curve remains a concern.

2.28. Concerns over liquidity further along the curve support the analysis on bid-offer spreads earlier. The wide spreads for products dated beyond a month ahead indicated low levels of trading for these products, and our further analysis supports this finding.

Availability of financial derivatives

2.29. Last year, in our assessment, we noted that GB wholesale trading was dominated by physically settled OTC forward transactions. We noted some limited exchanged based financial trading with limited volumes (eg on the ICE) and financially settled trades concentrated on the prompt (on APX). However financially settled trading in GB was much lower than in the more liquid markets, such as in Nordpool. We argued that the presence of financial derivatives could make hedging easier for market participants. Firstly, these products do not require that the participant takes a physical market position. Secondly, financial products may attract financial players – who may encourage market innovation and provide services to independents. We were encouraged last summer by the prospect of financial products being developed on the N2EX platform.

2.30. As above, N2EX launched its range of UK power futures products on 31 January 2011. The first futures trade took place on the 1 February for a March baseload contract. However, following this trade volumes have failed to take off. On 13 April EDF trading Ltd and RWE Supply & Trading GmbH were announced as market makers for futures products. However, the extent of trading in futures products on the platform remains limited.

2.31. The participation on the N2EX has increased substantially from when we undertook last summer's assessment. The number of total members on the prompt market has increased from 16 to 30, with the number of banks increasing from 4 to 6. However, the number of members for futures trading is currently low, with 5 members, and only limited participation from banks.

2.32. So far in 2011, market participants have worked to develop futures trading in the UK. Whilst trading volumes have yet to take off, we view the developments on N2EX and APX positively. However, we cannot be certain that just the availability of these products is sufficient to meet participants', and potential new entrants', needs.

Meeting independent market participants' wholesale requirements

Overview

2.33. Our assessment last year included a set of metrics that aimed to test whether the market was meeting the needs of independent market participants. Our analysis suggested that whilst there was a wide range of products available, trade was concentrated in a few products, with clip sizes generally higher than in other countries. There was a general message from independent market participants that the market did not meet their hedging requirements. Overall our assessment suggested that in this respect the market's performance was mixed, but with a negative bias.

Diversity of products

2.34. A concern we highlighted in our previous liquidity assessment was the lack of a suitable range of products in the GB wholesale market. Markets which contain a wide range of products generally make it easier for market participants to hedge their customer demand and adjust their hedged position, reducing the overall cost of hedging.

2.35. In the analysis below we update our assessment of the number of different combinations of products traded in each calendar year on the GB OTC wholesale market. As with last year, it should be noted that the analysis does not necessarily reflect the availability of products offered, but rather those which were successfully traded.

2.36. Table 1 shows the number of products traded from 2008 to 2011 (to the end of May). The Herfindahl-Hirschman Index (HHI), which is commonly used in competition analysis, is utilised to assess the extent to which trading (volumes traded for each product) is concentrated in a narrow range of products. The HHI index ranges from 0-10,000, with higher scores relating to increasing levels of concentration.

2.37. Our latest analysis shows that in 2010 the number of products for baseload, peak and off products increased from the previous year. However, so far in 2011 the number of baseload, peak and off peak products has decreased. Further, trading has become significantly more concentrated, with only nine baseload products accounting for 94% of trading activity. This suggests that GB wholesale power products have become less diverse compared to the preceding three years.

Table 1: Product availability and concentration

	2008		2009		2010		2011	
Total no of products traded	70		80		97		75	
Of which:	No of products	% volume	No of products	% volume	No of products	% volume	No of products	% volume
Baseload	6	91%	6	89%	11	88%	9	94%
Off-Peak	32	4%	40	5%	42	5%	36	2%
Peak	32	5%	34	5%	44	7%	30	4%
HHI	4000		3727		3674		5599	

Source: Broker data, Ofgem calculations.

Number of counterparties active in the market providing hedging offers to small/independent suppliers / participation on trading places

2.38. Last year we noted that independent suppliers traded with a narrower range of counterparties compared to independent generators, with the suppliers trading with up to six parties and generators trading with between seven and thirty parties. We also noted that several independent market participants had suggested that there had been an increase in the counterparties active in the market.

2.39. We have observed little change since 2010. However, responses from several market participants suggest that there has been a small increase in the number of counterparties active in the market. We also note that since 2010 there have been efforts by some large vertically integrated players to improve their service offering to smaller market participants. For example, ScottishPower and EDF have both published their commitments⁶. We welcome such initiatives, but note that feedback still highlights concerns.

2.40. Our evidence continues to illustrate that the majority of independent suppliers and large energy users are not members of any electricity exchange. High credit and collateral costs have been given as the predominant reason for this.

⁶ ScottishPower's Six commitments:

<http://www.scottishpower.com/uploads/ScottishPowerSixCommitments.pdf>

EDF Energy's commitments:

<http://www.edfenergy.com/about-us/energy-generation/PDF-Documents/liquiditycommitMarch11.pdf>

Availability of suitable products with small clip sizes

Table 2: Minimum Clip size (MW) for a variety of GB products

	Baseload			
	>24 months	13-24 months	2-12 months	Spot/prompt
2007	10 - (0.5%)	5 - (1.7%)	5 - (1.6%)	1 - (0.003%)
2008	5 - (0.9%)	5 - (1.5%)	5 - (1.2%)	1 - (0.004%)
2009	5 - (2.2%)	5 - (1.1%)	5 - (0.9%)	1 - (0.003%)
2010	5 - (2.0%)	2 - (0.006%)	1 - (0.001%)	1 - (0.002%)
2011	5 - (1.6%)	5 - (1%)	5 - (1%)	5 - (0.1)% ⁷

	Peak			
	>24 months	13-24 months	2-12 months	Spot/prompt
2007		10 - (21%)	5 - (0.6%)	1 - (0.004%)
2008	10 - (75%)	10 - (17%)	5 - (0.4%)	1 - (0.003%)
2009	10 - (18%)	10 - (34%)	5 - (0.6%)	1 - (0.003%)
2010	10 - (68%)	10 - (1.6%)	5 - (0.4%)	1 - (0.002%)
2011	0 - (0%) ⁸	0 - (0%)	10 - (40.9%) ⁹	1 - (0.004%)

Source: OTC traded Volumes. Note: products with less than five trades have been excluded.

2.41. Previously, smaller market participants have been concerned about limited availability of products with small clip sizes. Table 2 shows our updated analysis of the minimum trade (clip) size, for all GB baseload and peak contracts, on an annual basis, for a number of delivery periods. The table also shows the proportion of volume traded at these clip sizes (figures in brackets). The data suggests that so far in 2011 there has been limited trading in small clip sizes for baseload products under 24 months out. We have also seen limited trading in small clip sizes for peak products, especially beyond 13 months. It is too early in 2011 to claim that this metric has deteriorated over the course of the year, but there is no notable evidence of improvements. We are concerned that low levels of trading in small clip sizes could have an impact on the ability of smaller players to meet their wholesale power requirements.

⁷ For the 2011 data we have, there are under five trades of <5MW clip size for spot/prompt baseload products

⁸ For the 2011 data we have, there are under five trades for peak products 13-24 mths and >24mths out

⁹ For the 2011 data we have, there are under five trades for peak products 2-12 mths out in 5MW clip size. However if we were to consider these trades, they would account for approximately 0.7% of trading in these products.

Feedback from a sample of independent suppliers, potential entrants, large energy users, and independent generators

2.42. Last year we sent out a questionnaire to a sample of market participants including small suppliers, independent generators and large energy users to gather qualitative feedback on how the market meets the needs of independent players. Feedback expressed a range of views. However two common concerns were the lack of forward market liquidity and the credit and collateral requirements on exchanges, which were viewed as being overly onerous. This year, we asked the same participants to consider whether their views on the market had changed.

2.43. The responses continue to indicate that most independent suppliers source their wholesale power through another party or through the Big 6 suppliers. Independent generators predominantly access wholesale market via OTC platforms and use exchanges for short term products.

2.44. A few respondents suggested that they were happy with the wholesale market offerings. However the majority suggest that the trading conditions did not adequately meet their requirements. Concern is widespread regarding perceived low levels of liquidity at the far end of the curve, and for non-baseload products. Some independent participants also express concerns with the cost and collateral requirements associated with exchange-based trading.

Table 3: Summary of findings

Metrics		Performance
High volumes in standard products		
1	Aggregate churn: volumes traded across all products / GB physical consumption	The churn ratio tailed off significantly in the second half of 2010. Whilst there was some recovery in early 2011, this was not sustained and levels are now around two, with the 2011 forecast under four.
2	Bid-offer spreads for range of standard products	Improvement in the bid-offer spread for baseload products, spread at the near end of the curve now compatible with gas trading at the NBP. Also some evidence of improvement for non-baseload products but spreads remain wide.
3	Use of platforms which promote price transparency	Increase in exchanged based trading in GB. Slow and steady increase on volumes on the N2EX. Growth of the APX day-ahead auction following the commencement of commercial operations at Britned.
The availability of key longer dated products and/or financial derivatives		
4	Volume of trade along the forward curve	Marginal increase in trading of baseload 13 months out and later. Decrease in trading for longer-term peak and off-peak products.
5	Availability of financial derivatives	The availability of financial derivatives has increased with N2EX offering financial products from the end of January 2011. Two market makers are in place, but trading remains negligible.
6	Participation by banks / other financial institutions on trading platforms	There has been a small increase in participation by banks and financial institutions on trading platforms in GB.
Meeting independent suppliers' and others' wholesale requirements		
7	Diversity of products	There has been a narrowing of product diversity in 2011.
8	Number of counterparties active in the market providing hedging offers to small / independent suppliers	Some smaller and independent players have suggested a small increase in the number of counterparties willing to trade.
9	Participation by small / independent market participants on trading places	No real increase in the number of small independent participants on trading places.
10	Availability of suitable products with small clip sizes	Low levels of trading in small clip sizes for baseload and peak products.
11	Feedback from a sample of small / independent suppliers, potential entrants, large energy users, and independent generators	Concern has been expressed over liquidity at the far end of the curve as well as for non-baseload products across the curve.

3. Conclusions and next steps

Chapter Summary

We recognise that the GB power market continues to develop. However, in several key respects our metrics have not shown sufficient improvement for us to conclude that intervention is no longer necessary. We consider it necessary that the GB wholesale power market is fully able to meet the needs of independent participants and therefore underpin healthy, competitive generation and supply markets which deliver value to consumers.

We will continue to work with stakeholders to develop our proposals for a Mandatory Auction (MA) and Mandatory Market Making obligations (MMM). We expect to publish a detailed proposal regarding how these are taken forward at the end of the year, and aim for any intervention to align with what currently works well in the market.

Conclusions

Ongoing concerns

3.1. In March, we stated that we wanted to see a wholesale market that delivers more effectively for all market participants, including potential new entrants. Improved product availability, greater depth along the curve, shaped and sized products to meet varying market needs and clearer and more transparent market rules were all outlined as potentially welcome developments.

3.2. The assessment above indicates that the market is not delivering effectively in several key respects. Our indicators suggest that, in particular, there is scope for improvement in product availability and trading along the curve. It is of some concern that the diversity of products traded appears to have declined since 2010, and levels of trading in small clip sizes are low. Further, the qualitative feedback we have received continues to highlight problems. Both our analysis of bid-offer spreads and feedback from independent participants indicates a lack of depth in trading for products along the curve. In particular for peak products, the spread remains wide from a month out. This is supported by our analysis of volumes traded in products for different periods of delivery. In 2011, the share of trading in peak and off peak products along the curve has fallen significantly, reversing the positive trend we observed last summer.

3.3. Overall, we also note that churn levels have not met our forecasts for 2011, and that churn is currently below three times the volume generated in the market. This negative trend reduces confidence that the market will deliver in the absence of intervention.

3.4. These indicators suggest that independent market participants may find it increasingly difficult to meet their hedging and shaping requirements and therefore

operate effectively. This puts consumers at risk from potentially weakened competition in generation and supply.

Areas of improvement

3.5. We have always highlighted the potential for industry-led developments to address our concerns, and have allowed time for these to deliver. In this assessment we have observed several positive changes. In particular, we note the ongoing efforts made by exchanges to develop their product ranges (eg the launch of futures products on N2EX), build participation and encourage progress towards a more liquid market (eg the launch of market coupling on Britned).

3.6. Our metrics also illustrate a slight positive trend towards an increasing proportion of trading taking place on exchanges. We recognise the potential benefits that this brings – in particular in terms of greater transparency and consistent trading rules for all participants. However we also note independents' concerns regarding the cost of using exchanges and that the success of these developments is largely uncertain at this stage. For example, trading in financial products remains minimal.

3.7. We continue to welcome ongoing innovation in the market and consider that any interventions which align with what currently works well are likely to be in the best interests of consumers.

Next steps

3.8. We are developing the proposed interventions set out in March 2011. These are outlined in Appendix 2. We are now:

- Taking account of responses to consultation received on 1 June 2011
- Producing a full impact assessment
- Preparing for ongoing constructive engagement regarding key design questions. We will consider whether a roundtable event will be helpful in this respect.

3.9. This work will be reflected in a detailed proposal we expect to publish at the end of the year. This will allow any required implementation plan to commence as soon as possible in 2012, with the expectation that ongoing support will enable significant progress by 2013.

Appendices

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Appendix 1 - Questionnaire

Part One – General details

1. Organisation name:

2. Contact person:

E-mail:

Telephone:

3. Please indicate the category that best describes your organisation:

Independent supplier

Independent generator

Potential new entrant

Large energy user

4. How do you usually source your wholesale power? Please also specify what proportions are procured if multiple platforms are used.

Directly on wholesale market: OTC Exchange

Through the 'Big 6' suppliers

Through another party

Part Two– Use of platforms which promote price transparency: Exchanges

5. Are you a member on any of the power exchanges operating in the GB market?

Yes No

6. If yes, which platform do you use: APX N2EX ICE

7. Has your experience in using the specified exchange been satisfactory?

Satisfactory Unsatisfactory

Please provide any relevant information supporting your response to question 7:

8. If you answered No to question 5, please indicate why not, and whether you are planning to join any of the exchanges in the foreseeable future:
-

Further Comments:

Part Three – Number of counterparties active in the market providing hedging offers to independent market players

9. How many counterparties are currently active in the market providing hedging offers to independent market players? If this question does not apply to your business model, please ignore or mark n/a.

Please specify a number of counterparties:

10. Have you observed an increase in the number of potential trading counterparties during the past 6 months?

Yes No

In support to your answer to question 10, please specify which parties you are referring to or if confidential, please indicate which stakeholder group these counterparties belong to (e.g. financial institution, independent supplier/generator, European player):

Further Comments:

Part Four - The availability of key longer dated products and/or financial derivatives

11. Have you observed any improvements in liquidity further along the forward curve in the past 6 months?

Yes No

12. Have you observed any new longer dated or financial product being made available in the past 6 months?

Yes No



13. If Yes, please specify the products:

Further Comments:

Part Five – Overall experience

14. Do you consider that the wholesale trading conditions for independent market players are broadly sufficient to support contestability/your participation in the wholesale market?

Yes

No

Areas of satisfaction: _____

Areas of dissatisfaction: _____

Appendix 2 - Proposed interventions

1.1. This appendix sets out indicative design details of our Mandatory Auction (MA) and Mandatory Market Making (MMM) intervention options, which we are proposing as solutions to the electricity market liquidity problems identified in this document and our previous publications on liquidity.

Table 1: Mandatory Auction (MA) design features

<i>Design aspect</i>	<i>Proposal</i>
Volumes	Require Big 6 to collectively provide a prescribed volume of electricity into each auction round. Collective annual volume obligation to be either: 10 per cent; 15 per cent; or 20 per cent; of electricity generated in GB over a given year.
Products	Require Big 6 to collectively offer a range of products into each auction round. These would include: Near term products; Products for delivery further out; Baseload products; Peak products; Potentially a smaller number of shaped products (e.g. standard domestic load profile) Small clip sizes would be supported.
Frequency	Monthly auction rounds, with guaranteed availability of prescribed products and volumes in each round.
Governance	Independent trustee to be appointed to ensure that the MA is run in accordance with Ofgem’s desired objectives. Auction rules to be set out clearly and transparently.
Reserve Price	Mandatory sellers to be allowed to set reserve prices for the mandated products, provided reserve prices are not set at levels which frustrate the objectives of the auction. Role for independent trustee in securing reasonable reserve prices.
Participation	Big 6 mandated to sell. Other participants may sell into the MA, subject to approval. All market participants, including Big 6, may participate on the buy side, subject to approval.
Platform	To be selected by competitive tender, or established by

	parties in accordance with Ofgem's objectives. Accessibility to all participants must be fair and reasonable.
Trading arrangements	Ofgem wishes to see fair and reasonable trading arrangements (including those regarding credit and collateral arrangements) that do not frustrate the objectives of the MA.

Table 2: Mandatory Market Making (MMM) design features

<i>Design aspect</i>	<i>Proposal</i>
Volumes	<p>Require each of the Big 6 to provide a bid and offer price for a small volume of power, across a narrow range of frequently traded products.</p> <p>We believe the collective market making obligation on the Big Six should be in the order of 20-50MW in total.</p> <p>These volumes should be available for the market to buy and sell on a continuous basis.</p>
Products	<p>Require Big 6 to submit a bid and offer price for a narrow range of widely traded products (e.g. baseload and peak).</p> <p>These products should be available for the market to buy and sell on a continuous basis. Small clip sizes would be supported.</p>
Frequency	Continuous market making by Big 6 required.
Bid Offer Spreads	<p>Big Six will be permitted a maximum bid offer spread for the prescribed products, to ensure that the objectives of MMM are not frustrated.</p> <p>The maximum permissible bid offer spread should be reasonable and broadly reflect the spreads observed elsewhere in the wholesale market. This could be relaxed under volatile market conditions.</p>
Participation	<p>Big 6 mandated to post bid and offer prices.</p> <p>All eligible market participants, including Big 6, may participate on the buy side, subject to approval.</p>
Platform	Ofgem would support, and may require, the Big 6 to post their continuous bids and offers on a common platform, to increase transparency and accessibility to market participants.
Trading arrangements	Ofgem wishes to see fair and reasonable accessibility and trading arrangements that do not frustrate the objectives of the MMM.

Appendix 3 - Glossary

A

APX

APX Group is a holding company owning and operating energy exchange markets in the Netherlands, UK and Belgium. APX-ENDEX, a subsidiary of APX Group, provides exchange trading, central clearing & settlement and data distribution services.

B

Barrier to Entry

A factor that may restrict a firm's entry into a market.

Baseload product

A product which provides for the delivery of a flat rate of electricity in each hourly period over the period of the contract.

Bid-offer spread

Bid-offer spread shows the difference between the price quoted for an immediate sale (bid) and an immediate purchase (ask) of the same product; it is often used as a measure of liquidity.

Broker

A broker handles and intermediates between orders to buy and sell. For this service, a commission is charged which, depending upon the broker and the size of the transaction, may or may not be negotiated.

Big 6

The name collectively given to the six companies that supply most of the energy to domestic households in the GB market. They are Centrica, E.ON, Scottish and Southern Energy, RWE, EDF and Scottish Power.

C

Churn rate

Churn is typically measured as the volume traded as a multiple of the underlying consumption or generation level.

Clearing

The process by which a central organisation acts as an intermediary and assumes the role of a buyer and seller for transactions in order to reconcile orders between transacting parties.

Clip size

The size (usually in MW) of the contract to be traded.

Collateral

A borrower will pledge collateral (securities, cash etc) in order to demonstrate their ability to meet their obligations to repay monies loaned. The collateral serves as protection for a lender against a borrower's risk of default.

Contestability

The actual or threat of new entry into a market.

Contract for Difference (CfDs)

A contract designed to make a profit or avoid a loss by reference to movements in the price of an underlying item. The underlying item is not bought or sold itself.

Counterparty Risk

The risk that a counterparty to a contract defaults and does not fulfil its contractual obligations.

D

Day-Ahead market

A form of spot market where products are traded for delivery in the following day.

E

EEX

European Energy Exchange. An energy exchange based in Leipzig, Germany. EEX operates spot and derivatives markets for energy and related products.

EPEX

European Power Exchange. An energy exchange based in Paris, France. EPEX operates spot and derivatives markets for electricity products.

F

Financial settlement

Whenever a contract's value at maturity is settled with a monetary transaction.

Forward

The trading of commodities to be delivered at a future date. Forward products may be physically settled - by delivery - or financially settled.

H

Hedging

Transactions which fix the future price of a good or service, and thereby remove exposure to the daily (or spot) price of a good or service. This enables those purchasing a good or service to reduce the risk of short term price movements.

Heren ICIS

A publisher of gas, power and carbon market information.

Herfindahl Hirschman Index (HHI)

A measure of market concentration calculated by adding up the squared values of market shares for each firm in the market. It is influenced both by the number of firms in the market and differences in their relative sizes. The value of the HHI decreases as the number of firms in a market rises. Similarly the value of the HHI will be greater the larger the degree of inequality in firm size.

I

ICE

Intercontinental Exchange, an American financial company that operates Internet-based marketplaces which trade futures and over-the-counter (OTC) energy and commodity contracts as well as derivative financial products.

I&C Sector

Industrial and Commercial sector. The non-domestic sector in general rather than any specific group of customers.

Incumbent

An incumbent is a firm that is already present in the market. In the context of this document the term is generally applied to the large vertically integrated firms present in the GB electricity market (Big 6).

M

Market Coupling

Market coupling is a method for integrating electricity markets in different areas, applied across a number of European countries.

N

[N2EX](#)

The N2 Exchange, a recently established GB electricity market platform, which is operated by Nasdaq OMX and Nord Pool Spot AS.

[Nord Pool](#)

Nord Pool, the Nordic Power Exchange, a single power market for Norway, Denmark, Sweden and Finland.

O

[OCM](#)

On the day commodity market. This market enables anonymous, financially cleared, on-the-day trading in gas between registered market participants. The market is operated by APX-ENDEX.

[Over the counter \(OTC\)](#)

Trading of financial instruments, including commodities, that takes place directly between counterparties. This is in contrast to exchange-based trading where the exchange acts as a counterparty to all trades.

P

[Peak product](#)

A product which provides for the delivery of a flat rate of electricity for the period of the day when demand is typically highest, over the period of the contract.

[Physical settlement](#)

Whenever a contract at maturity results in an exchange of the contracted good for its contracted value.

[Product](#)

The type of contract available. Examples include day-ahead, weekly, weekend, block seasonal, year, etc. Standard products are those that are widely traded on well-established terms, so exchanges generally deal in standard products. By contrast, structured products are those where the terms are precisely tailored to match the contract buyer's requirements, and they usually involve variable contract volumes and/or non-standard volumes and durations.

[Prompt trading](#)

For the purposes of this document prompt trading refers to trading for delivery between (but not including) within-day and the next month (front month). This includes a number of products, including products for delivery for the following day

(e.g. day-ahead), weekend, weekdays, and trades for the balance of week and balance of month.

S

Shaped product

A shaped product is a contract which specifies different amounts of electricity to be delivered at different times. A bespoke shaped product with half-hour granularity could specify a different volume for every half-hour period of the contract's duration.

Spot price

The price for a product which is delivered immediately or within a very short period of time (usually within-day).

T

TXU

Texas Utilities, today known as Energy Future Holdings Corporation.