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# Wholesale power market liquidity: statutory consultation on the 'Secure and Promote' licence condition - Impact Assessment

## Impact Assessment


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**Overview:**


Consumers can benefit from energy market competition through downward pressure on bills, better service and greater choice. We are concerned that poor liquidity in the electricity wholesale market is presenting a barrier to entry and competition in the generation and supply markets. In December 2012 we consulted on a 'Secure and Promote' licence condition to address this barrier, and in June 2013 we set out our updated design for consultation, alongside a draft impact assessment. We are now launching a statutory consultation on our Secure and Promote proposals.

This document is intended to be read alongside our statutory consultation document ('Wholesale power market liquidity: statutory consultation on the 'Secure and Promote' licence condition'), which sets out our final design for Secure and Promote. This impact assessment evaluates the potential impacts of our proposals on consumers, competition and sustainable development. It also provides our estimate of the potential costs associated with this intervention. It reflects feedback from stakeholders on the draft impact assessment, as well as our own further thinking.

This document constitutes the statutory impact assessment required under section 5A of the Utilities Act 2000 for proposals that are considered "important" within the meaning of that section. We welcome views from stakeholders on all aspects of this impact assessment. The closing date for responses is **18 December 2013**.

# Context

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

This Impact Assessment should be read alongside our statutory consultation document setting out our proposals for intervention to improve liquidity.[1] The purpose of this document is to describe and evaluate the potential impacts of our proposed intervention. This document constitutes the statutory Impact Assessment required under section 5A of the Utilities Act 2000.

To provide continuity, this document retains the structure of the draft Impact Assessment, as prescribed by our 2009 Guidance on Impact Assessments.[2] Although this Impact Assessment has been written under the 2009 Guidance, we have also paid attention to our recent revised Guidance.[3]

# Associated documents

- Wholesale power market liquidity: statutory consultation on the 'Secure and Promote' licence condition, 20 November 2013 https://www.ofgem.gov.uk/sites/default/files/docs/2013/11/wholesale_power_market_liquidity_statutory_consultation_on_the_secure_and_promote_licence_condition.pdf

- Wholesale power market liquidity: final proposals for a 'Secure and Promote licence condition – draft impact assessment, 12 June 2013 https://www.ofgem.gov.uk/ofgem-publications/39303/liquidity-draft-ia-120613.pdf

- Wholesale power market liquidity: final proposals for a 'Secure and Promote' licence condition, 12 June 2013 https://www.ofgem.gov.uk/ofgem-publications/39302/liquidity-final-proposals-120613.pdf

[1] Ofgem (2013), 'Wholesale power market liquidity: statutory consultation on the 'Secure and Promote' licence condition', 20 November 2013.
[2] Ofgem (2009), 'Guidance on Impact Assessments', 15 December 2009, Reference: 151/09.
[3] Ofgem (2013), 'Impact Assessment Guidance', 1 October 2013.

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# Executive Summary

**Why liquidity is important**

Liquidity is a key part of well-functioning wholesale energy markets. It produces robust prices and allows firms to obtain the products that they need in order to compete. Wholesale markets also need to be accessible to a range of market participants, including smaller firms and entrants.

Our analysis suggests that liquidity in the electricity wholesale market remains insufficient. The volumes traded along the forward curve are lower than in other markets and bid-offer spreads remain wider. Qualitative feedback also suggests that firms find the current levels of liquidity unsatisfactory. In addition, small suppliers face particular barriers to accessing wholesale electricity products.

Poor liquidity acts as a barrier to entry and competition. It limits the ability of generators and suppliers to trade and manage their risks. As a result, poor liquidity obstructs consumers from accessing the benefits of competition: downward pressure on bills, better service and greater choice.

**The rationale for intervention**

The market is locked in a 'low-liquidity equilibrium' and is therefore unlikely to resolve these problems by itself. This is because trading is both the cause and the consequence of liquidity. A lack of price signals or opportunities to trade may deter firms from trading, thereby further reducing liquidity. A regulatory intervention is needed to break out of this negative cycle and kick-start liquidity. We have frequently indicated our preference for industry-led action to achieve our liquidity objectives, and have given plenty of time for this to take place. Given that our liquidity objectives remain unmet, we are convinced that intervention is now warranted.

For this reason, we are now holding a statutory consultation on intervening in the market through a Secure and Promote (S&P) licence condition. The first part of S&P is the Supplier Market Access rules to improve access to the wholesale market for small suppliers. The second part is market making in forward electricity products to ensure that opportunities to trade are present and to improve the robustness of price signals along the curve. This will allow firms to hedge their physical positions.

This impact assessment (IA) evaluates our S&P design, setting out our assessment of the costs and benefits of the intervention. It builds on the draft IA published in June 2013, and incorporates feedback received from stakeholders.

**Our assessment of the benefits of S&P**

The primary impact of our proposals would be to deliver benefits to consumers by removing poor liquidity as a barrier to entry and competition. This applies to both the generation and supply markets, as opportunities to trade and robust prices should be helpful for all firms, including the proposed S&P licensees. Greater competition should encourage firms to price more keenly, leading to downward pressure on

consumers' bills. This may materialise through a reduction in firms' costs or profits. It could also encourage improved customer service and innovation by suppliers. Furthermore, improved liquidity as a result of S&P should be helpful for firms investing in generation, meaning that S&P may contribute to secure energy supplies for consumers.

**Our assessment of the costs of S&P**

Following feedback on the draft IA and further work, we have updated our assessments of the costs of S&P. Under our revised best estimate, S&P would have a total set-up cost of £3m, and an annual ongoing cost of around £19m. These are costs across all licensees. The set-up cost estimate is slightly lower than the draft IA, while the ongoing cost estimate is roughly one third larger, primarily due to quantifying the credit costs related to market making. These estimates assume strong usage of the S&P arrangements, implying that the costs would be accompanied by substantial benefits. Due to the difficulty of measuring the effects of increased competition, we have not quantified the expected benefits of S&P. However, we note that a 0.5% reduction in operational costs or a 0.8% reduction in profits (across generation, domestic and non-domestic electricity supply) would be sufficient to equal the ongoing costs of S&P.[4]

**Our conclusion**

We consider that S&P will deliver benefits for consumers, in particular by removing an important barrier to entry and competition. Based on our 'break-even' analysis, which looks at the size of the benefits that would be needed to exceed the costs, we believe it is very likely that the benefits of S&P will outweigh the costs. Moreover, we believe that S&P will provide a better balance of costs and benefits than the other intervention options that we have considered (such as the Mandatory Auction and the Self-Supply Restriction).

**Next steps**

We welcome comments on all aspects of this IA. Subject to any responses to this consultation and the statutory consultation, we will direct the modification to the generation licences of obligated parties to be implemented on 31 March 2014.[5]

[4] Under our high case, a 0.9% reduction in operational costs or a 1.6% reduction in profits would be sufficient to equal the ongoing costs of S&P.
Under our low case, the figures would be a 0.2% reduction for operational costs or a 0.3% reduction for profits.
[5] The date of the decision to modify licences would need to be at least 56 days before 31 March.

# 1. Key issues and objectives

**Chapter Summary**

We describe why liquid wholesale energy markets are important for consumers, and set out our liquidity objectives. We then explain why regulatory intervention may be necessary to improve liquidity.

**Question 1: Do you agree with our description of the key issues and objectives for our Secure and Promote proposals?**

### Introduction to liquidity

1.1. Liquidity is the ability to quickly buy or sell a commodity without causing a significant change in its price and without incurring significant transaction costs. It is a key feature of a well-functioning market. A liquid market can also be thought of as a 'deep' market where there are a number of prices quoted at which firms are prepared to trade a product. This gives firms confidence that they can trade when needed and will not move the price substantially when they do so.

## Why liquidity is important

1.2. In a liquid wholesale electricity market, products are available to trade and prices are robust. These products and price signals are important for electricity generators and suppliers, who need to trade to manage their risks. Liquidity in the wholesale electricity market therefore supports competition in generation and supply, which has benefits for consumers in terms of downward pressure on bills, better service and greater choice.

### Product availability

1.3. In a liquid market, firms can buy and sell electricity products when they want. Access to the wholesale market is essential to be able to operate as an electricity generator or supplier: suppliers need to be able to buy electricity to supply their customers, and generators need to be able to sell the output from their power stations. If firms are not certain that they can trade electricity, they may not enter the market.[6] This would pose a barrier to competition, and may also limit investment.

[6] While alternative ways of buying and selling power do exist, such as long-term contracts or

1.4. Beyond this, a liquid market allows generators and suppliers to obtain a range of products to manage their risks. For example, using different types of products[7], a firm can match its contracted position to its physical shape. This means it is able to reduce its risks and avoid any costs of being out of balance. Longer-dated products are also important as they allow a firm to manage its price risks by trading forward (hedging). This helps the generator or supplier by providing increased certainty over revenues. Hedging by suppliers also enables them to provide a better price offer to consumers and protects consumers from energy price volatility.

**Price discovery**

1.5. A liquid market also provides robust prices. As firms trade, they reveal information about their valuation of a product. This information is then incorporated into the market price,[8] building a robust consensus view.[9] Liquidity might also contribute to making prices more robust to manipulation[10], although other factors are also important, such as monitoring and enforcement action taken under the Regulation on Energy Market Integrity and Transparency (REMIT).[11]

1.6. A liquid market therefore delivers price signals. In the short-term, these prices provide information which allows firms to make trading decisions. Suppliers can use prices to inform hedging strategies and tariff offers to consumers. For generators, price signals contribute to decisions about when to sell output. Price information also allows generators to make operational decisions, which should ensure that the most economically efficient plants are dispatched. In the longer-term, price signals can also form part of the case for investment in generation.[12] Liquid markets can therefore contribute to security of supply.

## Ofgem's liquidity objectives

1.7. In order to provide a framework for our work on liquidity, we have set out three liquidity objectives for the GB wholesale electricity market. These reflect

vertical integration, these may be complex to set up (particularly for an entrant), and may not offer the flexibility of trading in the market.

[7] Eg baseload, peak and blocks.

[8] A key argument in favour of competitive markets is that they are an efficient way of revealing information held by market participants and incorporating this into the price. The price therefore provides the true signal of the value of a product.

[9] Greater consensus on prices in a market may be indicated by tighter bid-offer spreads.

[10] For example, it may require a larger volume of trades to move the price in a liquid market, making manipulation more difficult or expensive.

[11] Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency.

[12] Chapter four discusses the impact of a liquid market on investment decisions.

the features that would be expected from a well-functioning, liquid market that delivers for consumers. These objectives are:

- **Objective 1: Availability of products to support hedging –** Our first liquidity objective is the availability of wholesale electricity products that firms require to allow them to enter the market and compete effectively. During the project we have been particularly concerned about longer-dated and peak products, as these have particularly limited liquidity at present. We are also interested in whether products can be accessed by a range of market participants, including entrants and smaller players.

- **Objective 2: Robust reference prices along the curve –** Our second liquidity objective looks at forward prices. It reflects the need for liquidity to support prices along the forward curve that are trusted to provide a fair reflection of the value of products. As noted above, these prices provide valuable signals for market participants that inform their commercial decision making and enable them to compete.

- **Objective 3: An effective near-term market –** Our third liquidity objective relates to the period closer to delivery (for example, within the week before delivery). Liquidity in this period is important as it allows firms to match their contracted positions to their physical volumes and avoid imbalance charges. A robust near-term price might also underpin the development of greater liquidity along the curve by acting as a reference price for the settlement of financial futures. Near-term liquidity may be affected by a range of particular factors, such as plant outages and weather forecasts.

1.8. These objectives provide the basis for our regular monitoring of market liquidity. We have provided regular updates on progress against these liquidity objectives. Each review has helped us to identify the priorities for the development of intervention options.

## Ofgem's concerns about liquidity in the GB power market

### Identifying the issue

1.9. Poor liquidity in the GB power market has been a long-standing concern for Ofgem. As part of the Energy Supply Probe in 2008, liquidity was identified by stakeholders as "the most significant issue facing potential new entrants and small scale suppliers."[13] The Probe indicated that liquidity in the GB wholesale power market was lower than in other commodity markets.[14] There were

[13] Ofgem (2008), 'Energy Supply Probe – Initial Findings Report', 6 October 2008, Reference: 140/08, paragraph 6.19.
[14] Ofgem (2008), 'Energy Supply Probe – Initial Findings Report', 6 October 2008, Reference: 140/08, paragraph 6.24.

particular concerns over whether small suppliers could obtain the products they need, which may have contributed to the lack of successful entry into the supply market.[15] Subsequent work has reinforced this view of the market, for example indicating that "a lack of wholesale products and wholesale market transparency combine to frustrate the trading activities of non-vertically integrated suppliers and may protect any advantaged position of the Big 6".[16]

1.10. Appendix two provides an update on the metrics that we use to measure liquidity. We note that churn remains low, and that bid-offer spreads remain notably wider than in the gas market. Traded volumes suggest that liquidity is especially low beyond the first couple of seasons. Alongside the qualitative feedback that we have received from stakeholders, this indicates that there is still a lack of liquidity along the curve, and that our first and second liquidity objectives remain unmet. We are concerned that this may be forming a barrier to entry and competition in the generation and supply markets.[17]

**Why does poor liquidity require regulatory intervention?**

1.11. There are reasons to think that the issue of low liquidity will not be addressed without regulatory intervention. One of these is the track record of forward liquidity over the past few years. Despite our focus on the problem, there have been few signs of improvement. We have consistently stated our preference for industry-led action to improve liquidity,[18] and have given time for such action to take place.[19]

1.12. There may be economic reasons for liquidity not to improve on its own. A liquid market is inherently more attractive to those seeking to trade, and it may therefore attract further liquidity. In contrast, a market with a low initial level of liquidity may continue to be unattractive. This may be explained by the fact that firms do not factor in the positive externalities[20] from trading.[21]

[15] While there has been entry by several small suppliers since the Probe, these firms remain small; in the domestic electricity market, the market share of suppliers outside the six large vertically integrated firms remains only 2%. (Ofgem (2013), 'Ofgem 2013 National Report to the European Commission', p59).
[16] Ofgem (2011), 'The Retail Market Review – Findings and Initial Proposals', 21 March 2011, Reference: 34/11, paragraph 1.3.
[17] Chapter three provides more detail on this concern.
[18] Eg Ofgem (2012), 'Retail Market Review: Intervention to enhance liquidity in the GB power market', 22 February 2012, Reference: 21/12, p3.
[19] We recognise that there have been some positive industry-led actions – for example, the recent switch from the Electricity Forward Agreement (EFA) calendar to the standard (Gregorian) calendar for the trading of GB power products.
[20] An externality is a spillover effect from an individual's economic activity. A positive externality is one that is beneficial for others.
[21] Positive externalities from trading are discussed by Benos and Wetherilt (2012), 'The role of designated market makers in the new trading landscape', *Bank of England Quarterly Bulletin*, vol 52, no 4, p344.

1.13. These externalities are the benefits for others in the market when a firm trades; the firm may not consider these when deciding whether or not to trade. (These are beyond the direct benefits to the firm of being able to buy or sell electricity).

- In terms of product availability, a firm being active in the market increases the chances for other companies of finding a counterparty who wants to trade with them.[22]

- For price discovery, when a firm trades it contributes its own information to refine or validate the market price. This helps to build confidence in the market price and encourages further increases in trading. Conversely, in an illiquid market, firms have less confidence in the price, and so are less likely to want to trade.

The positive externalities from trading may be particularly large in an illiquid market, where incremental increases in trading may have more impact.

1.14. The above is an example of a 'reciprocal externality', where the level of activity of one party depends on the level of activity of another.[23] In broad terms, this can be applied to suggest that there may be multiple liquidity equilibriums, and that it may be difficult for a market to move between these without a substantial external shock.

1.15. Low liquidity may not only fail to correct itself; it may actually lead to a downward spiral of liquidity. In a market with low liquidity, firms may feel that they cannot rely on the traded market. They may therefore seek alternative means of securing power, such as vertical integration or long-term contracts.[24] In addition, some firms may exit the market, and others may decide not to enter. This may reduce the number of firms seeking to trade, and contribute to a further decrease in liquidity. A vicious circle may develop.[25]

1.16. These arguments suggest that the problem of low liquidity may be self-sustaining, and that individual market participants may have little incentive to

[22] This may be seen as a form of network effect – the value of the marketplace increases with the number of other participants.
[23] For further information, see appendix three of Ofgem (2010), 'Liquidity Proposals for the GB wholesale electricity market', 22 February 2010, Reference: 22/10.
[24] Long-term contracts may exist for reasons other than purely selling energy – for example, a Power Purchase Agreement will include an offtaker managing imbalance risk for a generator.
[25] This paragraph draws on Ofgem's 2009 liquidity discussion paper, which considered potential causes of low liquidity in more detail. (Ofgem (2009), 'Liquidity in the GB wholesale energy markets', 8 June 2009, Reference: 62/09).

address this issue. A regulatory intervention may therefore be required to 'kick-start' improvements in liquidity that become self-sustaining over time.[26]

1.17. There is a different problem in relation to access to the wholesale market for small suppliers. Firms make commercial decisions about where to focus their efforts in selecting counterparties to trade with. This may mean that they do not prioritise signing trading agreements with small suppliers, as they see little potential for commercial benefit. Likewise, they may not seek to provide products in sizes that are suitable for small suppliers. While this could be individually rational, it would act as a barrier to small suppliers entering and competing in the market. This may be problematic from the wider perspective of encouraging competition, and contrary to the interests of consumers. Regulatory intervention is needed to facilitate accessibility for small suppliers.

**Are there factors beyond the scope of regulatory intervention that affect liquidity?**

1.18. Before evaluating a regulatory intervention, it is worth considering whether regulatory intervention can address the problem of low liquidity. Some (non-exhaustive) factors that have been suggested as inherent barriers to liquidity are discussed below.

- **Size of the market –** We do not believe that GB is too small to sustain a liquid market. The GB electricity market is of a similar size to the Nordic market,[27] which is much more liquid. The GB market has also previously been more liquid.

- **Level of interconnection –** It has been suggested that liquidity in Germany is driven by high levels of interconnection, and that lower liquidity in GB is the result of low interconnection. We acknowledge that interconnection may help liquidity by creating opportunities to trade between markets, and by increasing the number of participants as firms trade in neighbouring markets.[28] However, figures suggest that levels of liquidity and interconnection do not necessarily go hand in hand.[29] Some

[26] This rationale has been used by other regulators. See for example, Energy Market Authority (2012), 'Development of an electricity futures market in Singapore', 22 October 2012, pp3-4. (It must be accepted that in this case, the regulator was seeking to build a market from scratch, rather than to improve the liquidity of an existing market).
[27] GB generation in 2011 was 365TWh. (DECC (2012) 'Digest of United Kingdom Energy Statistics 2012', paragraph 5.4). Generation in the Nordic countries (Denmark, Finland, Norway, Sweden) in 2011 was 370TWh. (Nordreg (2012), 'Nordic Market report 2012,' p7).
[28] Interconnection has been considered previously by Ofgem – see paragraphs 3.30 to 3.35 of our 2009 liquidity discussion paper.
[29] We have updated the analysis in the 2009 liquidity discussion paper using data from ENTSO-E (2012), 'Statistical Yearbook 2011'. This shows that interconnector flows were 4% of GB consumption in 2011. The equivalent figure for Germany was 19%. France's percentage was similarly high (15%), but liquidity in France is much lower than in GB. For Nordpool, the

previously suggested that the opening of Britned in 2011 would act as a spur to liquidity in GB, but overall levels of liquidity have not improved.

- **Relationship with the gas market** – Stakeholders have argued that the strong correlation between gas and power prices in GB means that firms will choose to trade gas instead to manage their risks. We accept that speculative firms, who could otherwise provide liquidity to the GB power market, may be attracted to the more liquid GB gas market. However, for physical players, this so-called 'dirty hedging' may not be sufficient. The future correlation between these commodities may change, especially given higher intermittency.[30] The gas market also does not provide access to peak products. Smaller players may find this approach to managing their risks particularly unappealing, especially as a firm using gas to hedge a physical power position would still have to purchase power at some point.

- **Impact of the financial crisis** – The financial crisis may have led to a decline in the risk appetite of financial firms and an increase in the cost of credit. The latter impact may be important for firms' ability to trade, but should not prevent GB power from being as liquid as other markets.

1.19. There are a wide variety of factors that influence liquidity. As discussed above, we are not persuaded that these factors present an insurmountable barrier to improvements in liquidity. We consider that there is room for intervention to improve liquidity and have a positive impact for consumers.

## Options considered

1.20. While our work on liquidity considered a range of options, this consultation focuses on our proposals for a Secure and Promote (S&P) licence condition. In this context, our priority is to conduct a full evaluation of the impact of this option. The baseline for evaluation will be a case without liquidity intervention.[31] We have previously considered a range of alternative options; the main alternatives were discussed in appendix two of the draft IA.

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percentage (excluding flows within the area) was 9%. This is closer to the level in GB than the level in Germany, but Nordpool is generally acknowledged to be more liquid.

[30] See for example, Cambridge Economic Policy Associates (2010), 'Market Power and Liquidity in SEM – A report for the CER and the Utility Regulator', 15 December 2010, p35.

[31] Note that this ignores consideration of any potential government use of the liquidity powers sought in the Energy Bill. Such government intervention would be possible if we decided not to intervene, but for simplicity we have not factored this into our baseline scenario.

# 2. Impact on consumers

**Chapter Summary**

We examine how the potential impacts of our S&P proposals will ultimately affect consumers. Improved liquidity may deliver benefits for consumers through increased competition and improved security of supply. We also outline other potential impacts on consumers, including costs.

**Question 2: Do you agree with our evaluation of the impact of our Secure and Promote proposals on consumers?**

2.1. As indicated by Ofgem's principal objective, the ultimate focus of our work is to ensure the market works in the interests of consumers. This chapter therefore seeks to evaluate S&P by considering whether it has a positive impact on consumers. While specific areas (competition, security of supply, costs) are discussed in later chapters, this chapter summarises how these areas affect consumers.

## Potential benefits for consumers from increased competition

### Competitive pressure on consumers' bills

2.2. The potential impact of any intervention on bills is likely to be a key consideration for consumers. It is difficult to provide a quantitative estimate of the potential impact on consumers' bills from greater liquidity. This is due to the inherent difficulty of forecasting the benefits from competition, which will depend on a wide range of factors. In the absence of a quantitative estimate, we provide a qualitative description of the potential impacts on bills, by examining each component of retail prices in turn.

2.3. **Wholesale energy costs** – Wholesale costs are influenced by a variety of factors, including those outside of our control, such as global commodity prices. However, increased liquidity should help to exert competitive pressure on wholesale costs, in the following ways:

- If increased liquidity allows generators to compete more effectively, then this could lead to downward pressure on profits earned from generation, as firms have a reduced ability to earn excess returns.

- If increased liquidity reduces the risks of being a generator, then this would decrease the profit margin required by generators, as they should require a lower return for a less risky activity.

- Competitive pressure on generators could also encourage them to reduce their operational costs.

- There may be a further effect on the wholesale costs of retailers: if S&P allows them to manage their risks better by trading a range of longer-dated products, then this may help suppliers to compete more actively on the price they offer to consumers. At the very least, improved availability of longer-dated products should enable suppliers to protect their customers from short-term increases in wholesale prices.

2.4. **Suppliers' operational costs –** The impact of increased liquidity on bills may be easier to identify for the elements under the direct control of suppliers. One of these is the supplier's operational costs. Increased competition between suppliers should incentivise them to become more efficient, leading to reductions in operational costs. It is worth noting that suppliers currently exhibit different levels of operational costs;[32] this might indicate that there is room for increased competition to deliver lower operational costs. To illustrate this – if the mean operational cost per unit fell from the current level to the level currently exhibited by the second-lowest supplier, the consequent saving would be just over £150m per year. We note that this is significantly in excess of our cost estimates for S&P (see chapter five), and this figure considers the domestic electricity supply market only.

2.5. **Suppliers' profit margins –** Increased competition facilitated by improved opportunities to trade should encourage suppliers to price more keenly, creating downward pressure on consumers' bills. If suppliers do not reduce their costs, this change in bills would result in a reduction in the supplier's margin. In addition, following the same rationale above for generators, suppliers should accept a lower return on a less risky activity. By improving the ability of suppliers to manage their risks, better liquidity may reduce the minimum profit margin required.

2.6. The other main components of a typical bill are network charges, Value Added Tax, and the charges for environmental and other schemes. These make up around 41% of a typical domestic electricity bill.[33] Our proposals would not be expected to have an impact on these components of a bill.[34]

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[32] This can be seen using the Segmental Statements provided by the six large vertically integrated suppliers to Ofgem. (Available through the Ofgem website here: https://www.ofgem.gov.uk/publications-and-updates/energy-companies-publish-2012-consolidated-segmental-statements). Based on the 2012 figures, the operational cost per unit for domestic suppliers ranged from £12.56/MWh to £22.57/MWh, with a mean of £17.42/MWh. (We recognise that this will to some extent reflect differences between suppliers' consumer bases, especially any economies of scale). Differences in operational costs were noted by Institute for Public Policy Research (2012), 'The true cost of energy', April 2012, pp25-28.

[33] The components as a percentage of a typical domestic electricity bill are: network charges

2.7. The potential benefits for consumers do not only apply to the electricity market. Most domestic electricity is sold to consumers via 'dual fuel' tariffs.[35] This strong link between the gas and electricity retail markets means that greater liquidity may increase competitive pressure on bills across both fuels.

**Customer service**

2.8. Firms operating in a competitive market face increased incentives to be responsive to their customers and to provide a good quality of service. It is worth noting that significant numbers of complaints have been made about the service that energy firms provide at present.[36] Overall, only 50% of domestic consumers are satisfied with their supplier.[37] It may be that more active competition will incentivise firms to improve their service. Improved liquidity may especially reduce barriers to entry for smaller suppliers, who may have a particular role to play in improving consumer satisfaction; some of them have obtained the highest satisfaction levels across suppliers.[38]

**Choice and innovation**

2.9. If liquidity permits entry into the supply market from a wider range of firms, or allows existing firms to compete more vigorously, this will increase the choice available to consumers.[39] Improved availability of forward products may have a particular impact on the ability of a range of suppliers to offer fixed price deals. It may also help suppliers to follow a greater variety of hedging strategies, reducing the likelihood of retail prices changing together.[40]

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20%, VAT 5%, environmental costs 11%, and other costs 5%. (Ofgem (2013), 'Updated: household energy bills explained', 16 January 2013, Factsheet 98, p2).

[34] Except that reducing other elements of the bill would also mean a reduction in the VAT paid.

[35] Dual fuel represented 16.9m domestic customer accounts in August 2010, compared to 9.2m electricity-only accounts and 4.6m gas-only accounts. (Ofgem (2011), 'The Retail Market Review – Findings and initial proposals. Supplementary appendices', 21 March 2011, Reference: 34/11, p49).

[36] Links to complaint information from some suppliers are available on the Ofgem website: http://www.ofgem.gov.uk/Sustainability/Cp/Cr/Pages/Supplierdataoncustomercomplaints.aspx

[37] GfK NOP Energy Satisfaction Monitor, data from Q4 2012 survey. GfK uses government statistics (ONS) to produce a panel of 12,000 households, demographically representative of the 26m households in Britain.

[38] Which? (2013), '2013 Energy Satisfaction Survey'. http://www.which.co.uk/switch/energy-suppliers/energy-companies-rated

[39] This will of course be within the framework set out under the Retail Market Review to ensure that consumers are not presented with an unnecessarily complex range of tariffs.

[40] For a discussion of similarities in hedging and pricing between suppliers, see Ofgem (2011), 'The Retail Market Review – Findings and initial proposals', 21 March 2011, Reference: 34/11, paragraphs 2.79 to 2.83.

2.10. Our Supplier Market Access proposals and our wider attempts to improve liquidity through market making may particularly help new players to enter the market. These firms may have new ideas or business models which may be at the forefront of innovation. S&P should reduce the extent to which wholesale product availability is a constraint on the offers that suppliers can make to consumers, and ensure that firms who have new ideas are better able to implement them.

## Other consequences for consumers

### Consumer confidence and transparency in the power market

2.11. There is significant public interest in energy markets. Consumers want to be sure that the energy markets are delivering the best possible deal for them. If S&P helps to facilitate entry and competition, this may help to build trust by giving consumers options and a range of different suppliers. The market making element of S&P will also help to provide greater transparency of market prices to those within the industry.[41]

### Security of supply

2.12. When carrying out our functions under the Electricity Act to protect the interests of existing and future consumers, we must have regard to a number of factors, including security of supply. By contributing to investment and operational decisions, the improved liquidity as a result of these proposals may help to encourage the availability of generation capacity, with consequent benefits for security of supply. Chapter four examines the impact of these proposals on security of supply.

### Costs

2.13. The introduction of S&P will create some costs for the proposed S&P licensees. Chapter five sets out the detail of our cost estimates. To summarise, in our best estimate case we estimate that Secure and Promote could have a set-up cost across all S&P licensees of just under £3m, and an ongoing cost across all S&P licensees of around £19m per year. This ongoing cost would approximate to 6p/MWh, or just under 20p per year for a typical domestic customer bill.[42] It is reasonable to assume that some or all of these costs will be passed through to consumers. However, it is also reasonable to conclude that these would be offset – and probably exceeded - by benefits for consumers.

[41] While market participants can already use software to give them a view of the prices currently present in the market, S&P will increase the availability and quality of market prices.
[42] It is easier to use a domestic customer bill for this example as consumption levels vary more between consumers in the non-domestic market.

2.14. Only small benefits would be needed to outweigh our estimate of the costs of S&P. As noted above, reductions in operational costs or profit margins should occur as firms seek to respond to competitive pressure by trying to find ways to make a better offer to consumers. This would place downward pressure on consumers' bills. Across both generation and supply, a 0.5% reduction in operational costs or a 0.8% reduction in profits could equal the ongoing costs of S&P.[43] This would ensure that consumers' bills were not higher as a result.

2.15. Furthermore, it is important to note that some of the key costs of the intervention are proportionate to its level of impact. The level of costs mentioned above is based on an assumption of significant volumes of trading under S&P (primarily through the market maker). This means it would be having a large impact in terms of liquidity and potentially delivering significant benefits to consumers along the lines set out above.

[43] Information on the baseline current level of operational costs and profits is taken from the 2012 Segmental Statements. (See chapter five for more information).

# 3. Impact on competition

**Chapter Summary**

We examine how poor liquidity imposes barriers to entry and competition. We then discuss how S&P could remove these barriers. We also consider whether S&P could have wider impacts on competition.

**Question 3: Do you agree with our evaluation of the impact of our Secure and Promote proposals on competition?**

## How liquidity affects competition

3.1. As discussed in chapter one, a liquid wholesale market is important for competition in both generation and supply markets, and we consider that forward liquidity in the GB wholesale power market is poor. Consequently, poor liquidity may be forming a barrier to entry and competition in the GB power market. This view is widely shared – for example, it was put forward in a report for Energy UK from January 2011.[44] The potential impact of low liquidity on European energy markets has also been noted by the European Commission, whose 2007 Sector Inquiry concluded that "low levels of liquidity are an entry barrier to both gas and electricity markets".[45]

3.2. We are not evaluating the GB power market against an ideal world of perfect competition. The comparison is rather with a "well-functioning market".[46] Poor liquidity is not the only factor which may limit competition in the GB electricity market. There are other significant factors, for example the credit terms available to players in the market.[47] Some of these barriers are inherent and can benefit consumers – for example, there may be economies of scale in spreading fixed IT costs over a larger number of customers. However, we believe that improved liquidity will remove an important barrier to entry which is not an inevitable feature of the market.

[44] Frontier Economics (2011), 'Competition and Entry in the GB electricity retail market – a report prepared for Energy UK', January 2011, p17.
[45] European Commission (2007), 'DG Competition Report on Energy Sector Inquiry', 10 January 2007, SEC (2006) 1724, p8.
[46] Competition Commission (2013), 'Guidelines for market investigations: Their role, procedures, assessment and remedies,' April 2013, CC3 (Revised), paragraph 320.
[47] We have recognised this throughout the liquidity project – eg Ofgem (2010), 'Liquidity proposals for the GB wholesale electricity market', 22 February 2010, Reference: 22/10, paragraph 1.15. For further discussion of other potential barriers for suppliers, see chapter six of Ofgem (2008), 'Energy Supply Probe – Initial Findings Report', 6 October 2008, Reference: 140/08.

**Poor liquidity poses a barrier to entry and competition in both the generation and supply markets**

*Suppliers*

3.3. Poor liquidity in the forward markets may limit the types of tariffs that suppliers can offer, and their attributes. Offering fixed term tariffs may be very risky if it is not possible to hedge them in the market, including if there is limited availability of forward peak products. The ability of firms to offer attractive stable prices may also be limited if it is hard to hedge.[48] This may prevent these suppliers from being able to compete effectively on price. Discussions with potential entrants have indicated that difficulties with accessing the wholesale market and poor electricity market liquidity were among the key reasons not to enter the supply market.

3.4. As well as the wider issue of poor forward market liquidity, smaller suppliers face specific issues when trying to access wholesale market products. There is a lack of availability of products in small clip sizes that reflect the quantities of electricity that small suppliers need. Smaller suppliers have also stressed that they need access to a wider range of wholesale energy market products than is often available, including peak and longer-dated products. Another issue is the time taken to set up trading and credit agreements. Small suppliers have indicated that this process can be very slow, and that it can sometimes be difficult to get a response.

*Generators*

3.5. Generators have identified limited forward liquidity as a barrier to the effective hedging of their plants.[49] Peak liquidity is particularly poor along the curve, which may limit their ability to hedge non-baseload generation.[50] The importance of hedging may be shown by the prominence that it is given by generators in messages to investors. An effective hedging strategy attracts investment by suggesting that the generator can provide a predictable return.

3.6. Poor liquidity may also reduce the ability of generators to optimise the trading of their plants. An illiquid market can be viewed as imposing a transaction

[48] Ofgem's Supply Market Indicator uses an 18 month indicative hedging strategy, based on information collected during the Energy Supply Probe. The fact that suppliers start hedging over a year ahead also fits with what we have been told by some large suppliers about their hedging behaviour. Figure 2.1 of Ofgem (2012), 'Methodology for Supply Market Report', shows how a hedging strategy over 12 months is more volatile than a longer one. Suppliers unable to follow a longer hedging strategy due to poor liquidity may therefore be disadvantaged in the offers they can make to consumers.
[49] Intermittent generators may not look to sell in forward markets, as output forecasts improve nearer to delivery. Chapter four discusses of the impact of S&P on such plants.
[50] Peak products may be increasingly useful in future for thermal plants, whose running hours may decline as a result of increased renewable generation.

cost, through a wide bid-offer spread. This cost means that trades do not occur which would have been economically efficient – this can be considered as a deadweight loss[51] to the market. Reduced opportunities to trade may also weaken the case for investment in generation.

3.7. Generators also suffer from the limited availability of robust prices in the market, which provide important signals for investment in new plants. In the absence of these signals, their ability to compete effectively may be limited. Price signals may also help when scheduling maintenance of existing plants, as firms can schedule maintenance for the least profitable periods of the year.

**Effect of these barriers to entry**

3.8. By impeding the access of market participants to wholesale electricity products and price signals, poor liquidity creates a barrier to entry and competition. This barrier may isolate incumbent firms from potential sources of competitive challenge, including entry. This limit to competitive pressure on incumbent firms in generation and supply markets may make it possible for them to increase bills or deliver poor service to their customers, without reducing their market shares. Ofgem's analysis of the domestic supply market suggests that there has not been "any material change in suppliers' market share" over the past few years.[52]

## How Secure and Promote addresses the issues

3.9. The two elements of our proposed intervention address different aspects of the barriers posed by poor liquidity.

**The Supplier Market Access (SMA) rules**

3.10. The SMA rules are targeted at facilitating entry and competition by smaller suppliers, by addressing the specific issues faced by these firms. They build on the initial voluntary commitments made by certain larger firms, which some small suppliers have found helpful. The SMA rules are intended to provide a level playing field that prevents competition from being impeded by unnecessary barriers to entry. Some barriers may remain, for example, small suppliers may still face credit barriers. However, the SMA rules ensure that each small supplier's individual circumstances are taken into account and that they have greater transparency over the credit terms offered to them.

[51] The deadweight loss is the economic value that is lost completely (rather than transferred between parties) as a result of an inefficiency. It occurs due to a change in behaviour as a result of the inefficiency – in this case firms choose not to trade, when they would have done had there been better liquidity.
[52] Ofgem (2013), 'The Retail Market Review – Final domestic proposals", 27 March 2013, Reference: 40/13, paragraph 1.29.

3.11. The SMA rules should make it easier for small suppliers to trade. This should mitigate the barriers to competition highlighted above. Initially, the SMA rules allow small suppliers to conclude trading and credit agreements with a number of larger firms in a timely manner. The SMA rules then allow small suppliers to buy or sell a range of forward electricity products, in small clip sizes, and at fair prices. The SMA rules also provide small suppliers with greater transparency over the terms they are offered. These rules can provide a small supplier with the ability to enter the market and grow into a substantial challenger to incumbent players.

**Market making obligation**

3.12. While the SMA rules are a targeted intervention for a particular group of firms, our proposals on market making are designed to improve liquidity in the market more generally. They ensure that it provides the products and price signals that all market participants need, including proposed S&P licensees.

3.13. The aim of market making is to provide firms with daily opportunities to trade forward products. As prices are posted along the curve, market making immediately provides opportunities to trade, while the tighter spread directly delivers a clearer view of the price. Market making therefore helps to improve both price discovery and product availability, and is a direct way to deliver the features of a liquid market set out in chapter one. The volume of trading under the market maker could vary, but it should remove poor liquidity as a barrier to entry and competition.

3.14. Market making is one of the more common approaches taken to improving liquidity in a commercial context and is a feature of the most liquid power markets in Europe.[53] It is also used beyond power markets – for example a survey article notes the frequent use and resulting benefits of market making in equity markets.[54] Market makers should help to build durable confidence in liquidity, which should encourage firms to participate in the market. Market making may therefore have a self-reinforcing impact on liquidity.

3.15. Our two proposals have different objectives, but are complementary – for example, if the market maker provides greater confidence in the market price, this should help suppliers access accurate prices through the SMA process. In addition, while the SMA rules give an entrant a foothold in the market, the market maker obligation will ensure that it is able to meet its wholesale needs in the long-run, as it continues to grow.

[53] Nordpool and Germany.
[54] "Most markets around the world employ market makers with affirmative obligations... Every one of the empirical papers on the subject concludes that the affirmative obligations improve market quality." D. Weaver, (2012) 'Minimum obligations of market makers', Foresight, Government Office for Science, Economic Impact Assessment EIA8, p17.

3.16. S&P is also complementary to Ofgem's Retail Market Review (RMR), which seeks to make the energy retail markets simpler, clearer and fairer for consumers. By doing this, RMR aims to improve consumer engagement with the energy market. S&P supports this by ensuring that suppliers can access the products they need in order to compete for consumers who will be more engaged with the market. Fluctuations in market shares as a result of more engaged consumers may also lead to additional trading and therefore support improvements in liquidity.

## Other impacts on competition

### Impact on competition between platforms

3.17. S&P does not mandate the use of a particular platform. We consider that it is more appropriate for market participants to select the platforms that best meet their needs. We also recognise that there are benefits from competition between trading platforms; competition should help to provide downward pressure on platform fees, incentivise improved service to market participants, and encourage platforms to develop new products.

3.18. Our proposals for market making include a rule to ensure that market making occurs on a platform that is accessible. We think that this rule is needed to ensure that S&P cannot be undermined by firms market making on platforms where there will be little engagement with the rest of the market. In response to feedback, we have redesigned the rule to frame it as a backstop – this should help to avoid distorting competition between platforms.[55]

### Impact on S&P licensees

3.19. We are only proposing to place the S&P licence condition on certain firms.[56] S&P licensees will incur costs which their competitors will avoid. This could affect the relative competitiveness of firms with and without the S&P licence condition. We note that the cost of S&P (see chapter five) is small given the overall scale of the proposed S&P licensees' businesses, and therefore is likely to have an insignificant impact on their competitiveness. In relation to market making, S&P licensees will not only incur costs, as they should also benefit from increased liquidity allowing them to compete more effectively.

3.20. Each of the six firms required to meet both the SMA rules and the market making obligation is likely to trade a similar amount, as they all face the same

[55] Chapter four of the statutory consultation provides more information about our final design for the market making obligation.
[56] We explain the rationale for this decision in chapter two of the June consultation document. (Ofgem (2013), 'Wholesale power market liquidity: final proposals for a 'Secure and Promote' licence condition', Reference 88/13, 12 June 2013).

requirements. However, these firms differ in size. It has been suggested that smaller S&P licensees will therefore bear a larger burden. We can give an indication of this by dividing the estimated ongoing cost by the total volume generated and supplied by these firms.[57] For the majority of these six firms, the total volumes are fairly similar. However, under this approach, the cost per unit would be nearly double for the smallest firm compared to the median-sized firm. This difference is still only around 20 pence per year for a typical domestic customer bill – it may therefore not be sufficient to exert a material influence on firms' relative competitiveness. S&P licensees will also have some ability to control the costs they incur by operating efficiently.

**Impact on other firms in the market**

3.21. As discussed above, S&P should deliver substantial benefits for other firms in the market, as a result of greater liquidity. Small suppliers should receive particular benefits, given that the SMA rules target their specific needs.

3.22. S&P could in theory limit the willingness of firms outside the obligation to grow and compete, due to the risk of becoming subject to the S&P licence condition. We do not consider that it is likely to be a major consideration, as our analysis of the costs of S&P indicates that these are not very large. In particular, the cost to a generator of becoming subject to the SMA rules is quite low. Introducing the S&P obligation for further licensees would also depend on a full analysis of the costs and benefits of doing so.[58]

3.23. The threshold for access to the SMA rules could also discourage small suppliers from growing beyond 5TWh, or expanding their own generation.[59] However, by the time a firm exceeds the threshold it will already need to buy some power outside the SMA framework. Parts of the SMA rules, such as small clip sizes, may also be less relevant for a supplier above the threshold. We do not believe that firms will avoid growing above the eligibility threshold, bearing in mind the normal commercial incentives to expand their businesses.

**Cross-border impact**

3.24. We would expect that the main impacts of S&P would be on the GB market, rather than cross-border. This is because the primary importance of liquidity is for firms generating and supplying electricity in GB. However, we consider that S&P is consistent with Ofgem's duty under the Third Package[60] to promote the integrated European energy market – improved opportunities to trade in the GB market should help those wanting to trade cross-border.

[57] Using information from the 2012 Consolidated Segmental Statements.
[58] Chapter one of the draft guidance published alongside this IA provides more information about our approach to placing the obligation on additional firms.
[59] Chapter three of the June consultation explains the rationale for including a threshold.
[60] Directive 2009/73/EC (Gas Directive) and Directive 2009/72/EC (Electricity Directive).

# 4. Impact on sustainable development

**Chapter Summary**

We evaluate the impact on sustainable development of our Secure and Promote proposals, by reference to Ofgem's sustainable development themes.

**Question 4: Do you agree with our evaluation of the impact of our Secure and Promote proposals on sustainable development?**

4.1. Ofgem has five sustainable development themes.[61] This chapter considers the impact of S&P on three of these themes. We do not believe there are any impacts on energy saving or wider environmental improvements, so these particular themes are not discussed further. We also note that we do not expect S&P to have any impact on health and safety.

## Managing the transition to a low carbon economy

### Electricity Market Reform

4.2. The government has set out a programme for Electricity Market Reform in the Energy Bill. One element of this package is the introduction of Feed-in Tariffs with Contracts for Difference (CfD) to support investment in low-carbon generation. A CfD provides a generator with revenue certainty by paying the difference between the market price for electricity (the reference price) and a fixed strike price. A source for the reference price must therefore be selected.

4.3. For baseload generation, the Department of Energy and Climate Change (DECC) have indicated that the reference price should be taken from a forward market. This will initially be season-ahead, moving to year-ahead when liquidity permits.[62] DECC have also stated that the market used should be transparent, reliable and liquid[63], and the importance of liquidity for the CfDs is widely acknowledged. The market making obligation, which aims to improve the robustness of forward prices, may help the market to provide the CfD reference price.[64] A liquid reference price for the baseload CfD should

[61] Ofgem (2012), 'Sustainable Development Focus 2011-12', Reference: 86/2012, p5.
[62] DECC (2013), 'Electricity Market Reform – Contract for Difference: Contract and Allocation Overview', August 2013, paragraph 4.32.
[63] DECC (2012), 'Annex A. Feed-in Tariff with Contracts for Difference: Operational Framework', November 2012, paragraphs 180 and 184.
[64] The added value of market making for the CfD reference price will vary depending on the current level of liquidity in the product(s) used.

increase investor confidence in the returns available and therefore encourage investment in baseload low carbon generation.

4.4. For intermittent generation, DECC have indicated that the reference price should be taken from the day-ahead 'GB hub'.[65] S&P does not include intervention in the near-term market, so our proposals do not directly affect this reference market. However, by improving liquidity in forward products, our proposals may make the GB power market more attractive to a range of market participants, including aggregators and other intermediaries.[66] These firms may be able to provide trading services to intermittent renewable generators. Increased competition in the supply market may also increase the range of potential offtakers. There may therefore be an indirect benefit from our proposals on investment in intermittent low carbon generation.

## Eradicating fuel poverty and protecting vulnerable customers

4.5. When considering the impact on vulnerable customers, the same considerations apply as when considering the impact on consumers in general (see chapter two). The impact of any benefits of S&P may be more significant for lower income customers, as energy bills are a higher proportion of their incomes. However, the same is also true in relation to any costs of S&P. While there are a wide variety of factors affecting energy prices and consumer bills, ensuring that there is effective competition is one way to ensure these consumers get the best possible deal.

4.6. Benefits from increased competition in the energy supply market may differ between types of consumers, depending on their level of engagement in the market. Earlier work by Ofgem has shown that vulnerable customers may be less likely to switch suppliers.[67] However, reforms under Ofgem's RMR will look to make it easier for all consumers to make better choices about their energy supplies. In addition, the benefits from increased competition may flow to disengaged consumers as well as to active consumers, as suppliers may have to improve their offers in order to retain customers. Any benefits from increased competition in the generation market may also apply to consumers that do not switch supplier.

## Ensuring a secure and reliable gas and electricity supply

4.7. To deliver a secure electricity supply to consumers, it is important to ensure that there is sufficient generation capacity. The need for up to £200bn of new

[65] DECC (2012), 'Annex A. Feed-in Tariff with Contracts for Difference: Operational Framework', November 2012, paragraphs 176-177.
[66] One aggregator has suggested to us that it is important to have a full range of liquid products, in order to make trading the power market sufficiently attractive to encourage entry.
[67] Ofgem (2011), 'The Retail Market Review – Findings and initial proposals', 21 March 2011, Reference: 34/11, paragraph 2.67.

investment in the GB energy sector was first identified by Ofgem in Project Discovery.[68] The importance of investment in generation has since been highlighted through Ofgem's Capacity Assessments, most recently in 2013.[69] In this context, policies which facilitate investment in generation may assume more importance. It is notable that liquidity has been a strong concern from many independent generators, who are one source of new generation projects.

4.8. Better liquidity may help to improve the climate for investment in generation in two ways. The market making obligation under S&P will provide confidence of a certain level of liquidity into the future, covering longer-dated and peak products. This will help to reassure generators that they will have a route to market to sell their output. This may help a project to obtain finance by reducing its perceived riskiness, hence reducing the rate of return required for the project to be viable. One potential future impact of this could be a reduction in bids into the Capacity Market (CM).[70]

4.9. Improved liquidity in forward products will also deliver price signals. These price signals will form part of the case for investment in new generation. This has been noted by the International Energy Agency, who stated that higher liquidity would "support timely and efficient investment in power generating capacity."[71] It is important not to overstate this effect: S&P will only include products two years ahead, whereas major investment decisions are made after considering expectations of prices for the next fifteen years or longer. However, it has been suggested to us that even forward market prices for a limited period may be a useful part of explaining the case for investment.[72]

4.10. These factors may also apply to some extent to existing plants. Improved liquidity could therefore help security of supply by supporting existing generation which might otherwise mothball or close. Price signals could also be useful for scheduling maintenance. This would support security of supply by enabling generators to plan their maintenance for when prices are lowest.

[68] Ofgem (2010), 'Project Discovery – Options for delivering secure and sustainable energy supplies', 3 February 2010, Reference: 16/10.
[69] Ofgem (2013), 'Electricity Capacity Assessment Report 2013', 27 June 2013, Reference: 105/13.
[70] Without a track record of completed capacity auctions, it is hard to judge the potential importance of liquidity. For example, if the marginal (price-setting) plant in the CM was running for a limited number of hours, then the generator might be less interested in forward products. It is also worth noting that the CM is only scheduled to come into effect for the winter of 2018.
[71] IEA (2012), 'Energy Policies of IEA Countries – The United Kingdom. 2012 Review', p147.
[72] Forward prices may be particularly useful when explaining an investment project to investors who have less experience of the GB power market.

# 5. Costs

**Chapter Summary**

We set out a revised view of the set-up and ongoing costs of our Secure and Promote intervention. This builds on the estimates in the draft IA. We then give an indication of the benefits which would be required to outweigh these costs.

**Question 5: Do you agree with our evaluation of the cost impacts of our Secure and Promote proposals?**

## Costs to S&P licensees: introduction

5.1. This section evaluates the costs to the S&P licensees of implementing our proposals. It builds on the estimates published in the draft IA, by considering views from stakeholders and our own further thinking. Responses from potential S&P licensees to an earlier Request for Information (RFI) were a key input to the cost estimates in the draft IA. This information was obtained in confidence, meaning that it is not attributed in the cost estimates below.

5.2. This section considers each of our proposals in turn. For both the SMA rules and market making, we look at the set-up costs, then at the ongoing annual costs of meeting the obligations. We also discuss the ongoing costs to S&P licensees of reporting on compliance with S&P. For all these areas, the costs are presented on a per licensee basis. Further information on the details of the assumptions used can be found in appendix three.

5.3. For all the costs we estimate, we have set out three cases: a low case, a high case and our best estimate of the likely costs at this stage. This reflects that there are a range of plausible assumptions, and that the costs of the intervention could vary. These cases are driven by differences in the individual assumptions, rather than being overarching scenarios. The low and high cases should be seen as our view of the reasonable boundaries for the costs – while more extreme values are possible,[73] we do not think these are likely. For the purpose of the following tables, values in each category are rounded to the nearest thousand pounds; this should not be taken as the degree of precision of the results.[74]

[73] For example if fewer small suppliers sought trading agreements under the SMA rules.
[74] Rounding also means that the totals presented may not exactly equal the sum of the different values in each category.

## Costs to S&P licensees: Supplier Market Access

### Supplier Market Access: set-up costs

5.4. It is reasonable to assume that there will be a number of applications for trading agreements as soon as the SMA rules are introduced. A S&P licensee will incur some costs in negotiating and signing trading agreements with independent suppliers, in the form of staff time, legal costs, credit checks and systems costs.

5.5. The table below presents our revised estimates of these set-up costs. These estimates are slightly lower than in the draft IA, as we have reduced the assumed cost of a trading agreement. This reflects a lower assumption for staff costs, as well as giving greater weight to cost estimates from stakeholders based on their existing costs of negotiating with small suppliers. The licensee may not only incur costs from trading agreements that are eventually signed, but also from the initial stages of negotiations which do not result in a trading agreement being signed. These costs are separated below. The cost differences between the cases are primarily driven by different assumptions over the levels of take-up by eligible small suppliers. Costs therefore increase in proportion to the benefits.

**Figure 1: Estimated set-up costs of Supplier Market Access**

| | Low case | Best estimate | High case |
|---|---|---|---|
| *New trading agreements* | *£80,000* | £175,000 | *£300,000* |
| *Initial negotiations where agreement is not reached* | *£16,000* | £35,000 | *£60,000* |
| ***Total set-up cost per S&P licensee*** | *£96,000* | **£210,000** | *£360,000* |

### Supplier Market Access: ongoing costs

5.6. On an ongoing basis, costs will arise from continued demand for trading agreements from small suppliers. Once trading agreements are in place, staff time will be needed to trade with small suppliers and to manage trading agreements. By trading with small suppliers, firms may expose themselves to some additional credit costs. The table below shows our cost evaluation. As with the set-up costs, each case includes an assumption about the associated benefits. Higher costs indicate higher take-up, and therefore higher benefits.

**Figure 2: Estimated ongoing costs of Supplier Market Access**

| | Low case | Best estimate | High case |
|---|---|---|---|
| *New trading agreements* | *£20,000* | £50,000 | *£120,000* |
| *Initial negotiations where agreement is not reached* | *£4,000* | £10,000 | *£24,000* |
| *Staff costs* | *£60,000* | £85,000 | *£140,000* |
| *Credit costs* | *£94,000* | £312,000 | *£779,000* |
| ***Total annual cost per S&P licensee*** | *£178,000* | **£457,000** | *£1,063,000* |

5.7. Detailed information about the assumptions used can be found in appendix three, but we highlight a couple of key points below:

- **Credit costs** – The credit cost is not based on Ofgem forcing S&P licensees to offer particular credit terms. S&P licensees are expected to exercise judgement about the risks of extending credit to any particular firm in the normal way. The credit figure in the table above is merely to acknowledge the potential credit costs from trading with smaller counterparties. The credit cost in this version is higher than in the draft IA; this is because we have quantified the credit costs between delivery and payment.

- **Unhedged positions** – In the draft IA, we included an unquantified line for the cost to licensees of any unhedged positions that develop as a result of trading small clip sizes.[75] We have now amended the policy design to allow S&P licensees to charge for this, meaning that it is no longer a potential cost to the licensee.[76]

## Costs to S&P licensees: market making

### Market making: set-up costs

5.8. The S&P licensee is likely to incur some set-up costs to prepare for market making. These should be manageable, given that market making is not a new

[75] A firm that trades a small clip may have to hold this position until it has made a number of similar trades, at which point it can trade in the market. While the position is open, the firm is exposed to the risk of price changes.
[76] The size of this cost should be small, meaning that it should not affect take-up by small suppliers.

concept. There may be some costs to ensure that IT systems are able to provide up to date information on the firm's position and credit exposures. The S&P licensee may also incur some legal costs, for example to agree reduced trading fees with a platform. With the data available to us, it was not possible to itemise the cost figures below, especially because some RFI respondents provided their cost estimates on an all-in basis.

**Figure 3: Estimated set-up costs from market-making**

| | Low case | Best estimate | High case |
|---|---|---|---|
| ***Total set-up cost per S&P licensee*** | *£100,000* | **£200,000** | *£400,000* |

**Market making: ongoing costs**

5.9. Market making is a more significant intervention than the SMA rules in terms of ongoing cost. S&P licensees will need staff to carry out market making, both in direct trading roles and support functions. As firms will be trading on external platforms, they will incur transaction fees on trades they would not otherwise have carried out. Firms will also face costs related to the positions that develop as a result of their market making activities. The table below provides our cost estimates.

**Figure 4: Estimated ongoing costs of market making**

| | Low case | Best estimate | High case |
|---|---|---|---|
| *Staff costs* | *£80,000* | £220,000 | *£220,000* |
| *Transaction fees* | *£50,000* | £550,000 | *£1,100,000* |
| *Cost of open positions* | *£750,000* | £750,000 | *£1,500,000* |
| *Costs from managing credit exposures* | *£89,000* | £928,000 | *£2,024,000* |
| ***Total annual cost per S&P licensee*** | *£969,000* | **£2,448,000** | *£4,844,000* |

5.10. The assumptions for our best estimate would imply a total volume of 330TWh traded through market makers, roughly equal in volume to total GB generation. It can therefore be seen that these costs assume a significant increase in liquidity. Benefits for consumers should increase in proportion to this. While the costs for market makers will increase with the volume traded,

it is worth noting that any income earned by the S&P licensees through the bid-offer spread would also grow as the volume increased.

5.11. Detailed information about the assumptions used can be found in appendix three, but we highlight a few key points below:

- **Cost of open positions** - In response to the draft IA, several firms claimed that it would be unreasonable to hold a position open for any length of time, and that they would therefore seek to go immediately back into the market to exit the positions. For example, if a market maker sold a product, they would buy at the next best offer price. The cost of this approach would be the difference between the two prices at which the firm trades. This strategy seems potentially expensive; under the best estimate case, and assuming that the difference between the prices at which the firm trades at is 5p/MWh,[77] the cost of managing the position would be £2.75m per year, rather than the £750,000 per year in the table. This is before considering the other costs from actively closing out positions: additional transaction costs, and, if the licensee is managing credit bilaterally, the cost of creating two different credit exposures.

  Due to the cost, we do not believe that this is the strategy that S&P licensees would use. Instead, we think that a S&P licensee with an open position will wait for firms to trade in the opposite direction (at the price posted by the licensee). In this way trades in opposite directions will net off, allowing the S&P licensee to capture (part of)[78] the bid-offer spread. When a firm has open positions it will incur the risk that the price changes in the meantime – the cost associated with this will arise from holding an amount of risk capital.[79]

- **Managing credit exposures –** The cost of credit was recognised, but not quantified, in the draft IA. We would not expect the market maker to hold open positions for a long period, which may limit the credit exposure. On an exchange, trades in opposite directions will net completely, leaving no credit exposure. We use this as the low case. However, bearing in mind current practice in the wholesale market, it is quite likely that S&P licensees will market make on an OTC platform. In this case, credit exposures are bilateral, and do not cancel each other out, unless the buy and sell trades are with the

[77] In the draft IA, we used an illustrative figure of 10p/MWh for this difference. Given the move to windows, it seems reasonable to reduce this figure to reflect that other market makers will be active at the same time.
[78] A firm might only recover a proportion of the spread because as it has traded, it is likely to have been displaying the best price in the market in a particular direction. Given this, the price that it was displaying in the other direction was probably unattractive, and would therefore be less likely to be traded. The price may also change somewhat after the trade or while the position is open - the market maker may need to adjust its prices to reflect this.
[79] Another description of this would be that the market maker faces a cost on any inventory that it is holding, reflecting the potential for changes in the value of that inventory.

same counterparty. This is the key reason why credit exposures are larger in the best estimate and high case.

- **Costs from mispricing –** In the draft IA, we included a cost from mispricing to reflect that a firm will not always make the correct decisions when setting its bid and offer prices.[80] (It is worth noting that a market maker will only make a loss from mispricing if, for a pair of trades, it ends up buying at a higher price than it sells. This should not happen very often). We did not quantify this cost, but we noted that it would be offset by the profit on the spread that the market maker will receive at other times. Following further thought[81], we now have increased confidence that this will be the case, and therefore do not propose to include this as a cost line.[82]

- **European financial legislation –**If market making brought an S&P licensee within the scope of European financial legislation[83] when they would otherwise have been outside, the S&P licensee could face the cost of having to clear derivatives trades across Europe. (We do however note that the EMIR clearing obligation will only be activated for non-financial firms in a few years). Given the importance of this issue, we intend to review the obligation at an appropriate point in the future to check that it remains proportionate.[84] The S&P licensee would also have the option of contracting out the delivery of its obligation to a third party, who might already be covered by this legislation, and so would not face this entire cost. In this case, the S&P licensee might still face some costs to remunerate the third party.[85]

## Costs to S&P licensees: reporting

5.12. Firms will need to produce reports to show they are compliant with S&P. Obtaining data and preparing reports will require staff time; initial estimates of the cost of this are given below. From information we received, we anticipate that most of this cost would be incurred in relation to market

[80] This would always be expected – if not, this would be equivalent to suggesting that the market maker had better knowledge than everyone else in the market.
One reason for the existence of a bid-offer spread is to recognise this potential information imbalance (adverse selection). (L.R. Glosten and P.R. Milgrom, (1985), 'Bid, ask and transaction prices in a specialist market with heterogeneously informed traders', *Journal of Financial Economics*, 14, pp71-100).
[81] For example, taking a conservative assumption about mispricing (mispricing 5% of the time by 50p/MWh), the expected loss would be 2.5p/MWh. On a pair of trades (buy and sell), the cost would therefore be 5p/MWh. The tightest mandated spread would equate to just over 25p/MWh – even allowing for only recovering a proportion of the spread, it can be seen that these two features are likely to cancel each other out.
[82] There are also some features of the revised design (eg fast market rules) which may help to limit the risk of mispricing in extreme scenarios.
[83] Either by exceeding the EMIR clearing threshold, or by becoming a MiFID investment firm.
[84] See chapter four of the statutory consultation for further information.
[85] At this stage, we do not have a sufficient sense of what fees a third party might charge for this service to include an estimate.

making, and so have not included in our estimates any assumed cost for firms only obligated to comply with the SMA rules.[86]

**Figure 5: Estimated ongoing costs of reporting**

| | Low case | Best estimate | High case |
|---|---|---|---|
| ***Total annual cost per obligated firm*** | *£30,000* | **£60,000** | *£90,000* |

## Costs to S&P licensees: conclusion

5.13. For the purpose of clarity, the table below summarises the cost of each element of our S&P proposals. This is presented for a S&P licensee that is required to comply with the SMA rules and the market making obligation. (S&P licensees required solely to meet the SMA rules will only face those costs). The costs incurred may differ between firms, as licensees have some control over how efficiently they carry out the activities.

**Figure 6: Summary of estimated costs of meeting the S&P obligations**

| | Low case | Best estimate | High case |
|---|---|---|---|
| ***Set-up costs*** | | | |
| *Supplier Market Access* | *£96,000* | £210,000 | *£360,000* |
| *Market making* | *£100,000* | £200,000 | *£400,000* |
| ***Total set-up cost per obligated firm*** | *£196,000* | **£410,000** | *£760,000* |
| ***Ongoing cost*** | | | |
| *Supplier Market Access* | *£178,000* | £457,000 | *£1,063,000* |
| *Market making* | *£969,000* | £2,448,000 | *£4,844,000* |
| *Reporting* | *£30,000* | £60,000 | *£90,000* |
| ***Total annual cost per obligated firm*** | *£1,176,000* | **£2,965,000** | *£5,997,000* |

[86] There may be some reporting costs for these firms – but we expect these to be negligible.

5.14. The table below turns these costs for individual firms into a total cost across all S&P licensees. (These numbers reflect that six firms would be obliged to comply with the entire S&P licence condition, with two additional firms only required to meet the SMA rules).

**Figure 7: Estimated total costs of S&P across all S&P licensees**

| | Low case | Best estimate | High case |
|---|---|---|---|
| ***Total set-up cost – overall*** | *£1,368,000* | **£2,880,000** | *£5,280,000* |
| ***Total annual cost - overall*** | *£7,414,000* | **£18,704,000** | *£38,106,000* |

5.15. To give an idea of the scale of these costs, we can present the ongoing costs on a per unit supplied basis. Using consumption in GB in 2012,[87] the cost of S&P would be between 2p/MWh and 12p/MWh, with a best estimate of 6p/MWh. Therefore, according to our best estimate, the cost of S&P would be 19 pence per year[88] for an average domestic customer bill.[89]

## Comparing costs to benefits

5.16. It is difficult to quantify the benefits of this intervention. The approach that we therefore adopt is 'break-even analysis'. This involves taking the costs, for which we have reasonable figures, and then looking at the size of benefits that would be needed to exceed these costs. This approach is mentioned in the Ofgem guidance on impact assessments.[90]

5.17. As noted in chapter three, increased liquidity should remove a barrier to entry and allow increased competition. As firms compete, they will look for ways to make their prices more competitive, exerting downward pressure on the prices paid by consumers. These may include reducing their profit margins, or reducing their operational costs.

5.18. Our data sources are the 2012 Segmental Statements published by each of the six large vertically integrated firms. These are a useful source as they give information about the costs and profits for the licensed generation and supply

[87] Final consumption was 318 TWh. (DECC (2013), 'Digest of United Kingdom Energy Statistics', p113).
[88] The equivalent figures in the draft IA were 4p/MWh and 15p per year.
[89] Consuming 3,200kWh per year. (Figure for single rate meters (Profile Class 1) in Ofgem (2013), 'Decision: New Typical domestic consumption values', 13 September 2013, p2).
[90] Ofgem (2013), 'Impact Assessment Guidance', 1 October 2013, paragraph 3.30.

segments of the businesses. (These six firms do not constitute the entire market,[91] so the subsequent figures will slightly overstate the size of the benefits required to outweigh the costs). Recalling from above that our best estimate of the annual ongoing cost of S&P was around £19m, we now compare this figure to operational costs and profits from the 2012 Segmental Statements. The figures for comparison are the totals across generation, domestic electricity supply and non-domestic electricity supply.

**Figure 8: Break-even analysis based on 2012 Segmental Statements**

| | Operational costs[92] | Profits[93] |
|---|---|---|
| Generation | £1,549.9m | £1,951.2m |
| Domestic electricity supply | £1,860.4m | £247.1m |
| Non-domestic electricity supply | £661.3m | £227.2m |
| **Total** | **£4,071.6m** | **£2,425.5m** |
| **Reduction needed to cover ongoing cost** | **0.5%** | **or 0.8%** |

5.19. These figures show that the break-even reduction in operational costs needed to deliver benefits equal to the ongoing costs of S&P would be 0.5%.[94] For profits, the respective reduction is 0.8%.[95] A combination of smaller reductions in both operational costs and profits could also deliver sufficient benefits to cover the ongoing costs. The break-even changes required are therefore very small in relation to the overall size of operational costs and

[91] The 2012 market share of the six firms covered by the Segmental Statements was 74% for generation, 98% for domestic electricity supply, and 92% for non-domestic electricity supply. (Ofgem (2013), 'Ofgem 2013 National Report to the European Commission', pp50, 59-60).
[92] Called 'indirect costs' in the Segmental Statements.
[93] Earnings before Interest and Tax deducted (EBIT).
[94] A couple of purely illustrative examples suggest that this may not be a challenging expectation. When evaluating the potential gains from market making, the New Zealand Electricity Authority modelled the effect of stronger retail competition using a reduction in retail operating costs of 0.25% to 0.75% of energy costs, equivalent to a 1% to 3% reduction in retail operating costs. (New Zealand Electricity Authority (2011), 'Cost benefit-analysis – market-making obligations', 21 November 2011, p9). A larger figure was used by the Water Industry Commission for Scotland, who suggested that the dynamic efficiencies from retail competition in the water business could be 1% per year, which they argued was a 'conservative assumption'. (Water Industry Commission for Scotland (2011), 'Retail competition in Scotland – An audit trail of the costs involved and the savings achieved', April 2011, p12).
[95] This figure is larger than in the draft IA – partly as a result of the estimated higher ongoing cost, but also because total profits were lower in 2012 than in 2011. (The draft IA used data from the 2011 Segmental Statements).

profits.[96] This remains the case for the high case, where the break-even figures would be a reduction of 0.9% (operational costs) or 1.6% (profits). The low case figures are much smaller; 0.2% and 0.3% respectively.

5.20. It therefore seems reasonable to consider that, if S&P results in increased competition, it could produce benefits (through reductions in margins, in operational costs, or in combinations of the two) which could clearly exceed the costs of S&P. Reductions in margins or operational costs will occur as firms seek to respond to competitive pressure by trying to find ways to make a better offer to consumers. This means that these benefits should flow through to consumers. Despite the difficulties of quantifying the benefits of this measure, we therefore conclude that the cost-benefit case for S&P is likely to be positive, because the required break-even threshold is so low.

## Costs to others

### Costs to other market participants

5.21. S&P only places requirements on the S&P licensees. Other firms would be free to choose whether or not to make use of the opportunities to trade provided by the SMA rules and market making obligation. Due to this, we have not identified any cost impacts for other firms.

### Costs to Ofgem

5.22. Implementing and monitoring Secure and Promote will require Ofgem resources, and could therefore have cost implications. We have not quantified these costs. This is because monitoring the functioning of the electricity wholesale market is a core part of our role which would continue in any case. For example, we have a duty under the Third Package to monitor "the level and effectiveness of market opening and competition at wholesale and retail levels".[97]

5.23. There could also be costs from enforcing S&P. It is difficult to estimate the size of these costs, as this will depend on factors such as the level of compliance by obligated firms, and the scale of any breaches. By aiming to design rules which are clear (and by providing guidance), we aim to reduce the likelihood of protracted and expensive enforcement processes.

[96] We are not setting out a view on the appropriate size for profits and operational costs.
[97] Directive 2009/72/EC (Electricity Directive), article 37 (1)(j).

# 6. Risks and unintended consequences

**Chapter Summary**

We evaluate the key risks in relation to our Secure and Promote proposals, and consider the potential for unintended consequences. We also set out mitigations for the risks and unintended consequences identified.

**Question 6: Do you agree with our evaluation of the risks and unintended consequences of our Secure and Promote proposals?**

6.1. In this section, we consider the key risks in relation to our proposals, and explain how we are seeking to mitigate them. These are separated into:

- **Effectiveness risks** – risks that benefits will not be delivered
- **Unintended consequences** – risks that distortions will be created
- **Delivery risks** – risks related to the operation of S&P

## Effectiveness risks

### Supplier Market Access rules may remove volumes from the market

6.2. The SMA rules could be met by firms trading with small suppliers through a market platform (such as a broker platform). However, they could also be fulfilled through bilateral deals conducted separately.[98] In this latter case, these volumes would not be contributing to price discovery or wider product availability. However, this impact may be limited, given that only small suppliers are eligible for the SMA rules, and these firms are responsible for a small subset of wholesale market trading.[99] Given the potential benefits of ensuring market access for small suppliers, any very small reduction in the volumes traded on market platforms may be worthwhile.

### Accessibility for smaller firms may remain constrained

6.3. Despite the implementation of our S&P intervention, smaller firms might still face barriers when attempting to trade. For example, credit may continue to

[98] For example, a S&P licensee might only want to sell products in small clip sizes to small suppliers (as obliged to by the SMA rules) and not to other firms.
[99] Our best estimate of the volume traded under the SMA rules is 1TWh per S&P licensee, giving a total of 8TWh. Even assuming this entire volume was traded away from market platforms, this would be less than a 1% reduction in traded volumes.

limit the extent to which smaller firms can access the market. This may be entirely appropriate, and we recognise that credit plays an important role in ensuring the stability of the energy market. The aim of the SMA rules is simply to remove unjustifiable barriers to market access for smaller players. Firms will consider the overall state of the market when deciding whether to enter.[100]

**Market making has limited effect on volumes**

6.4. Another perceived risk might be that market making does not lead to a large increase in traded volumes, as the intervention does not fix a particular target volume. However, this is not the aim of S&P. As long as market making provides opportunities to trade at narrow spreads, liquidity would no longer be presenting a barrier to entry, and so the intervention would still have achieved its goal. As noted in chapter five, the costs incurred are largely proportional to the volume traded, so the cost impact would also be lower in this case (and therefore would remain proportional to the benefits).

## Unintended consequences

**Risk of distortion to market prices**

6.5. The effectiveness of the price discovery process resulting from market making depends on whether a S&P licensee has an incentive to post prices that correctly reflect its view of the market price. It has been suggested that obligated firms may consider factors beyond their view of the market price when posting their bid and offer prices. For example, a market maker may aim to set its spread at a price which allows it to unwind a position that it has built up. A market maker could also consider the spreads set by other firms – it has been suggested that firms will try to reduce their exposure by setting the same prices as the other S&P licensees.

6.6. We do not see a strong argument that market making will distort prices. The restriction on the bid-offer spread will help to ensure that the prices firms post are close to their views of the correct market price. The fact that there are multiple market makers will also provide competitive discipline on pricing, as it opens up the possibility of arbitrage between them. While market makers will pay attention to other prices in the market (including those set by other market makers), as well as the number of parties buying and selling, this is a natural part of any market, as firms respond to price signals. Commercial market making arrangements are also already used in several other markets.

[100] Small suppliers will themselves incur costs from negotiating trading agreements, so they should only start negotiations under the SMA rules if they think there is a realistic prospect of being able to enter the market.

**Intervention may crowd out commercial activities**

6.7. By making certain firms carry out tasks under S&P, regulatory intervention may reduce the chance for these services to be provided on a commercial basis. The SMA rules may be seen as reducing the potential for intermediaries to provide market access services to smaller players, which could leave smaller players with fewer options for how to buy and sell power. However, there would still be room for intermediaries to provide a more bespoke service than is available through the SMA rules, such as a wider product range.

6.8. Market making might also reduce the potential for commercial market making agreements. However, as above, commercial market makers could seek to provide an improved service, through narrower spreads or greater availability. Market making has also not played much of a role in GB power to date, so crowding out may be limited. Our proposals allow S&P licensees to contract out the delivery of this requirement to a third party. If the third party was able to provide the service at a lower cost than the licensee, then this would ensure that market making is delivered in the most efficient way possible.

**Risk of decreasing liquidity outside trading windows**

6.9. Increasing activity in trading windows will make them more attractive for trading. This could create a risk that existing activity in other periods moves into the windows. We do not consider that this is a significant risk – firms will still look to trade at other times based on their needs. In addition, our proposal for two trading windows per day ensures that firms will see narrow spreads every morning and afternoon.

**Perception of greater regulatory risk**

6.10. As a new requirement, S&P expands the scope of regulation in the GB power market. This could influence the perceptions of potential investors about the regulatory stability of the market, for example if it is seen as increasing the chances of further intervention in future. We are not proposing intervention lightly – we have frequently indicated our preference for industry-led action to achieve our liquidity objectives, and have given plenty of time for this to take place. However, given that our liquidity objectives remain unmet, we are convinced that intervention is now warranted.

## Delivery risks

**Compliance risk for S&P licensees**

6.11. The introduction of a new licence condition creates compliance risks for S&P licensees. Failure to meet the requirements will lead to them being in breach of their licences and potentially liable for financial penalties. By designing S&P so that the rules are clear, we aim to make it easier for S&P licensees to

understand what is required, which should minimise the risk of accidental breaches of the licence condition. We have also responded to feedback in some areas (for example the acknowledgement of a request for a trading agreement under the SMA rules) to ensure that the rules are not unduly likely to trigger breaches. Another source of protection for the S&P licensees should be the assurance that we will follow our usual enforcement guidelines[101] when deciding whether to take action.[102]

**Uncertainty over European financial legislation**

6.12. Changes to European financial legislation are ongoing, and will not be completed by the time of a decision on whether to introduce S&P. It may therefore be difficult to have a full understanding of the likely impacts of European financial legislation on market making. In the previous design we included the possibility for S&P licensees to contract out the delivery of their market making obligation to a third party, who could already be within the scope of financial legislation. In addition, we are now indicating that we intend to review the situation once there is sufficient clarity on the future of European financial legislation.[103] This will give us an opportunity to ensure that S&P continues to be appropriate.

## Risks removed from this section

6.13. The draft IA included two further risks, which have now been removed:

- Under effectiveness risks, we mentioned the possibility that **market makers might not always be present**.[104] We are now proposing that S&P licensees will have to market make in defined windows every day. This effectively removes this risk, as it guarantees regular availability.

- Under unintended consequences, we noted that **firms could obtain supply licences just to be eligible for the SMA rules**. In the draft IA we suggested that this was unlikely. On reflection, and especially given the thresholds for access to the SMA rules, we now consider that this risk is sufficiently unlikely that it should be removed from this section.

[101] Ofgem (2012), 'Enforcement Guidelines on Complaints and Investigations', 28 June 2012, Reference: 82/12.
[102] We discuss this in more detail in chapter one of the draft guidance.
[103] See chapter four of the statutory consultation for more information on this point.
[104] In the draft IA, we noted that having six market makers would help to reduce this risk.

# 7. Post-implementation review

7.1. Following the introduction of S&P, we will monitor the progress of liquidity and assess the impact of our intervention. Our plan for post-implementation review can be split into two areas: ongoing monitoring and in-depth review.

**Ongoing monitoring**

7.2. We will continue to monitor the state of liquidity in the market through our usual range of liquidity metrics. In addition, we will receive information through licensees' reporting obligations under S&P. We will also continue to seek qualitative feedback from market participants on liquidity. We anticipate summarising the results of our ongoing monitoring as an annual assessment of the market, though we may also produce more frequent reports.

7.3. We will also continually review the functioning of S&P. This will enable us to monitor compliance with the S&P licence condition, and to ensure the rules are effective. Where issues are identified, we will provide clarification by amending guidance after consultation, or make changes by modifying licence conditions following the usual statutory process.

**In-depth review**

7.4. In order to provide regulatory certainty, we believe that it is valuable to set an expectation that there will be a certain period[105] before making fundamental changes to the S&P arrangements, if deemed necessary. This would allow the progress of the market to be monitored over a number of years, allowing an informed view to be developed on the impact of S&P.

7.5. After this period, we would intend to hold an in-depth review of liquidity. This would allow a broader consideration of the market. This review would look at the overall state of liquidity in the market, evaluate whether intervention is still required, and consider whether S&P remains the best option for intervention. We would expect this review to include a consultation in order to obtain the views of stakeholders.

[105] For example, three to five years. The precise timing will depend on when is most appropriate – for example, there may be interactions with any review motivated by changes to European financial legislation.

# 8. Conclusion

**Evaluation of impact**

8.1. Our evaluation suggests that liquidity is acting as a barrier to entry and competition in the generation and supply markets. Market making would address this barrier by making sure that firms have opportunities to trade a range of forward products. The SMA rules would ensure that small suppliers do not face unjustifiable barriers to obtaining electricity. These measures could facilitate greater competition in the generation and supply markets, to the ultimate benefit of consumers.

8.2. To return to our liquidity objectives:

- Objective one (availability of products to support hedging) is addressed in general by market making, which provides greater confidence about the availability of forward products, while the SMA rules deal with the particular problems faced by small suppliers.

- Objective two (robust reference prices along the curve) is delivered by market making, which ensures that prices will be posted regularly and reliably for baseload and peak products up to four seasons ahead.

- Objective three (an effective near-term market) is supported by the reporting requirements which will facilitate ongoing monitoring.

8.3. Our work suggests that the benefits from increased competition (such as those obtained through reductions in profit margins or operational costs) should be able to outweigh the costs of S&P. As competition increases, these benefits should be passed on to consumers, as firms will have greater pressure to improve their offers.

8.4. We therefore consider that the overall impact of our policy is likely to be positive, delivering benefits for consumers. This assessment therefore provides evidence in support of proceeding with S&P.

**Next steps**

8.5. We welcome comments on all aspects of this IA. We recognise that these comments may contain sensitive information, and we are happy to accept confidential submissions. Subject to any responses to this consultation and the statutory consultation, we will direct the modification to the generation licences of obligated parties to be implemented on 31 March 2014 (the date of the decision to modify the licence being at least 56 days before 31 March).

# Appendices

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# Appendix 1 - Consultation Response and Questions

1.1. Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document.

1.2. We would especially welcome responses to the specific questions which we have set out at the beginning of each chapter heading and which are replicated below.

1.3. Responses should be received by 18 December 2013 and should be sent to:

Martin Bell
Wholesale Market Performance
Ofgem
9 Millbank
London
SW1P 3GE
020 7901 7000
gb.markets@ofgem.gov.uk

1.4. Unless marked confidential, all responses will be published by placing them in Ofgem's library and on its website www.ofgem.gov.uk. Respondents may request that their response is kept confidential. Ofgem shall respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

1.5. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. Respondents are asked to put any confidential material in the appendices to their responses.

1.6. Next steps: Subject to any responses to this consultation and the statutory consultation, the Authority will direct the modification to the generation licences of obligated parties to be implemented on 31 March 2014 (the date of the decision to modify the licence being at least 56 days before 31 March). Any questions on this document should, in the first instance, be directed to Martin Bell, Graham Knowles, or Leigh Rafferty at the contact details above.

**CHAPTER: One**

**Question 1:** Do you agree with our description of the key issues and objectives for our Secure and Promote proposals?

**CHAPTER: Two**

**Question 2:** Do you agree with our evaluation of the impact of our Secure and Promote proposals on consumers?

**CHAPTER: Three**

**Question 3:** Do you agree with our evaluation of the impact of our Secure and Promote proposals on competition?

**CHAPTER: Four**

**Question 4:** Do you agree with our evaluation of the impact of our Secure and Promote proposals on sustainable development?

**CHAPTER: Five**

**Question 5:** Do you agree with our evaluation of the cost impacts of our Secure and Promote proposals?

**CHAPTER: Six**

**Question 6:** Do you agree with our evaluation of the risks and unintended consequences of our Secure and Promote proposals?

**CHAPTER: Seven**

**No questions**

**CHAPTER: Eight**

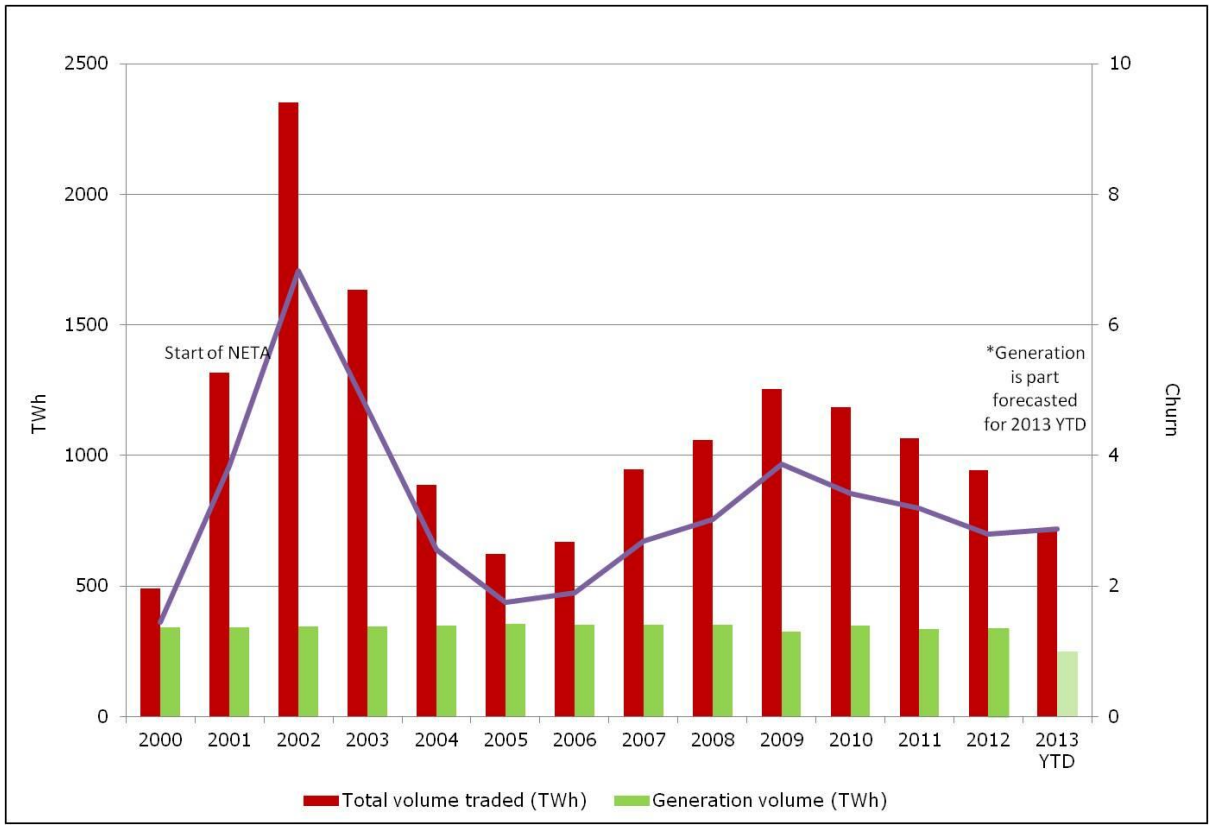
**No questions**

# Appendix 2 – Updated key liquidity metrics

## Churn

2.1. Churn measures the number of times a unit of generation is traded before it is delivered to the final customer. It is a useful high-level indicator of the overall level of liquidity in the market. Figure 9 below shows that churn has been falling in GB since 2009, although it has remained roughly flat so far in 2013. At the end of the third quarter of 2013 churn was around 2.9.

**Figure 9 – GB Annual Churn**

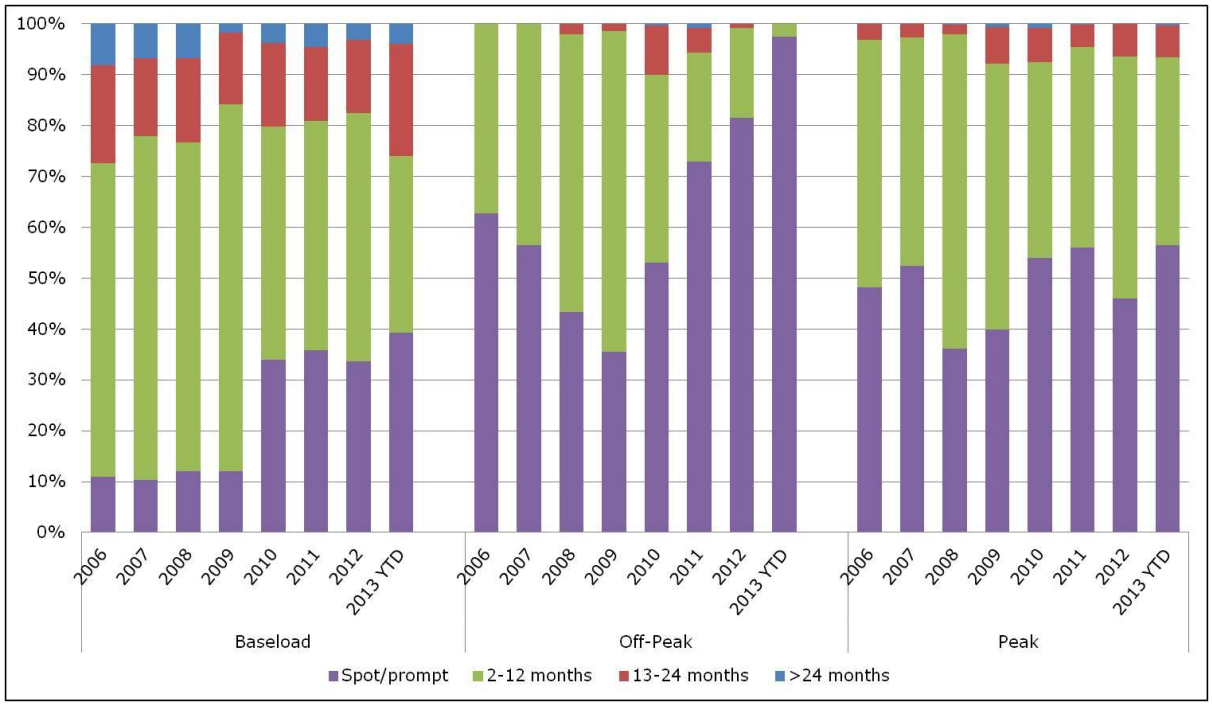



Source: ICIS Heren, APX, N2EX, ICE, DUKES

## Access to products which support hedging

2.2. One indicator of market participants' ability to hedge is the proportion of the OTC market that is traded in the months and years ahead of delivery. Figure 10 below shows that there is very little trading in peak products for delivery beyond one year out.

**Figure 10 – OTC Trading in Longer-dated Products**

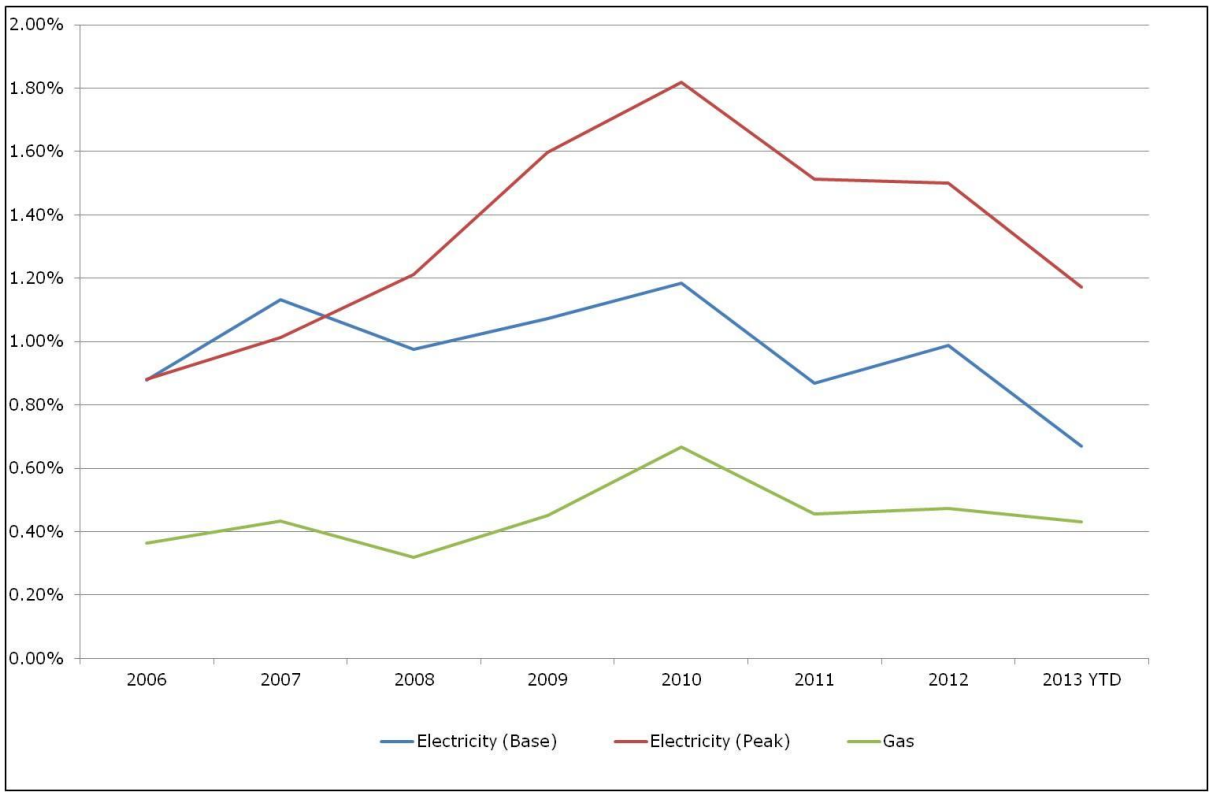



Source: ICIS Heren

## Robust reference prices

2.3. The bid-offer spread is an indicator of the degree of consensus around views of the market price. A tight spread suggests that opportunities for arbitrage are being exhausted. Our updated analysis shows that spreads have tightened along the curve for both baseload and peak products during the first three quarters of 2013 (see figure 11 below).

**Figure 11 – Bid-offer Spreads for Season+4 Products**

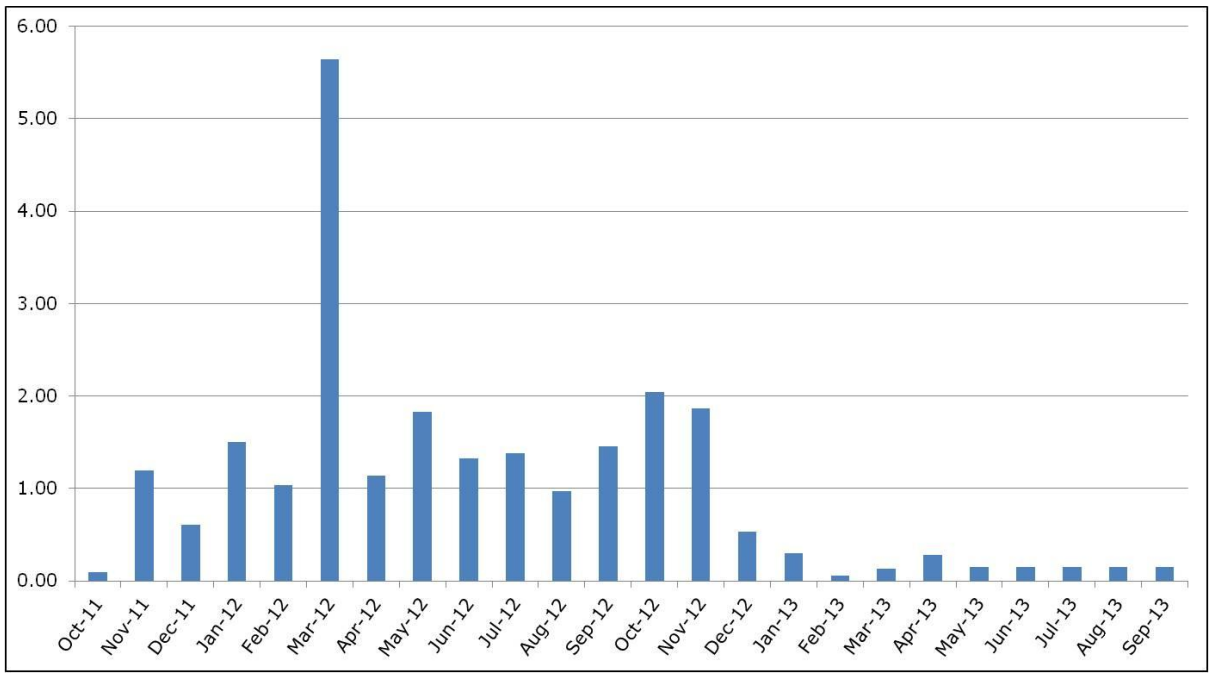



Source: ICIS Heren

## Financial products

2.4. Financial products can provide an alternative hedging tool for market participants. They do not require firms to take a physical position, which can ease access for financial players, who may increase the overall level of trading and liquidity in a market. The volume of trading in financial products continues to be very low following a promising increase in 2012. Trading in financial products made up only 0.2% of the volumes traded in the wholesale market by the third quarter of 2013.

**Figure 12 – Trading in Financial Products**

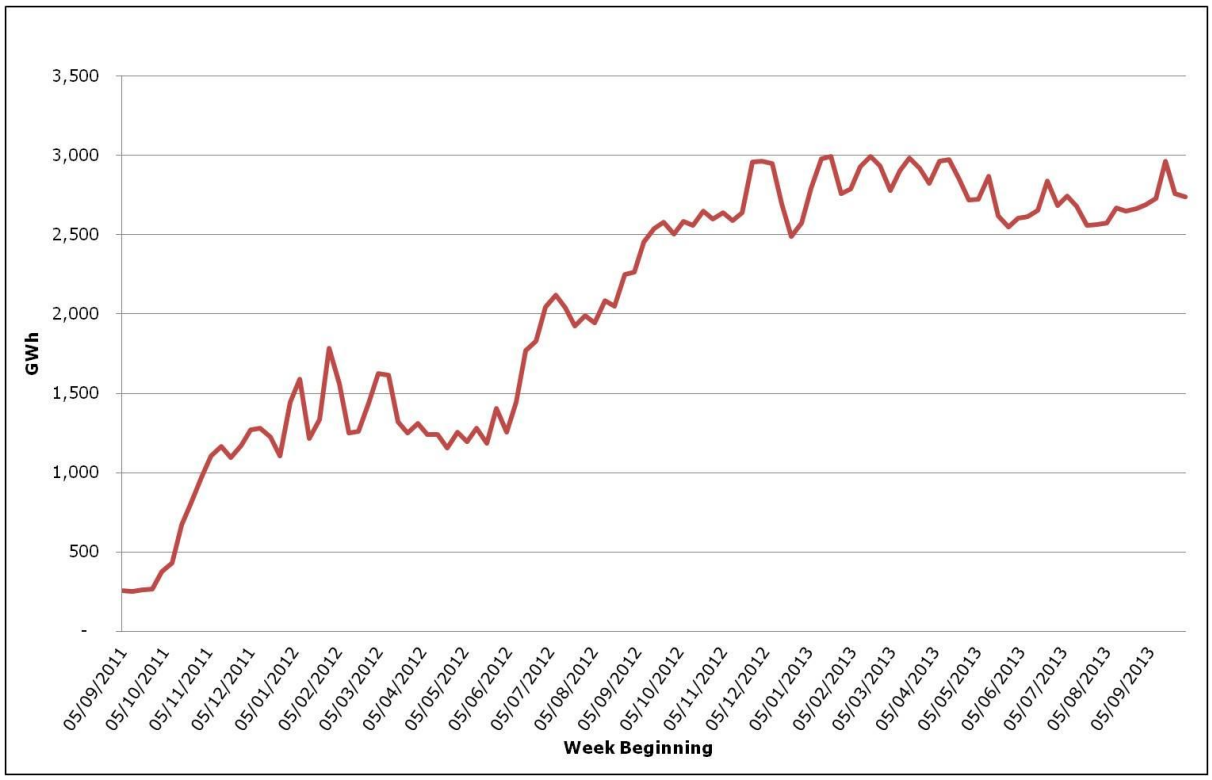



Source: Nasdaq OMX

## An effective near-term market

2.5. An effective near-term market ensures that market participants can shape their position close to delivery to manage their imbalance risk. The volume traded on day-ahead auctions is one indicator of how well the near-term market is performing. As noted in our June consultation, volumes traded in the day-ahead auctions appear to have levelled off following growth throughout 2012.

**Figure 13 – Day-ahead Auction Trading (APX and N2EX)**




Source: APX, N2EX

# Appendix 3 – Assumptions behind costs

**General assumption**

Staff costs are estimated using an all-in cost of £100,000 per year per full time equivalent (FTE) for traders, and £60,000 for all other staff members. This is supposed to cover all costs associated with the staff member, not just salaries. The cost for other staff members has been revised down since the draft IA – this is partly based on information for suitable categories in the salary data published by the Office of National Statistics.[106]

**Supplier Market Access: set-up costs**

(These assumptions relate to the cost estimates provided in figure 1).

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| **Set-up costs per trading agreement** | The cost of negotiating a trading agreement will cover:<br>• Direct staff costs<br>• Legal costs<br>• Compliance and creditworthiness checks<br>• Some small systems costs in order to permit trading with the small supplier.<br>A S&P licensee might also incur a small one-off cost of evaluating its current procedures and identifying changes necessary in order to be compliant with S&P.<br>Our estimates for the costs of signing a trading agreement are:<br>• Low case - £20,000<br>• Best estimate - £25,000<br>• High case - £30,000<br>We have revised these figures down slightly since the draft IA. This reflects the lower assumed staff cost and also gives greater weight to feedback based on the existing costs of negotiating with small suppliers. |

[106] It also includes a 30% overhead factor as set out in the Standard Cost Model. (Better Regulation Executive (2005), 'Measuring administrative costs: UK standard cost model manual', 29 September 2005, p62).

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| **Number of agreements signed** | Our estimates for the number of trading agreements signed are:<br>• Low case – four agreements<br>• Best estimate – seven agreements<br>• High case – ten agreements<br>The figures for each case involve a degree of guesswork. We would anticipate that the SMA rules would be attractive to small suppliers, so it seems sensible to factor a strong initial response into our cost estimates.<br>The number refers to the number of agreements signed with a particular S&P licensee, rather than the total number of small suppliers active in the market. (This would be the case if not every small supplier negotiated with every S&P licensee).<br>The number of number of trading agreements sought under the SMA rules may be lower for S&P licensees that have already made proactive efforts to sign trading agreements with small suppliers. This may reduce the set-up costs for such S&P licensees. |
| **Costs per initial negotiation** | As discussed in chapter five, S&P licensees may incur costs in relation to initial negotiations that do not result in a trading agreement being signed.<br>As a very rough figure, the cost of initial negotiations has simply been taken as one fifth of the set-up costs for a completed trading agreement for each case.<br>Negotiations may obviously end at different stages, so the cost figures should be taken as reflecting a rough average. |
| **Number of initial negotiations** | It is difficult to evaluate the number of initial negotiations that might occur. For simplicity, we have used the same numbers for each case as for agreements signed. |

**Supplier Market Access: ongoing costs**

(These assumptions relate to the cost estimates provided in figure 2).

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| **New trading agreements** | There will be an ongoing flow of additional small suppliers seeking trading agreements. For each case, the same cost assumptions are used as for the SMA set-up costs.<br><br>The rough assumptions for the number of additional trading agreements per year are:<br><br>• Low case – one agreement<br>• Best estimate – two agreements<br>• High case – four agreements<br><br>These figures are quite low because we assume that most small suppliers will have sought agreements at the set-up stage. |
| **Initial negotiations** | The cost of initial negotiations is assumed to be the same as in the set-up phase.<br><br>As for the set-up phase, the number of initial negotiations is assumed to be the same as the number of agreements signed. |
| **Staff costs** | We have updated these figures since the draft IA to provide some indication of the time required from different types of staff.<br><br>Number of traders required:<br><br>• Low case – Assumes negligible use of traders' time, meaning that no additional traders are required<br>• Best estimate – 0.25 FTE<br>• High case – 0.5 FTE<br><br>Traders would provide quotes and carry out trades. The precise time requirement would depend on the volume traded and the number of quotes requested.<br><br>Number of other staff members required:<br><br>• Low case and best estimate – one FTE[107] |

[107] The assumption for the amount of staff time required is slightly reduced compared to the draft IA – this is based on feedback suggesting that firms would not employ a large team and

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| | • High case – 1.5 FTE<br><br>Other staff would spend time managing credit and carrying out administration to support the trading activity. |
| **Credit costs** | As noted in the text, our credit assumptions are purely to give an indicative figure for the potential credit cost from trading with small suppliers. They do not indicate a defined amount of credit that we believe firms should be allocating.<br><br>The estimate of credit costs in the draft IA was based on the cost of variation margin only. [108] We have now added an estimate of the credit cost between delivery and payment, which should help to improve the accuracy of the estimate.<br><br>The formulas used to approximate the credit cost are:<br><br>• *Annual cost of variation margin* =<br>Volume traded under the SMA rules x<br>Proportion uncollateralised x<br>Price x<br>Negative exposure at default x<br>Risk of default x<br>(1- Proportion recovered from defaulting supplier)<br><br>• *Annual cost of delivered unpaid*=<br>(Volume traded under the SMA rules / 12 months) x<br>Proportion uncollateralised x<br>Price x<br>Risk of default x<br>(1- Proportion recovered from defaulting supplier)<br><br>The volume assumption for the delivered unpaid calculation reflects the average volume delivered unpaid at any point in time.[109] |

on further consideration of the likely time requirements.

[108] Variation margin is paid to cover changes in the value of the power before it is delivered. For example, if the value of the power falls, the buyer might have an incentive to default on the trade (as it could now buy the power more cheaply with a new trade.) To guard against this, the buyer would have to pay variation margin to the seller.

[109] Electricity will be delivered through a month, but we understand that payment only tends

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| | The total credit cost is the sum of these two answers.<br><br>Assumptions shared between cases:<br><br>• Half of the volume traded is uncollateralised<br>• Forward power price of £55/MWh[110]<br>• Negative exposure at default of 20% of the value of the power (ie the value of the power is 20% lower than when the small supplier bought it)<br><br>Particular assumptions for cases:<br><br>• Volume traded by each S&P licensee:<br>  ○ Low case – 0.5 TWh<br>  ○ Best estimate – 1 TWh<br>  ○ High case – 2 TWh<br>• Annual risk of default by small suppliers:<br>  ○ Low case – 3%<br>  ○ Best estimate – 4%<br>  ○ High case – 5%<br>• Proportion of mark to market loss recovered from a defaulting small supplier[111]:<br>  ○ Low case – 20%<br>  ○ Best estimate and high cases – zero<br><br>The actual cost may be lower as S&P licensees should adjust the credit offered to reflect the creditworthiness of each small supplier. |
| **Other costs** | We have not included costs identified by RFI respondents where our detailed proposals mean that these costs would not arise. |

to be made around the middle of the following month.
[110] This has been increased slightly from £50/MWh in the draft IA to better reflect the level of forward prices.
[111] These figures are low because a supplier would be likely to have very few assets from which value could be recovered.

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| | For example, we assume that the small supplier would pay any transaction fees charged by external platforms, so we have not included this cost.<br><br>Also, as the small supplier would be paying a market-reflective price, the S&P licensee does not face a cost from having to price more attractively than the market price.<br><br>Finally, as we are now allowing licensees to charge for any risk of trading small clip sizes, this is no longer included as a cost. |

**Market making: set-up costs**

The set-up costs primarily reflect all-in cost estimates provided by potential S&P licensees in responses to the RFI. It is therefore difficult to identify particular assumptions. The areas covered by this cost are discussed in the text.

We have reduced the estimates for the best estimate and the high case; this is to ensure consistency with the new lower figure for staff costs.

These set-up costs may be affected by whether the S&P licensee has previous experience of market making.

**Market making: ongoing costs**

(These assumptions relate to the cost estimates provided in figure 4).

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| **Staff costs** | While overall staff numbers remain the same as in the draft IA, these have now been categorised as traders or other staff.<br><br>Number of traders:<br>• Low case – 0.5 FTE[112]<br>• Best estimate and high case – one FTE[113]<br><br>Number of other staff:<br>• Low case – 0.5 FTE<br>• Best estimate and high case – two FTE |

[112] We have received suggestions that windows may help licensees to meet their staffing needs from existing resources - the low case figure reflects this.
[113] This assumes that a dedicated trader would be required, particularly given that they would be unavailable for other tasks at the busiest parts of the day.

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| | These staff estimates cover trading staff to carry out market making, and those working in teams supporting the trading operation (such as analysis, settlement, risk and credit). |
| **Transaction fees** | The low case assumes limited transaction fees. A market maker would bring a significant volume of trades to a platform, and so might be able to negotiate lower transaction fees. One respondent to the draft IA said that this was the usual practice in other markets, and so should be included in the best estimate case. However, the firm would be under an obligation, and therefore might not have a strong bargaining position. In addition, there would be six S&P licensees looking for reduced fees from platforms. For the purposes of the cost estimates, we therefore ignore the possibility of negotiating lower fees in the best estimate and high cases.<br><br>The best estimate and high case assume a platform transaction fee of £0.01/MWh. (This ignores any fixed platform fees – we assume that S&P licensees would market make on a platform where they would already have paid any fixed fees).<br><br>To estimate the transaction costs we also need some idea of the volumes that might be traded. The volumes for this are intended to provide cautious estimates about the potential costs - they should not be treated as predictions or success criteria for the impact of the intervention.<br><br>• For the best estimate, we assume that each S&P licensee carries out roughly one 10MW trade in every product on each trading day. However, we weight this slightly to reflect that there are likely to be more trades in months (which are smaller products in terms of number of hours), and slightly fewer trades per day in the longer-dated products. This gives a volume estimate of 55TWh per S&P licensee per year.<br><br>• In the high case, we assume that this level of trading is simply doubled, to 110TWh per S&P licensee. (Taken across all S&P licensees, this would total 660TWh of forward trading). This could be thought of as one trade per window in each product by each licensee.<br><br>We received suggestions that a larger volume would be possible under the market making obligation. We accept that the market making obligation does not place an overall limit on the volumes that could be traded. However, our estimates are intended to reflect a reasonably likely range of outcomes – and we are already incorporating a significant increase in trading compared to the current level. The volumes traded will also depend on how many trades other firms want to instigate – this will be somewhat influenced by factors like their own transaction costs |

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| | and credit costs. In addition, the final design also contains a number of features (eg the net volume cap) which may restrict the potential for extremely large volumes.<br><br>It was also argued that, because the proposed spreads are tighter than those in the market currently, more volumes will be routed through market makers. However, this static approach fails to reflect that an intended result of market making is to create greater consensus about prices and to therefore bring all prices tighter. |
| **Cost of open positions** | The firm is assumed to manage its position by waiting for a trade in one direction to be matched by a trade in another direction. There may be a day or two between such trades. In the meantime, the S&P licensee will therefore be taking a risk that the price moves, leaving it with a loss. (This includes the potential for ongoing price trends in the market).<br><br>We estimate the cost of such activity using a very simple multiplication of the assumed amount of risk capital needed (to cover the risks of market making) and a cost of such risk capital.<br><br>Amount of risk capital required to market make:<br><br>• Low case and best estimate – £5m<br><br>• High case – £10m<br><br>It is worth noting that the amount of risk capital required is affected by the assumed holding period before there is a trade in the opposite direction. Given the volume assumption above, this holding period is likely to be short.[114]<br><br>In all cases, we assume a cost of risk capital of 15%. |
| **Cost of managing credit exposures** | In the low case, we assume that trades for market making are cleared. This would occur, for example, if a S&P licensee carried out market making on an exchange. Under clearing, trades in opposite directions for a particular product cancel each other out, leaving no credit exposure. This leaves a short holding period, meaning that the volume open at any one time is small, and therefore the credit cost is limited. However, it is worth noting that a firm using clearing will need to be ready to meet any margin calls from the clearing house – this will require the firm to have access to sufficient cash or credit lines.<br><br>In the best estimate and high cases we assume that credit is |

[114] In addition, for trades which close an existing open position, the holding period is zero.

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| | managed bilaterally. (This reflects the current standard practice in the GB power market). In the bilateral case, it is assumed that firms manage credit risk without collateralisation. While this removes the explicit cost of having to make margin payments to a clearing house, there is still an implicit cost due to the risk of counterparty default. This implicit cost may be lower, because it does not involve actual payments.<br><br>However, the holding period is much longer for bilateral trades. This is because trades only cancel out bilaterally when conducted with the same counterparty. The longer holding period on bilateral trades means that a larger volume is outstanding at any point. |

**Reporting: ongoing costs**

(These assumptions relate to the cost estimates provided in figure 5).

Our updated assumptions for the staff time needed are:

- Low case – 0.5 FTE[115]
- Best estimate – one FTE
- High case – 1.5 FTE[116]

The staff time would be used to obtain data, and to prepare and verify reports. Reporting may also require input from a firm's IT staff. While the data (in particular in relation to orders to trade) may already be collected for REMIT purposes, some work may be needed to get it into a suitable form. We have received some suggestions that reporting may be easier if market making is carried out during trading windows – to reflect this, the assumed staff time required has been reduced slightly in the low and high cases.

Some of the information may be collected for a S&P licensee by its platform. The cost of reporting can reflect this possibility – in this case the licensee's own staff requirements would decrease, but it might need to pay an additional fee to the platform.

[115] Reduced from one FTE in the draft IA.
[116] Reduced from two FTE in the draft IA.

# Appendix 4 - Glossary

**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

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

### Blocks

Days are divided into a number of blocks for the trading of electricity. (For example, days are commonly divided into six blocks of four hours each). Block products help firms to improve the degree to which their contracted positions match their intended physical positions.

### 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.

**C**

### Churn rate

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

### 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.

### Contract for Difference (CfD)

A contract where the payoff is defined as the difference between a pre-agreed 'strike' price and a reference price (determined in relation to an underlying commodity). The government has proposed the use of CfDs as part of Electricity Market Reform. CfDs under EMR are intended to encourage investment in low-carbon generation by providing greater long-term revenue certainty to investors.

### Curve

A time-series of prices for near to longer-term products.

## D

### Day-ahead market

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

### Department of Energy and Climate Change (DECC)

The British Government department responsible for energy and climate change policy.

## E

### Electricity Forward Agreement (EFA) calendar

The EFA calendar is a specific calendar used for the trading of forward power products, in which each month is made up of a whole number of weeks.

### Electricity Market Reform (EMR)

EMR is the Government's approach to reforming the electricity system to ensure the UK's future electricity supply is secure, low-carbon and affordable.

### Exchange

A type of platform on which power products are sold. Typically an exchange would allow qualifying members to trade anonymously with other parties and the risks between parties would be managed by a clearing service.

**F**

### Financial contracts

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

### Forward trading

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

**G**

### Grid Trade Master Agreement

A Grid Trade Master Agreement (GTMA) is a legal agreement between the two parties in a trade that sets out terms in relation to financially settling the contract and physically delivering the power.

**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.

**I**

### Imbalance

The difference between a party's contracted position and metered position measured on a half-hourly basis.

**M**

### Market Coupling

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

## O

### 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 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 for the duration 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.

## R

### Retail Market Review (RMR)

Ofgem's Retail Market Review aims to encourage and equip consumers to engage effectively so that they can get the best deal from the energy market. The latest consultation on RMR was published in March 2013.

## 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.

**T**

### Transaction costs

The costs that a firm incurs in carrying out a trade.

# Appendix 5 - Feedback Questionnaire

1.1. Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about the manner in which this consultation has been conducted. In any case we would be keen to get your answers to the following questions:

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments?

1.2. Please send your comments to:

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