

Energy market investigation

Updated issues statement

18 February 2015

This is one of a series of consultative documents which will be published during the course of the investigation for consultation. This updated issues statement should be read alongside the working papers listed in Annex A. The updated issues statement, and these working papers, do not form the inquiry group's provisional findings. The group is carrying forward its information-gathering and analysis work and will proceed to prepare its provisional findings, which are currently scheduled for publication in May 2015, taking into consideration responses to the consultation on the updated issues statement and the working papers. Parties wishing to respond to this consultation should send their comments to energymarket@cma.gsi.gov.uk by 18 March 2015.

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Introduction

1. In July 2014 we published a statement of issues for the energy market investigation, in which we set out the theories of harm we intended to explore.¹ We are now providing this document – the updated issues statement – to summarise our current thinking based on the evidence we have received and the analysis we have undertaken to date.²
2. In this document we highlight those issues that we consider are likely to represent the focus of our investigation in the period up to the publication of our provisional findings – and that will help us identify whether one or more features give rise to an adverse effect on competition in the markets for the supply or acquisition of electricity and gas in Great Britain, as prescribed in the terms of reference³ – and those issues for which, subject to other evidence we might receive, we have fewer concerns. We also highlight those areas where further evidence from parties would be particularly helpful.
3. This statement follows the same broad structure as the issues statement and considers in turn each of the theories of harm. Detailed analysis is published in separate working papers, to which we refer throughout this document. A full list of the working papers is presented in [Annex A](#).
4. In publishing this document and the accompanying working papers, we are inviting comments from interested third parties. These documents will also inform our hearings with the Six Large Energy Firms⁴ and others, which we will be holding in March. At this stage in our investigation we have not reached any conclusions and our initial views as set out in this document may change in light of the comments and further evidence we receive and the further analysis we carry out.
5. We invite parties to respond in writing to this statement and the working papers published alongside it by **5pm on Wednesday 18 March 2015**. We are aiming to publish the working papers listed in [Annex A](#), and referenced throughout, by the end of the week commencing 23 February 2015.
6. We note that a small number of further working papers may be issued prior to provisional findings, which are not listed in [Annex A](#).

¹ [Energy market investigation statement of issues](#).

² The present document is being published as the annotated issues statement noted in [Guidelines for market investigations: Their role, procedures, assessment and remedies](#), paragraph 72(a).

³ [Energy market investigation terms of reference](#).

⁴ In this document and the working papers referred to in Annex A, 'the Six Large Energy Firms' refers to Centrica, EDF Energy (EDF), E.ON, RWE npower, Scottish and Southern Energy (SSE) and Scottish Power.

7. The remainder of the document is structured as follows:
 - (a) We first provide an overview of our progress on the investigation to date.
 - (b) In the next section we provide a summary of recent evidence on outcomes for consumers in the energy market, which will provide context for our investigation of theories of harm.
 - (c) We then set out a revision to our statement of the theories of harm that will guide our investigation.
 - (d) Finally, in the main body of this document, we set out our initial views on the evidence that we have reviewed to date under each of the updated theories of harm.

Progress of the investigation to date

8. Over the course of the investigation to date we have received submissions from energy suppliers, generators, government bodies, consumer groups, academics and other interested parties. We have visited the premises of the Six Large Energy Firms in Scotland, England and Wales, a smaller supplier, a generator and National Grid. We have held formal hearings with the Department of Energy & Climate Change (DECC), Ofgem, National Grid, consumer bodies, a small energy supplier, bodies responsible for settlement in gas and electricity, price comparison websites (PCWs), a collective switching website and several academics.
9. Non-confidential versions of the submissions we have received and of the summaries of the hearings we have held are on our web pages.⁵
10. A significant focus of our investigation to date has been on gathering, cleaning and analysing data and other forms of evidence. We have collected a range of written evidence and data from the ten largest energy suppliers and a large number of other parties including DECC, Ofgem, National Grid, generators, power exchanges, brokers and traders, consumer bodies and PCWs. We have also commissioned GfK NOP to conduct a survey of domestic customers of energy suppliers in Great Britain.
11. Throughout the investigation we have consulted with key parties on our approach to certain pieces of analysis. These include our proposed approaches to assessing profitability and the gains from switching. We also

⁵ [Energy market investigation web pages.](#)

invited comments on the outline design of the customer survey and on the questionnaire to be used in the survey.

Overview of market outcomes

12. In the issues statement we noted that GB energy markets face considerable challenges, including substantial regulatory change – notably, wide-ranging changes to the ways in which generating plant is remunerated – political uncertainty and a lack of trust between suppliers and customers. We are aware of broad public concerns about outcomes in the energy markets, notably rising energy prices, the perceived levels of profitability of the large energy firms and poor standards of customer service.
13. In this section, we provide an overview of some of the market outcomes we have observed, based on the evidence we have received to date, relating to prices, profits and quality of service. This information provides context for the detailed investigation of theories of harm that follows. The evidence we draw on in this section is set out in greater detail in working papers: 9 (Descriptive statistics: retail); 12 (Customer survey: GfK report); 13 (Analysis of the potential gains from switching); 18 (Analysis of generation profitability); and 19 (Profitability of retail energy supply: profit margin analysis).

Prices and profits

14. In relation to the retail segment, financial information provided by the Six Large Energy Firms shows that from 2009 to 2013 average prices⁶ rose significantly over the period for domestic customers. Average domestic electricity prices grew by 24% over the period, and average domestic gas prices grew by 27%.⁷ The data suggests that average profit (EBIT)⁸ margins earned on sales to domestic customers were 3.3% over the period. Average EBIT margins on sales of gas (4.4%) were higher than those on sales of electricity (2.1%).
15. These overall figures mask considerable variation in the profits and average prices associated with different types of tariff offered to domestic customers. Over the period 2011 to Quarter 2 2014, average revenue per kWh from the standard variable tariff (SVT), which the significant majority of customers of the Six Large Energy Firms pay, was 12% higher than average revenue from other tariffs for electricity across the large energy firms and 13% higher for

⁶ As measured by revenue / kWh.

⁷ Among the main drivers of price increases over this period have been network costs and the costs of social and environmental obligations.

⁸ Earnings before interest and tax, or gross profit less indirect costs.

gas.⁹ The evidence that we have seen to date also suggests that the gross margins that the Six Large Energy Firms earn are higher for customers on the SVT than for those on non-standard tariffs over the last three years.

16. Comparing all available domestic tariffs – including those offered by the independent suppliers – we calculate that, over the period Quarter 1 2012 to Quarter 2 2014, over 95% of the dual fuel customers of the Six Large Energy Firms could have saved by switching tariff and/or supplier and that the **average** saving available to these customers was between £158 and £234 a year (depending on the supplier).
17. The terms of reference for this investigation also include the retail supply of energy to microbusinesses. The financial information provided to us at this stage does not provide specific results for microbusinesses, but for small- and medium-sized enterprises (SMEs) as a whole, average electricity prices grew by 8% and average gas prices grew by 11%. EBIT margins in the SME segment were on average 8.6% over the period – significantly higher than those on sales to domestic customers. Margins on sales of gas to SMEs (10.1%) were higher than those on sales of electricity (8.1%).
18. We also have found considerable variation in the prices paid by microbusinesses. A comparison of the average annual electricity (gas) bill for a typical microbusiness on different contract types showed that as of 1 April 2013: a rollover contract was 33% (28%) higher than a retention contract; and a deemed contract was 75% (58%) higher than a retention contract.
19. We consider the potential competition implications of these observations under updated theory of harm 4,¹⁰ concerning competition in retail energy markets.
20. In relation to the profitability of generation, we have estimated the return on capital employed (ROCE) for the generation businesses of each of the Six Large Energy Firms, breaking these down by each of the major generation technologies where sufficient information was available. We observed that the pattern of returns for the period between 2009 and 2013 was mixed, with the main technologies all making a return that was in line with or below the firms' cost of capital (on a deprival value basis).

⁹ Three of the Six Large Energy Firms have not yet distinguished in the data they have provided to us between the SVT and other variable tariffs. We will update our analysis once this data becomes available.

¹⁰ As noted in paragraph 26, we have updated our theories of harm in the light of the evidence we have received to date.

Quality of service and complaints

21. There have been considerable concerns about the quality of service offered by the Six Large Energy Firms. We asked them to provide information on the number of complaints they had received, broken down by type of complaint. The results indicated that:
 - the number of recorded complaints has increased fivefold from 2007 to 2013; and
 - problems related to billing, customer services and payments accounted for the majority of complaints.
22. Complaints received by the Energy Ombudsman more than doubled between 2013 and 2014, driven primarily by increases in complaints about two suppliers and concerning billing, although problems relating to transfers have also been a factor.¹¹ The Energy Ombudsman told us that complaints about billing largely concerned: disputed charges; inaccurate invoices/absence of bill; quality of customer services; and back billing.
23. We note that increasing numbers of complaints may reflect: declining quality of service; price rises; changes in reporting standards; increasing media scrutiny of the sector; or a combination of these factors.
24. We have reviewed other pieces of evidence that would suggest that the customer service provided by the Six Large Energy Firms may be relatively poor. For example, in recent years Ofgem has taken enforcement action for breaches of the complaints-handling regulations against several of the Six Large Energy Firms. We also note that, according to a survey conducted in 2014 by Which? into standards of customer service across different sectors, all of the Six Large Energy Firms were in the bottom fifth of the table for customer service and two of them came last and second to last out of the 100 brands included in the survey.¹²
25. We have also seen some evidence that would suggest that the negative publicity surrounding the sector may have had an effect on attitudes towards energy firms. For example, evidence from the Competition and Markets Authority (CMA) customer survey suggests that domestic energy customers have a much higher level of trust that their own supplier will treat people in a fair and honest way than that other energy suppliers will treat people in a fair and honest way. Further, the results suggest that trust in other energy

¹¹ Energy Ombudsman 2013/14 Annual Report.

¹² A summary of results is available on the [Which? website](#).

suppliers is considerably below that in other service companies, such as retail banks, car insurers and mobile phone network providers.

Theories of harm

26. We identified four high-level theories of harm in the issues statement, which are set out in [Annex B](#). We have revisited these theories of harm in the light of the evidence we have received to date and have concluded that they no longer provide a comprehensive statement of the issues we intend to investigate. Therefore we have amended the theories of harm for this investigation as follows:
- Updated theory of harm 1: the market rules and regulatory framework distort competition and lead to inefficiencies in wholesale electricity markets.
 - Updated theory of harm 2: market power in electricity generation leads to higher prices.
 - Updated theory of harm 3a: opaque prices and low liquidity in wholesale electricity markets distort competition in retail and generation.
 - Updated theory of harm 3b: vertically integrated electricity companies act to harm the competitive position of non-integrated firms to the detriment of the consumer, either by increasing the costs of non-integrated energy suppliers or reducing the sales of non-integrated generating companies.
 - Updated theory of harm 4: energy suppliers face weak incentives to compete on price and non-price factors in retail markets, due in particular to inactive customers, supplier behaviour and/or regulatory interventions.
 - Updated theory of harm 5: the broader regulatory framework, including the current system of code governance, acts as a barrier to pro-competitive innovation and change.
27. The main changes concern updated theories of harm 1 and 5. In relation to updated theory of harm 1, the scope of our investigation into the rules and regulatory framework governing wholesale electricity is not limited to the effects of low levels of liquidity and opaque prices, as stated under our original formulation, so we have broadened it.
28. In relation to the updated theory of harm 5, several parties have submitted to us that elements of the codes system risk affecting competition either through distorting incentives, increasing barriers to entry or stifling innovation. We

consider the issue to be sufficiently important and far-reaching to warrant consideration under a separate theory of harm.

29. For clarity, the order in which the updated theories of harm are presented reflects the segment of the supply chain to which they relate (wholesale first, then vertical integration, then retail and finally a cross-cutting theory of harm). The order of the updated theories of harm is not intended to reflect their relative importance.

Updated theory of harm 1: the market rules and regulatory framework distort competition and lead to inefficiencies in wholesale electricity markets

30. The wholesale price of electricity represents just under half the total cost of supplying electricity to customers, and it is therefore important to consider whether competition operates well in the wholesale market. The rules and regulations that underpin the wholesale electricity market have to be more designed and institutionalised than in most markets because of the physical constraints of efficient electricity production on a distributed grid.
31. The New Electricity Trading Arrangements (NETA), introduced in 2001, provide the basic rules and regulation of wholesale market operation that are still in use today. They are regularly modified and updated, and we consider in greater detail an important set of proposed modifications, the Electricity Balancing Significant Code Review (EBSCR).
32. DECC's Electricity Market Reforms (EMR) have added a layer of market design specifically aimed at investment in the context of decarbonisation and security of supply goals. We consider in some detail the two major planks of EMR, the Capacity Market and Contracts for Difference (CfDs), both of which will become increasingly important drivers of both investment decisions and of the costs borne by consumers. By 2020/21, they are likely to account for over £3 billion of expenditure a year.
33. This section draws on the evidence and analysis set out in working papers: 3 (Wholesale electricity market rules); 7 (Locational pricing in the electricity market in Great Britain); 8 (Capacity); 18 (Analysis of generation profitability); and 20 (Legal and regulatory framework).

Market rules

34. We have reviewed three key elements of the design principles and market rules that shape competition in GB wholesale electricity markets:

- The principle of self-dispatch, which underpins current wholesale electricity market arrangements.
- The reforms to the system of imbalance prices that Ofgem is currently implementing.
- The absence of locational signals in charging for transmission constraints and losses.

Self-dispatch

35. We have considered a number of arguments concerning the potential impact of self-dispatch on competition, including that, relative to a more centralised system of dispatch,¹³ it increases incentives for vertical integration in a way that may harm competition and reduces price transparency and technical efficiency.
36. We believe that there are plausible arguments that the introduction of NETA in 2001 gave companies incentives to vertically integrate. This is due in part because the system was introduced with strong penalties for any imbalances between volumes of electricity covered by a contract and volumes generated (or, in the case of a supplier, consumed) in practice.¹⁴ More generally, there may have been uncertainty about the extent of liquidity in the new market. Vertical integration may have been viewed as a way of minimising these risks.
37. However, two trends since the early days of NETA substantially reduce the link today between self-dispatch and vertical integration. First, within-day markets are much more liquid than they were, reducing any value to ‘contracting with oneself’. Second, as discussed below, proposed reforms to cashout prices will eliminate the punitive element of being out of balance. Our initial view, therefore, is that the system is unlikely to continue to provide incentives for vertical integration.
38. The evidence we have reviewed does not suggest that prices are opaque in the wholesale electricity market for participants. The APX and N2EX day-ahead auctions publish prices and the prices of individual trades in the forward market are available, on an anonymised basis for a modest fee, from Trayport, the screen-based trading software provider that most traders use.

¹³ We note that in practice, there is not a binary distinction between self-dispatch and centralised dispatch. The key question is at what stage the system operator intervenes to ensure the system is balanced. In the current GB wholesale electricity market, this happens an hour before real time – ‘gate closure’ – whereas in the old England and Wales pool – prior to NETA – this happened a day ahead of real time.

¹⁴ The prices that apply to these imbalances are called ‘cashout’ prices or ‘imbalance’ prices.

39. It has been put to us that part of the value of a system based on centralised dispatch comes from the fact that there is greater public confidence that the prices are the result of supply and demand matching in the whole market. Our current understanding is that the differences between systems based on centralised dispatch and the GB system (especially after the introduction of the proposed single-price reform in cashout), are likely to be relatively slight in respect of public transparency. In both, for example, bids from generators are used by the system operator to build a supply curve and to generate a price used in almost real-time purchases and sales. This is typically done in an open and transparent way.
40. On technical efficiency, the evidence we have seen suggests that self-dispatch is leading to close to technically efficient operation of the system, in that actual prices are close to modelled estimates of the short-run marginal cost. National Grid has shown us research suggesting that system operation is unlikely to be more efficient under centralised as opposed to self-dispatch. We have yet to form a view on a related argument, which is that self-dispatch puts a greater burden on each party to forecast imbalance costs than would centralised dispatch, and that this may contribute to some technical inefficiency.
41. Overall, our initial view is that, given the reforms that have taken place since the introduction of NETA and the proposed move to a single price for cashout under the EBSCR, the differences between the GB system of self-dispatch and systems of centralised dispatch employed elsewhere in the world are relatively minor, and are not as substantive as some have submitted to us. We would welcome further views on this initial position.

Cashout prices

42. We note that Ofgem is in the process of implementing fundamental reforms to the system of cashout prices under the EBSCR. We consider the first element of these reforms – the move to a single price for imbalances – to be positive for competition, as it will eliminate the inefficient penalty that has previously been imposed on companies that find themselves in ‘helpful’ imbalance at any given time.
43. The other elements of the proposed reforms will lead to more extreme cashout prices:
 - ‘price average reference volume of 1 MWh’ (PAR1) – a move to pricing imbalances according to the average cost of the most expensive 1MWh of balancing action taken (compared with the current system, under which

they are priced according to the average cost of the most expensive 500MWh of actions taken); and

- 'reserve scarcity pricing' (RSP), under which the cashout price in times of system stress could reach £6,000/MWh.
44. We have heard some views that the move to PAR1 may not improve efficiency. First, it has been suggested that the PAR1 measure is not necessarily a good measure of the marginal cost of individual imbalances over a half-hour period, such that it may lead to excessive costs being incurred in an effort to avoid cashout. Second, we have heard that it may lead to concerns about market power, if a generator comes to learn that it may be a price-setter in the balancing mechanism. We have sought some clarification on both of these criticisms of PAR1 and will continue to investigate these issues.
45. Our understanding is that RSP has been introduced in order to encourage adequate investment in generation. We have some concerns, however, that the introduction of this major reform at the same time as the Capacity Market (which we discuss in paragraphs 51 to 55 below), may lead to an overcompensation of generators, if generators fail to take into account the impact of these potentially large but uncertain payments in their bids for providing capacity (due, for example, to a lack of confidence that prices will be allowed to rise to such high levels in times of system stress). More broadly, it is not clear to us that there is a need for the RSP component in cashout prices, given the introduction of the Capacity Market.

Absence of locational prices for constraints and losses

46. We have also considered the impact that the absence of locational prices for constraints and losses is likely to have on wholesale electricity market competition. Due to the limits of the transmission network, electricity that is transported from one part of the country to another incurs losses and may be subject to constraints. The costs of both losses and constraints vary considerably by geographical location – in an area with relatively low levels of demand and high levels of generation, for example, satisfying demand will be associated with low losses and is unlikely to be subject to constraints, while generating electricity will be associated with relatively high losses and high likelihood of constraints.
47. Our initial view is that, in light of these characteristics, there are clear arguments in principle for locational prices for constraints and losses. The absence of such prices in the GB wholesale market is likely to affect competition within and outside electricity markets, and to involve an efficiency loss. A previous estimate of the efficiency gains of short-run locational pricing (within

England and Wales), based on data from 1997, suggested that they may have been of the order of £70 million per year. Other analyses have suggested there would be significant distributional effects from a move to locational pricing across Great Britain, with consumers in Scotland and the north of England paying lower prices than at present and consumers in the south of England paying higher prices.

48. None of the estimates that we have seen to date has attempted to model to full short- and long-run effects of locational pricing for constraints and losses. Given the potentially significant nature of any reform in the direction of locational pricing, we would welcome further evidence on the likely efficiency gains, distributional effects and transitional costs associated with such a move, to help us develop our views in this area.

The Capacity Market and Contracts for Difference

49. The government's EMR programme will lead to a fundamental change in the way both thermal and low carbon generators are remunerated, through the introduction of the Capacity Market and CfDs respectively. Both involve an increased role for government – in establishing capacity requirements and overseeing procurement – and both reflect a fundamental shift towards a system based increasingly on competition for the market.
50. CfDs and the Capacity Market have only recently been introduced, and we therefore have little evidence on their impact in practice. However, they will have increasingly important impacts on the future investment decisions of generators and on the prices paid by consumers and we have therefore reviewed the design of these two policy instruments to assess their likely impact on competition.

Capacity Market

51. The Capacity Market was introduced to address the concern that potential investors in generation might be sceptical about their ability to recover the costs of their investment in an energy-only market (ie a market without a specific mechanism for remunerating capacity), since this would require prices to be allowed to spike to very high levels on the (rare) occasions of system stress.
52. Under the Capacity Market, National Grid holds auctions to secure agreements from capacity providers (generation and demand-side response (DSR)) to provide capacity when called upon to do so at times of system stress. The first auction (for delivery in 2018/19) was held in December 2014, and procured just under 50GW of capacity at a price of just under £20/kW,

considerably below the pre-auction estimates of the clearing price. This will result in capacity payments of just under £1 billion in the delivery year.

53. Our initial view is that there are strong arguments for introducing a capacity mechanism, to help ensure that an appropriate level of security of supply is maintained. In particular, this should help to improve incentives to invest in and maintain thermal generating capacity at a time of considerable policy change and provide greater incentives for DSR. We have found that since 2009 all of the Six Large Energy Firms have suffered significant impairment losses in relation to their conventional combined-cycle gas turbine (CCGT) and coal generation fleet. Impairment losses are a clear indication that investors do not expect to fully recover the cost of past investments in these technologies.
54. One issue we will wish to consider, as articulated in paragraph 45 above, is whether the simultaneous introduction of fundamental reforms to imbalance prices under the EBSCR – also aimed at improving incentives to invest – risks overcompensating generators in the future, at times of system stress.
55. Our initial view is that the design of the Capacity Market appears broadly competitive, although we are still reviewing various detailed aspects of design. For example, we are still considering representations put to us that it does not enable providers of DSR to compete with generators on an equal basis, since generators facing high capital costs are eligible for up to 15-year capacity agreements, while DSR providers are eligible for only one-year agreements (even where they face high capital costs). We also intend to investigate further the design of penalties for failing to provide capacity and whether the mechanism for recovering the costs of the Capacity Market provides efficient signals to suppliers of the value of capacity at peak times.¹⁵

Contracts for Difference

56. CfDs have been introduced to replace Renewable Obligation Certificates (ROCs) as the main mechanism for incentivising investment in low carbon generation. Unlike ROCs, which take the form of a payment on top of the revenue generators receive from the wholesale electricity market, under CfDs, generators are paid the difference between a strike price (which is fixed in real terms) and a market reference price.¹⁶

¹⁵ We note that that the Capacity Market scheme was approved by the European Commission under state aid rules in July 2014 and that, in December 2014, Tempus Energy brought an action before the European General Court seeking the annulment of this decision.

¹⁶ The effect is that, if those who have a CfD sell their electricity in the reference market, they will, overall, receive the strike price for each kWh of electricity they generate.

57. CfD payments are due to increase steadily, reaching about £2.5 billion a year by 2020/21. DECC has expressed the view that, by insulating low carbon generators from a fluctuating wholesale price, CfDs will allow them to manage risks more effectively, resulting in a lower cost of capital and, in the long run, lower costs to consumers.
58. Our initial view is that there are relatively strong efficiency arguments for replacing ROCs with CfDs. Perhaps the most important potential benefit of this reform is that under CfDs competition can be used to set the strike price. The government has decided to hold the first competitive allocation round for CfDs in February this year. However, we are concerned that some elements of the allocation process may restrict the use of competition in setting the strike price.
59. First, dividing the CfD budget into three separate pots runs the risk that projects from one pot may be displaced by more expensive projects from another. Further, the fact that potential bidders for CfD contracts still have the option of seeking support for their projects under ROCs until March 2017 risks placing an effective floor on bids for CfD contracts, reducing the effectiveness of the competitive process.
60. Lastly, we note that there is an alternative, non-competitive approach to allocating CfDs. Eight projects were allocated CfDs under the Final Investment Decision enabling for Renewables (FIDeR) scheme in 2014, with a lifetime cost of over £16 billion, and these will represent around half the available budget for CfDs to 2020. We also note that the Secretary of State has the power to direct the CfD counterparty to award additional CfDs in a non-competitive manner in the future.¹⁷ By being awarded outside of a competitive process, there are risks that such contracts will unduly raise prices for consumers.
61. We understand that there are potentially competing objectives that need to be taken into account in the design of the CfD allocation mechanism, including the potential benefits of innovation in new technologies, and will want to consider these further before reaching a conclusion in this area. We also intend to review the outcomes of the first competitive allocation process in February.
62. In the issues statement we set out a potential concern that large CfD holders may be able to manipulate the reference price in order to receive higher CfD payments. Having reviewed the evidence, we consider at this stage that it is

¹⁷ See Section 10 of the Energy Act 2013 and Part 10 of the Contracts for Difference (Allocation) Regulations 2014

unlikely that any generator would have the ability and incentive to manipulate the reference price in the near future.

Overall current thinking in relation to updated theory of harm 1

63. Our initial view is that there are relatively strong arguments in support of several of the recent reforms to the regulatory framework and rules governing the wholesale electricity market. We welcome in particular the replacement of ROCs with CfDs, the introduction of a capacity mechanism and the move to a single price for imbalances. We note that the Capacity Market and CfD schemes (as well as individual support schemes) were approved by the European Commission under state aid rules on 23 July 2014.
64. We have, however, identified a number of areas where our initial view is that the market rules and regulatory framework could potentially distort competition and lead to inefficiencies in wholesale electricity markets. Most notably, at this stage, we consider that:
- there may be a risk of the imbalance price reforms overcompensating generators, given potential interactions with the Capacity Market;
 - the absence of locational pricing of constraints and losses may distort competition; and
 - there may be a risk that a lack of competition in the CfD allocation mechanism may mean that CfDs are not allocated to the most efficient projects or at least cost to energy consumers.
65. We will continue to develop our analysis in these areas and would welcome further views and evidence from interested parties.

Updated theory of harm 2: market power in generation leads to higher prices

66. In the issues statement we set out our intention to assess whether any of the major generators are likely to have market power in the wholesale electricity market in Great Britain. We analysed this issue by building a dispatch model to assess whether generators have the unilateral incentive and ability to increase prices (relative to a competitive benchmark) by withholding generating capacity. We also considered the ability of the Six Large Energy Firms to exercise coordinated market power at the generation level.
67. This section draws on the evidence and analysis set out in working papers: 4 (Market power in generation); and 18 (Analysis of generation profitability).

68. Our initial modelling suggested that there may be some opportunities for certain generators to increase profits by withdrawing capacity. However, while these results represented an upper-bound estimate of the technical feasibility of withdrawing capacity, they did not take into account several important practical constraints on the ability and incentive of generators to exploit unilateral market power (UMP), relating to:
- Uncertainty: generators do not have perfect knowledge of demand or wind, even at dispatch, which will reduce the ability to exploit market power.
 - Forward trading: most electricity is sold ahead, which would be expected to reduce incentives to withhold capacity.
 - Regulation: regulations such as REMIT have been designed to identify abuse of market power and capacity-withholding. Penalties under these regulations will provide a further disincentive for parties to engage in UMP strategies.
69. We applied filters to the modelling results to illustrate the impact of uncertainty and to exclude results based on relatively low profit opportunities. After application of either filter, the model suggested that there were minimal opportunities to increase profits by withdrawing capacity.
70. We also estimated the ROCE for the generation businesses of each of the Six Large Energy Firms, breaking these down by each of the major generation technologies where sufficient information was available. We observed that the pattern of returns for the period between 2009 and 2013 was mixed, with the main technologies all making a return that was in line with or below the firms' cost of capital (on a deprival value basis).
71. Returns on CCGTs declined over the period, with four of the Six Large Energy Firms making losses at the end of the period, while returns on nuclear power stations improved significantly. Returns on coal power stations fluctuated significantly due to the combination of strong operating profits on the one hand – particularly in the first few years – and significant impairments to asset values on the other.
72. Our initial view is that the profitability analysis does not provide evidence that overall, the Six Large Energy Firms have earned excessive profits from their generation business over the period or that wholesale market prices have been above the competitive level.
73. In relation to the possibility of exercising coordinated market power in the wholesale market, based on the evidence we have seen to date, our initial

view is that the three necessary conditions for such coordination are not likely to be met:

- Reaching and monitoring coordination. The reaching of an understanding among multiple generators would be difficult because almost all wholesale trades are anonymous until the point of transaction.
- Internal sustainability. The anonymous nature of trading means that it is hard to associate a price outcome to the behaviour of a specific firm and therefore hard to target any punishment strategy.
- External sustainability. If coordination were to be among the Six Large Energy Firms, then the large independent generators may be able to increase output in response. Moreover, at this stage, we have not seen evidence that the Six Large Energy Firms can block entry into generation.

Overall current thinking in relation to theory of harm 2

74. On the basis of the evidence we have reviewed and the analysis we have conducted to date, it does not appear to us likely, overall, that firms have the ability and incentive to increase profits by withdrawing capacity in generation, through the exercise of either UMP or coordinated market power.

Wholesale gas

75. Wholesale gas markets were not covered by a theory of harm in our issues statement, on the basis that the wholesale gas market in Great Britain did not appear to possess the potentially harmful features that have been identified in wholesale electricity. We have conducted a more detailed assessment of this question, and this overall conclusion has not changed. The evidence we draw on in this section is set out in greater detail in working paper 6 (Wholesale gas market).
76. We have considered whether the wholesale gas market is likely to be subject to the exercise of UMP. We found that Statoil is the one company that might have the ability to raise wholesale prices by withholding output in an exceptionally cold winter. However, Statoil is unlikely to have the incentive to sustain the output reductions required to raise prices. Our initial view is that the wholesale gas market is unlikely to be at risk of being subject to UMP.
77. We investigated the possibility of barriers to entry in gas storage projects or interconnection projects. We did not find evidence of substantial barriers to entry. Therefore, we consider that as the share of domestic North Sea production declines and Great Britain's reliance on imports increases,

competition in access routes to imports ought to be sufficient. This does not, however, imply any conclusion about the likely degree of competition between import sources.

78. We considered whether liquidity in the wholesale gas market is likely to be sufficient for the needs of new entrant suppliers. We found no evidence of insufficient liquidity. We asked whether the gas wholesale market is sufficiently transparent and whether parties might find an incentive in manipulating market indices. We found that market prices are transparent. Moreover, we believe that Ofgem and the Financial Conduct Authority have the powers required to investigate and prosecute price manipulation questions.
79. This initial view on wholesale gas does not imply an absence of competition problems in the retail supply of gas. These are considered under updated theory of harm 4.

Updated theories of harm relating to vertical integration

80. In the reference document, Ofgem identified vertical integration as one of the five features of GB electricity markets that may be having an adverse effect on competition. We have considered two related but distinct theories of harm relating to vertical integration. The first is that low levels of liquidity (whether caused by vertical integration or other factors such as the market rules or regulatory framework) may give a competitive advantage to vertically integrated firms.¹⁸ The second is that vertically integrated firms may use their position in wholesale or retail markets to undermine competition from independent suppliers or generators respectively. Before presenting our initial views under these theories of harm, we provide some observations on the extent of vertical integration in the electricity sector and the potential benefits it confers.
81. This section draws on the evidence and analysis set out in working papers: 2 (Liquidity); and 5 (Foreclosure).
82. We have heard a variety of views from the Six Large Energy Firms on the benefits that being vertically integrated confers upon them, including the following:

¹⁸ In this section, we use the term 'vertically integrated firms' generically to indicate any firm that engages in both generation and supply of electricity (or the production and supply of gas where we use the term in the context of gas). We do not use it to refer to particular firms.

- Several firms have argued that being vertically integrated reduces overall collateral requirements, through a combination of internal trades, netting off generation and supply positions, and improved credit rating.
 - Some firms have also expressed the view that vertical integration reduces their cost of capital, partly because credit rating agencies perceive vertical integration to confer risk advantages in the electricity sector. We note that, in practice, it may be difficult to distinguish the specific impact on credit rating of being vertically integrated from those of having a large capital base or diversification.
 - There was some support for the view that being vertically integrated provides a natural hedge, reducing exposure to volatility and reducing the need to trade for hedging purposes.
83. We note that benefits are likely to apply to a different extent to different firms. For example, the benefits to forward hedging from a natural hedge are likely to apply to a greater extent to companies with more nuclear or renewable generation (since they are fully exposed to changes in wholesale prices, whereas thermal generators (particularly those at the margin) will tend to see input costs move more in line with wholesale prices). The introduction of CfDs and the Capacity Market are likely to change this relationship further.
84. Independent suppliers who took part in case study interviews expressed mixed views on the extent to which vertical integration should be considered a barrier to entry or expansion. Two of the suppliers believed that it allowed the Six Large Energy Firms to distort prices in their favour and one believed that not being vertically integrated meant that independents were disadvantaged by energy imbalance pricing. In contrast, three independents believed that not being vertically integrated was an advantage to them.
85. The benefits to firms of being vertically integrated are likely to have changed over time. Initially one of the main motivations for vertically integrating may have been concerns about security of supply (ie continuity of input for a retailer) whereas none of the Six Large Energy Firms we spoke to believed this was an important advantage of vertical integration under current market arrangements.
86. There are different degrees of integration within each of the Six Large Energy Firms, both in relation to the extent of independence of operational units within the firms and the degree of generation / supply balance. In 2012/13, for example, their net positions ranged from 27 TWh short to 23 TWh long.

87. Finally, we note that two of the Six Large Energy Firms have recently announced plans to reduce their degree of integration. In 2014, Centrica announced its intention to sell three large CCGTs and E.ON has announced its intention to divide its business into two: one focussing on retail, distribution and renewables; and the other on power generation, global energy trading and exploration and production.

Updated theory of harm 3a: opaque prices and low liquidity in wholesale electricity markets distort competition in retail and generation

88. Liquidity is a measure of the availability of products that market participants wish to trade; we consider that a product can be considered to be liquid if it is possible to buy it without causing a significant change in its price. Poor liquidity could distort competition, particularly if it benefits vertically integrated firms at the expense of other firms.

Views of suppliers and generators

89. Several independent suppliers believed that liquidity in wholesale electricity was sufficiently low, at least in particular products, as to impose additional risk and/or costs on them. One also told us that it believed it placed vertically integrated suppliers at a competitive advantage because they could trade internally even when products were not available in externally traded markets. Not all independent suppliers identified liquidity as a concern, however, and one told us that sufficient liquidity was available.
90. Independent generators told us that there were limits to liquidity, which affected their businesses. One of them suggested that it was suppliers' unwillingness to trade until their demand became more predictable closer to delivery that explained the lack of shape trading further out.

Analysis of data

91. We have assessed the extent of liquidity in GB wholesale electricity markets by gathering data from suppliers, generators and brokers.
92. Our analysis of broker data suggested that availability (at any spread) of baseload season products (delivery for six months, Oct–Mar and Apr–Sep) was very good for more than two years ahead of delivery. Peak season products were not always available, but had reasonable availability (70% or more) three seasons ahead. Baseload months were almost always available two months ahead, and peak month availability was best one month ahead. Quarters were available less than months. Products other than these six had relatively little availability.

93. We generally found that spreads were tighter the closer a product got to delivery. So, for example, looking at baseload products, which have the tightest spreads, spreads for the front four seasons (two years) have generally been below 1% in the last two years. For seasons beyond this, spreads are generally wider.
94. Our initial view is that near-term liquidity appears strong; that a small number of the most-traded wholesale electricity products have good availability; but many other products have not been widely traded or available for sale in any depth, especially when parties seek to trade months or more in advance of delivery. The introduction of Ofgem's Secure & Promote licence conditions may have improved this situation for selected products at certain times of day, but does not appear to have had any positive effect on more granular products or other times. We note that the overall effects of Secure & Promote are as yet uncertain.
95. Our initial view, and based on the evidence we have received to date, is that we do not think there are significant problems with regard to transparency: the large majority of external trading takes place over platforms where prices are visible to all market participants.¹⁹

Effect on competition

96. Our primary concern about the level of liquidity is whether it distorts competition in relevant markets. This is most likely to occur if some parties are less able than others to 'hedge' their demand or supply (ie contracting wholesale electricity in advance of delivery as protection against spot price changes), and/or balance their position at delivery. If so, it could place certain suppliers or generators at a competitive disadvantage and/or act as a barrier to entry or expansion.
97. We have considered whether there is any evidence that the Six Large Energy Firms derive an advantage over independent suppliers or generators from their vertical integration, by being able to trade internally products that are not liquid in external traded markets.
98. Our analysis suggests that the Six Large Energy Firms generally hedge further forward than independents but that external product availability is good enough for independent firms to match the Six Large Energy Firms' hedging strategies. Indeed, the Six Large Energy Firms in general trade enough

¹⁹ Our analysis of the external trading of 16 firms (including the Six Large Energy Firms) showed 81% by volume taking place OTC ('over-the-counter') through brokers and 13% via exchanges, and only 6% via direct bilateral trades, which are not visible to the market. These figures exclude cashout, which represents a small proportion of most firms' volumes, and is also visible.

externally to construct their own hedged positions, even if they also engage in internal trades. This suggests that the Six Large Energy Firms are not gaining a competitive advantage in terms of product availability from the ability to trade internally.

99. We also looked at trading and hedging in gas. We note that there is a much lower degree of vertical integration, and liquidity is generally held to be better, in gas than electricity. Our analysis showed that gas has better availability than comparable electricity products. Despite this, we see similar patterns of trading and hedging behaviour between gas and electricity. If there were fundamental deficiencies in liquidity in electricity, or if vertically integrated firms were forming their electricity hedges by trading internally, we would expect to see that comparable gas products are traded further ahead than electricity in external markets; but that was broadly not the case. Similarly, if vertically integrated firms gained an advantage in electricity from having the option to trade internally, we might expect to see them hedging further ahead in gas than in electricity; but again, that was broadly not the case.

Overall current thinking on liquidity

100. The lack of liquidity in less widely traded products may impose some degree of increased risk on market participants, and therefore we think it is appropriate that Ofgem continues to monitor and attempt to improve it. However, based on the evidence we have reviewed to date, current levels of liquidity appear to be sufficient to allow independent suppliers and generators to trade and hedge in the same way as the Six Large Energy Firms. Therefore, our initial view is that liquidity does not seem to be distorting competition or acting as a barrier to entry or expansion.

Updated theory of harm 3b: vertically integrated electricity companies act to harm the competitive position of non-integrated firms to the detriment of consumers, either by increasing the costs of non-integrated energy suppliers or reducing the sales of non-integrated generating companies.

101. We have assessed the scope for foreclosure in energy markets. By foreclosure, we refer to a vertically integrated firm using its position in one market to harm competitors in another market. We consider two types of foreclosure: customer foreclosure and input foreclosure. We note that we did not receive responses to the issues statement that indicated that either form of foreclosure was a major concern to parties.

Customer foreclosure

102. Customer foreclosure would involve a vertically integrated supplier causing harm to independent generators, by acting strategically to reduce their ability to sell their output. We have considered a range of possible mechanisms for customer foreclosure, which would involve the vertically integrated firm: reducing willingness to sign long-term offtake contracts with independent generators; reducing willingness to trade certain products or to trade with independent generators; or dispatching its own generation even when cheaper generation was available from other firms. In relation to each potential mechanism, we have assessed whether firms have the ability and incentive to foreclose rivals, and whether the foreclosure strategy would harm consumers.
103. Our initial view, at this stage, is that vertically integrated firms do not have the ability to foreclose generators (either acting unilaterally or through coordination). Based on the evidence we have seen, we are also doubtful that they would have an incentive to do so.

Input foreclosure

104. We have also assessed the possibility of input foreclosure, which would involve a vertically integrated firm taking action in the wholesale electricity market to disadvantage independent retailers. We consider two possible mechanisms: one through increasing wholesale electricity prices, and one through trading and liquidity.
105. In relation to the first, if a firm has any market power in generation, it could increase wholesale electricity prices by generating less at any given price, which would increase input costs for independent suppliers. Our analysis under updated theory of harm 2 suggested that firms do not have the incentive to exercise UMP in generation and this initial conclusion does not change if we consider, in addition, the potential effects of withdrawing capacity on rival suppliers: the benefits are unlikely to outweigh the costs.
106. In relation to the second mechanism, a vertically integrated firm could try to restrict trading or otherwise worsen liquidity, which might either raise traded prices or impose a risk premium on independent suppliers. Our assessment of the evidence suggests that a strategy targeted on independent suppliers is not likely to be possible since more than 95% of trades are anonymous. Further, no vertically integrated firm acting unilaterally is likely to have a significant effect on overall liquidity, particularly given Ofgem's recent introduction of Secure & Promote licence conditions.

Overall current thinking on foreclosure

107. Taken together, our initial view at this stage is that it is unlikely that a vertically integrated firm has the ability and incentive to engage in customer or input foreclosure.

Updated theory of harm 4: energy suppliers face weak incentives to compete on price and non-price factors in retail markets, due in particular to inactive customers, supplier behaviour and/or regulatory interventions

108. Ofgem's concerns about retail markets were one of the key reasons for making the market investigation reference. In the reference document, Ofgem identified weak customer response, incumbency advantages, and tacit coordination as features (among others) of GB retail energy markets that may be having a harmful effect on competition.
109. To date, the main focus of our work on retail markets has been on gathering data and evidence – in particular, collecting and cleaning data from suppliers and conducting an extensive survey of just under 7,000 domestic customers across Great Britain.
110. We have begun our analysis of this evidence, but our initial views on retail theories of harm are at an earlier stage of development than those relating to wholesale electricity and vertical integration. They reflect our initial assessment of the evidence to date, and will evolve as our analysis progresses.
111. We first provide some initial observations on the nature of competition in domestic retail energy markets. Then we set out our initial views under each of the sub theories of harm as they relate to domestic customers. Finally, we set out our initial views on the supply of energy to microbusinesses. This section draws on the evidence and analysis set out in working papers 9 to 17 and 19 to 22 inclusive.

Observations on the nature of competition in domestic retail energy markets

112. There are around 27 million domestic electricity customers and 23 million domestic gas customers. Where customers use both electricity and gas, they often take both fuels from the same supplier – 19 million customers currently purchase their energy in this way.²⁰ Tariffs take a variety of different forms: SVTs are the most common type of tariff currently, followed by fixed-rate

²⁰ Data for 31 July 2014, provided to the CMA by Cornwall Energy.

tariffs which can vary in term. The SVTs have no end dates whereas the fixed-rate tariffs do have specified end dates.

113. Between 50% and 90% of the customers of the Six Large Energy Firms are currently on the SVT. In the analysis that follows, we sometimes compare the SVT with all other tariffs combined, which we call 'non-standard tariffs'.

Incumbency and entry

114. Centrica (then British Gas) was the monopoly supplier of gas until 1996. Since then it has aimed to convert its existing gas customers to dual fuel and to attract new customers taking both fuels. The other five large energy firms are successor companies to the 14 regional electricity monopolies. Since liberalisation in 1999 these businesses have also aimed to convert their existing electricity customers to dual fuel and to gain customers in regions outside their legacy areas.
115. Historical incumbency still appears to have an effect on customer behaviour today. About 40% of Centrica's domestic gas customers have been served by Centrica for more than ten years. Regarding electricity supply, around 40 to 50% of the domestic customers of incumbent suppliers within each region have been with their supplier for ten years or more, with the exception of one incumbent supplier, where the proportion is higher (around 60 to 70%).
116. In recent years, independents have gained market share, largely through offering less expensive fixed-rate tariffs. The domestic market share of independent suppliers grew from around 1% to 7% between July 2011 and July 2014 for electricity and from around 1% to 8% for gas over the same period.²¹

The impact of regulation on price competition

117. As set out in working paper 11 (The pricing strategies of the large energy firms in the retail supply of electricity and gas to domestic consumers), the nature of price competition between the large energy firms has changed several times since liberalisation, due in large part to changes in the regulatory regime.
118. We have found that, post-liberalisation, competition was initially focused on the SVT. Centrica aimed to grow its retail business by converting its existing gas domestic customers to dual fuel and attracting new dual fuel domestic

²¹ Data for 31 July 2014, provided to the CMA by Cornwall Energy.

customers. Similarly, the incumbent electricity suppliers aimed to convert domestic customers in their 'home' areas to dual fuel and to attract new dual fuel domestic customers in other areas. In both cases, a key element of the strategy was to offer a SVT that was cheaper than the one offered by the incumbent supplier.

119. In 2009 Ofgem implemented Standard Licence Condition 25A, which prohibited regional price discrimination.²² However, it provided exemptions for promotional tariffs, which offered temporary discounts on the SVT (including percentage discounts to SVTs and cheaper fixed-price tariffs and capped tariffs, all of which defaulted to the SVT at the end of term). We understand that this may have led to an increase in the number of tariffs, with the Six Large Energy Firms offering non-standard tariffs with lower margins in some areas (for the incumbent electricity suppliers, margins were more likely to be lower out-of-area).
120. In 2013, partly in response to the increase in tariffs, Ofgem proposed changes to a number of licence conditions with the objective of making the market simpler, clearer and fairer to customers. These reforms are generally known as the Retail Market Review (RMR) reforms. The RMR reforms that took effect in 2014 introduced a number of obligations on suppliers, including several provisions relating to tariffs, notably:
 - having four core tariffs for gas and four for electricity;
 - having one structure for tariffs – a unit rate (or unit rates for time of use tariffs) and standing charge, which can be zero; and
 - offering a maximum of two cash discounts, one for dual fuel (where a domestic consumer takes gas and electricity from the same supplier) and one for managing their account online.
121. We understand that some of the actions taken by energy suppliers to be RMR-compliant have included: the removal of discounted variable tariffs, which means that all fixed-period tariffs now fix the rate for the term of the tariff; the removal of premium green, two-tier and bundled tariffs; and the withdrawal of prompt-pay discounts and of discretionary credits and rebates and cashback offers.

²² It also introduced SLC 27.2A, which prohibited undue discrimination by payment methods.

The relationship between the standard variable tariff and non-standard tariffs

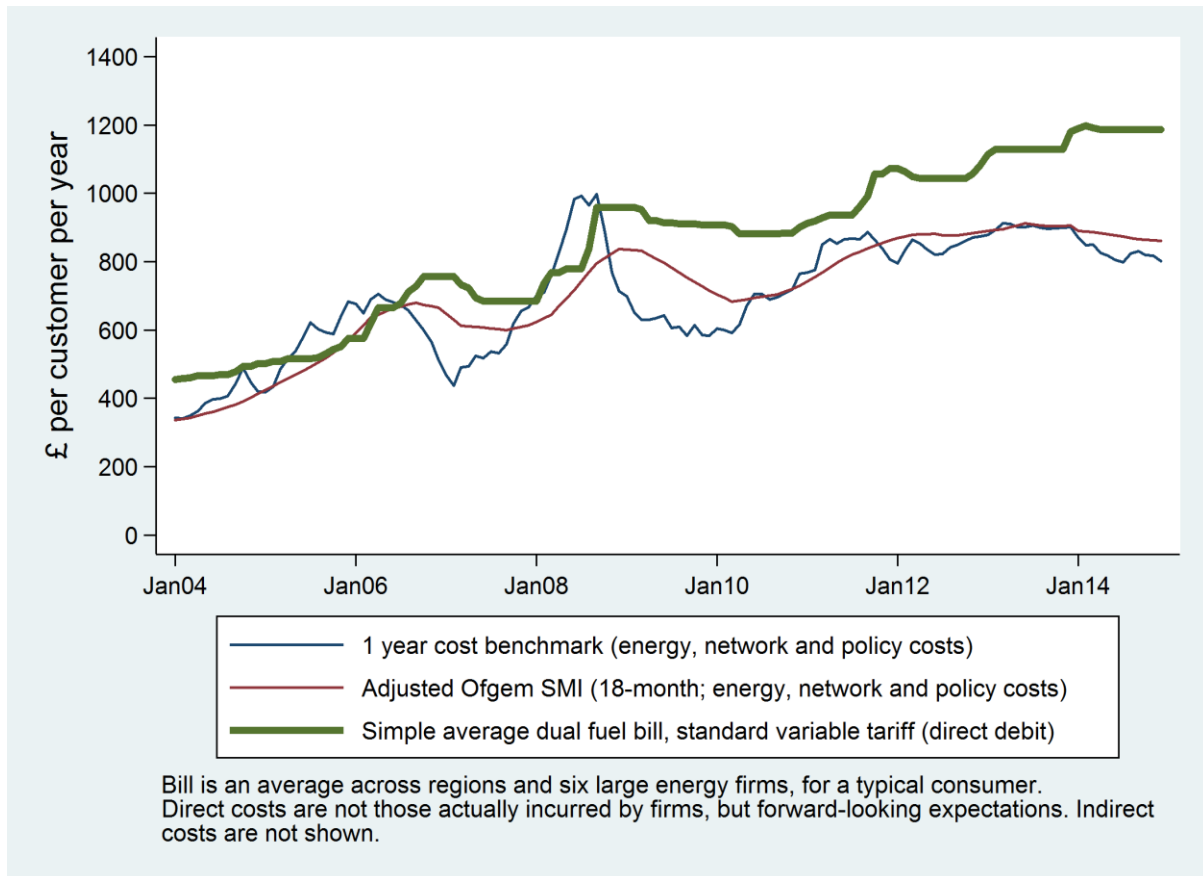
122. We have observed that, for the Six Large Energy Firms, gas and electricity revenues per kWh from the SVT are consistently higher than average revenue from non-standard (generally fixed-price) tariffs. Over the period 2011 to Quarter 2 2014, average revenue per kWh from the SVT was 12% higher than average revenue from non-standard tariffs for electricity across the Six Large Energy Firms and 13% higher for gas. We have found that SVT tariffs have generated more revenue per kWh than non-standard tariffs over this period for each of the Six Large Energy Firms, for both gas and electricity.²³
123. The evidence that we have seen to date suggests that over the last three years the gross margins that the Six Large Energy Firms earn are higher for customers on the SVT than for those from non-standard tariffs. Some suppliers have stated that the costs to serve SVT customers are higher than for customers on non-standard tariffs, and we will wish to investigate this further.
124. We have also considered to what extent changes in SVTs and non-standard tariffs are associated with changes in expected direct costs, since in a competitive market we might expect prices to change in response to such changes in expectation. Figure 1 below shows the relationship between changes in average SVTs (as reflected in an average direct debit dual fuel bill) offered by the Six Large Energy Firms and changes in expected direct costs (wholesale costs, network costs and policy costs) over the last ten years.²⁴

²³ While we do not have data for all suppliers before 2011, for those suppliers for which we do have data, we found that SVT tariffs have generated more revenue per kWh than non-standard tariffs in all years since 2008, with the exception of one Six Large Energy Firms, in one year for its gas SVT tariffs.

²⁴ Our analysis to date is set out in working paper 14 (Cost pass-through).

FIGURE 1

Evolution of average SVT bill against expected direct costs



Source: CMA analysis of data collected from ICIS and Ofgem.

125. Figure 1 shows two cost indices, reflecting different approaches to estimating expected wholesale costs. Ofgem’s Supply Market Indicator (SMI) tracks the expected cost by assuming that the supplier has already purchased some of the expected volume in the past through a stylised hedging strategy. We have also calculated a ‘one-year cost benchmark’, which is a purely forward-looking measure of opportunity cost (ie it takes no account of past hedging decisions). It tracks the cost that a supplier would incur if it were to purchase energy for a typical customer for the following 12 months, based on the prevailing energy prices in that month in the market.²⁵
126. We note that the gap between the SMI measure of direct costs and the average SVT seems to widen over time, and particularly from around 2009 onwards. We also note that the one-year cost benchmark is more volatile than the SMI, particularly from 2006 to 2010, but that it appears to follow the same

²⁵ We understand that this is similar to the strategy employed by some of the suppliers for purchasing energy for their customers on one-year fixed tariffs.

broad trend. Our initial view is that Figure 1 appears to be consistent with a potential weakening of competition over the SVT over time, and particularly from 2009, as the gap between the SVT and underlying costs appears to widen.²⁶ We note that the gap narrowed somewhat around 2011 and that the chart does not include the most recent reductions in gas SVT tariffs announced by each of the Six Large Energy Firms over the last few weeks, but we do not think this would materially change the overall pattern observed (the average of the announced reductions would represent a fall of around £27 on the chart).

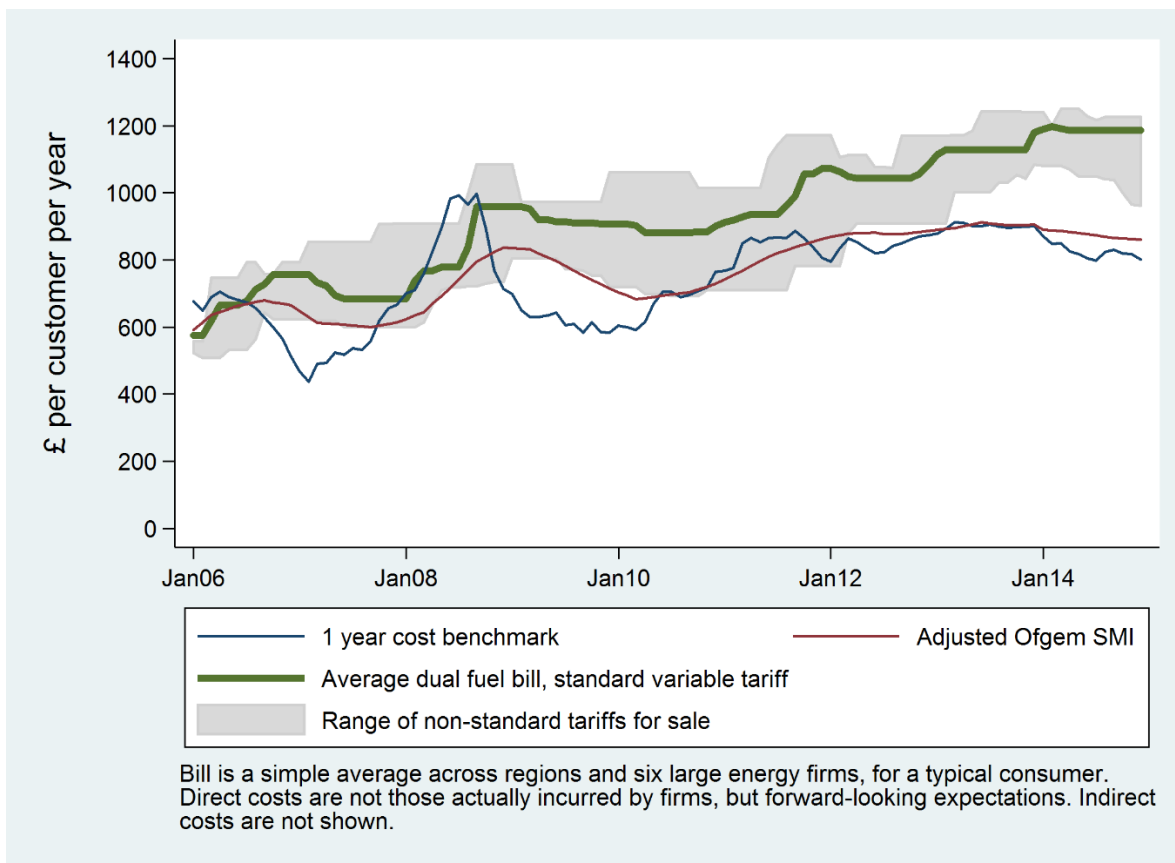
127. In the next phase of the investigation, we intend to develop this analysis using a range of different measures of wholesale costs – distinguishing in particular between company-specific and industry-wide costs and between historical and forward-looking measures. We will seek to assess to what extent the so-called ‘rockets and feathers hypothesis’ (that prices respond more quickly to increases in wholesale costs than reductions) applies in practice. In assessing this and other evidence available to us, we will consider to what extent it is consistent with a lack of competition and/or alternative explanations. We would welcome views and evidence on the relationship between measures of direct cost and tariff levels, and potential implications for competition.
128. Figure 2 below shows the evolution in the price of non-standard tariffs offered by the large energy firms, compared with changes in the same measures of expected direct costs over the last ten years.²⁷ The grey area in the chart shows the range of non-standard tariffs available for sale to customers at any point in time.

²⁶ We note that the gap between direct costs and the average bill is not a measure of realised profit. Costs reflect expectations rather than costs actually incurred by any individual firm and do not include indirect costs.

²⁷ At this stage we only have data from five of the Six Large Energy Firms, but intend to supplement this with data from the remaining supplier in the next phase of the investigation.

FIGURE 2

Evolution of non-standard tariffs and SVT against expected direct costs



Source: CMA analysis of data collected from ICIS, Ofgem and five of the Six Large Energy Firms.

129. The non-standard tariffs show a wide range of prices, both above and below the average SVT offered by the suppliers. In some periods, particularly 2011, some non-standard tariffs are priced below both measures of expected direct costs. From 2013, the range of tariffs tightens.
130. Figure 2 does not include tariffs from independents. We will seek to include this in the next phase of the investigation.

Overall current thinking on the nature of competition in retail energy markets

131. Our initial view is that the history of liberalisation and regulatory decisions have had a strong influence on the nature and strength of competition between the Six Large Energy Firms. The evidence we have reviewed appears to suggest that in recent years there have been weaker competitive pressures on the SVT than on non-standard tariffs.
132. In the following sections, we consider the strength of evidence that competition may not be working effectively in certain segments of GB retail energy

markets, considering hypotheses relating to: inactive customers; supplier behaviour; and regulatory interventions.

Inactive customers

133. Our initial view, based on our review of the evidence to date, is that there are a significant number of domestic energy customers who are relatively inactive. This view is based in part on our analysis that shows that there are considerable gains from switching tariff and/or supplier, which currently go unexploited, and in part on our survey results.

Gains from switching

134. We analysed the gains from switching over the period Quarter 1 2012 to Quarter 2 2014. We found that during this period, over 95% of the dual fuel domestic customers of the Six Large Energy Firms could save by switching tariff and/or supplier and that the **average** saving for these customers was between £158 and £234 a year (depending on the supplier).²⁸ If we restrict our analysis to switches between the same type of tariff (which would preclude moving from an SVT to a more competitive fixed tariff, for example) we find that the average savings for those who could save are lower but still substantial – between £111 and £153 a year (depending on the supplier).

Barriers to switching

135. We recognise that, for some customers, failing to switch even when there are savings to be made may not be an indication of a competition concern. They may place sufficient weight on the quality of service provided by their current supplier, for example, for this to outweigh the financial gain on offer. Therefore, a major focus of the next stage of our investigation will be on understanding which sorts of customer do not switch and why, and in particular on identifying the nature of any barriers to switching they face.
136. Our initial analysis of the survey sheds some light on these questions. About half of survey respondents said that they had never switched and around a third said they either had never considered switching or thought it was impossible. In relation to demographic characteristics, people who were more likely to be in the latter category included: those aged 65 and over; those in social accommodation; those with no qualifications; and those on lower incomes.

²⁸ All figures are based on average consumption. This analysis does not include the domestic dual fuel customers of one of the Six Large Energy Firms. They will be included in the next phase of the analysis.

137. Given our observation in paragraph 122 above that SVT customers have, in recent years, paid higher prices than those on non-standard tariffs, we are particularly interested in understanding which domestic customers are on the SVT and the potential barriers to engagement they may face. Our initial analysis of the survey evidence suggests that, relative to customers on fixed-price tariffs, customers on the SVT:
- are less likely to have considered switching, shopped around, switched provider or switched tariff with an existing provider;
 - are less educated, less well-off, more likely to describe themselves as struggling financially, less likely to own their own home, less likely to have internet access, more likely to be disabled or a single parent; and
 - more likely to be with an ex-incumbent supplier and to think switching is a hassle, that there are no real differences between suppliers and that something may go wrong if they switch.
138. In the next phase of the investigation, we will seek to understand the barriers to engagement and switching faced by customers, such as those relating to a lack of information, and the 'hassle' involved in switching. We will draw on evidence from the survey and other sources, including our gains from switching analysis.

Price comparison websites and smart meters

139. Third party intermediaries (TPIs) such as collective switching schemes and PCWs can provide a means by which consumer engagement in the energy market can be increased.
140. We have conducted an initial review of the role of PCWs in helping consumers overcome barriers to engagement. We have found that the use of PCWs has increased significantly over the last three years – the proportion of domestic customers who used a PCW for switching, last time they switched supplier, has increased from around 16% in 2011 to around 31% in 2014. Over the last four years, the proportion of switches facilitated by a PCW has generally been higher for the independents than for the Six Large Energy Firms.
141. Ofgem manages a voluntary Confidence Code, the aim of which is to give domestic customers the confidence that accredited PCWs are independent and that the information provided will be accurate and reliable. Following a consultation, Ofgem has decided to amend the Confidence Code such that

PCWs will no longer be able to present as a default only fulfillable tariffs,²⁹ and will be required to use a standardised methodology for estimating the savings from switching. We recognise the need to strike a balance between fostering confidence in the use of PCWs in retail energy markets and ensuring that PCWs have a commercial incentive to remain in the market and help improve customer engagement, and we would welcome views on whether Ofgem's recent decisions and proposed changes to the Code strike the right balance.

142. We have also considered the potential role of smart meters – which will be rolled out to all homes by 2020 – in improving customer engagement in retail energy markets. The evidence we have reviewed suggests that smart meters may lead to an overall reduction in energy bills and that they may also lead to a more active engagement in the market from a subset of customers, through 'time-of-use' tariffs, which give the opportunity and incentive to shift demand away from peak periods (although, as noted in paragraphs 172 to 174 below, we have some concerns that elements of the settlement regime will need to be reformed to facilitate this).
143. Smart meters may also improve broader customer engagement by facilitating quicker switching, ensuring accurate billing and making energy consumption more visible. We would welcome further views and evidence on the likely size of these benefits and on any regulatory or other barriers to ensuring the benefits from smart meters are realised in practice.

Supplier behaviour

Unilateral market power

144. Elements of the evidence that we have reviewed to date appear to us at this stage to be consistent with the hypothesis that the Six Large Energy Firms have UMP over their SVT customers.
145. Our survey data and gains from switching analysis provide some evidence that would suggest that: a substantial proportion of domestic customers are disengaged, which would tend to insulate suppliers from competitive pressures for those customers; and that SVT customers are more likely to be disengaged than those on non-standard tariffs. We will develop this analysis further. We have not yet taken a view on the strength of arguments that the Six Large Energy Firms attempt to keep their SVT customers disengaged, so as to retain them on high tariffs.

²⁹ A fulfillable tariff is one for which a PCW can facilitate the switch and is paid a commission for doing so.

146. We have observed that the Six Large Energy Firms have consistently charged higher prices for the SVT for gas and electricity compared with non-standard tariffs, which provides some support for the view that these suppliers can segment the market and price discriminate. As noted in paragraphs 125 and 126 above, reductions in different measures of direct costs do not appear to have translated rapidly into reductions in the SVT in recent years, which might be suggestive of weak competition. In the next phase of the investigation, we intend to analyse further the relationship between prices and a variety of measures of cost – firm-specific, industry-wide, historical and forward looking.
147. We have also observed a wide dispersion of indirect costs per domestic customer account between the Six Large Energy Firms, which may be indicative of relatively weak price competition. We recognise, however, that we need to develop this analysis further, and gain greater assurance on the quality and comparability of data we have received from the Six Large Energy Firms, before we can draw a stronger conclusion from this evidence.
148. We are continuing to look at whether overall levels of profitability in energy retail have exceeded an appropriate benchmark. We have conducted an analysis of gross margins and EBIT margins for both electricity and gas supplied by the Six Large Energy Firms to domestic customers and begun an analysis of segmentation by tariff type. We will develop this analysis in the next phase of the investigation and consider a range of potential benchmarks for assessing whether margins are excessive or not.
149. We have considered calculating the ROCE for energy suppliers, which could then be compared with their weighted average cost of capital (WACC). One of the issues we have faced is whether and how to adjust the capital base to account for the additional collateral requirements a stand-alone supplier may face. We have yet to reach a conclusion on this.

Tacit coordination through public price announcements

150. The possibility of tacit coordination between the Six Large Energy Firms was one of the five key market features identified by Ofgem in the reference document as having a potentially harmful effect on competition. The specific mechanism it identified was the public price announcement behaviour of the Six Large Energy Firms.
151. We have carried out an assessment of whether the public price announcements of the Six Large Energy Firms are likely to provide a route for tacit coordination over the SVT. We have yet to form an overall conclusion on whether the necessary conditions for coordination to be sustainable are likely to be met in relation to SVT price announcement behaviour:

- We consider that the presence of relatively undifferentiated energy products and the fact that customers have easily identifiable characteristics may help lead to a situation in which firms could reach an understanding and monitor the terms of coordination. However, the evidence we have received indicates that there are some differences in business models and short- to medium-term differences in energy costs between the Six Large Energy Firms, which may make it more difficult to align and maintain incentives across the group.
 - In relation to internal sustainability, the evidence suggests that there is a high level of transparency in relation to prices, market shares and cost and margin information and relatively stable market shares for SVT customers.
 - In relation to external sustainability, we note that there has been considerable entry into retail energy over the past three years, with the domestic market share of independent suppliers growing from 1 to 7% for electricity and from 1 to 8% for gas. However, the evidence we have reviewed suggests that there is a segment of retail energy markets that is relatively disengaged and that the level of disengagement may be sufficient for coordination over this segment to be externally sustainable.
152. We have considered whether the Six Large Energy Firms may be using the announcements to signal their intentions to rivals and for rival suppliers to be in a position to adjust their behaviour accordingly. We have conducted an analysis of the public price announcements of the Six Large Energy Firms over the last ten years, reviewing in particular: the date of any public announcement, the date of implementation and the date the supplier started notifying customers. Significantly, we have found no evidence to date of announced pricing plans changing in response to subsequent announcements made by rivals, either by altering the price or by changing the date on which the new prices came into effect.
153. Overall, our initial view at this stage is that the behaviour we have observed is likely to be consistent with unilateral incentives. Some suppliers have stated that the company that announces price increases first risks losing more customers than those that follow, which would provide a unilateral explanation for observations of clustering in price announcement behaviour. We intend to assess the strength of these arguments, and consider whether they are also likely to apply, in the same way, for price reductions.

Regulatory interventions

154. The supply of electricity and gas is heavily regulated, and the form that regulation takes has a profound effect on the shape of competition in retail energy markets. We have identified several elements of the regulatory regime that may have a potential impact on competition between suppliers to serve customers, and which we intend to investigate further.

Prohibition of price discrimination (SLC 25A)

155. As noted in paragraph 119 above, in 2009, Ofgem implemented SLC 25A, in an attempt to address concerns that certain groups of customers were not benefiting from competition.
156. The prohibition lapsed in 2012. However, suppliers told us that, following a communication from Ofgem warning against 'pricing practices which are unjustified [...] returning to the market', they continued to adhere to the principles of SLC 25A in their pricing of SVTs. In December 2014 Ofgem wrote to suppliers to confirm that SLC25A had lapsed and that suppliers were not bound by it in any way.
157. The decision to introduce the prohibition in 2009 has been heavily criticised by two former regulators, Stephen Littlechild and George Yarrow, both of whom have argued that the licence change had the effect of restricting competition to the detriment of customers. We note also that some academic work has been conducted on this topic.³⁰ One independent supplier told us that the prohibition reduced competition in incumbents' home regions and focused competition on the active customer, further segmenting the markets.
158. We note that Figure 1 above is suggestive of an apparent softening of competition in SVTs from 2009 onwards (in that the gap between the average SVT and total costs appears to widen since 2009) and that this broadly coincides with the introduction of the prohibition.
159. We intend to investigate the impact of the prohibition of regional price discrimination further, using both qualitative and quantitative analysis. We considered conducting an econometric analysis to compare the evolution of prices for domestic energy customers with those of a control group before and after the imposition of SLC 25A but, after a process of consultation with parties and

³⁰ Work by Waddams and Zhu (Catherine Waddams Price and Minyan Zhu, [Pricing in the UK Retail Energy Market, 2005 to 2013](#), ESRC Centre for Competition Policy and Norwich Business School) analysed the pattern of SVT pricing behaviour among the Six Large Energy Firms before and after the introduction of the non-discrimination clause and found that there was less effective rivalry between the regional incumbents and large regional competitors following its introduction.

other stakeholders, we have, at this stage, decided not to carry out this analysis due to the lack of a suitable counterfactual to which to compare domestic energy prices.

160. We have also heard views that, while SLC 25A has now lapsed, there is a risk that it may be in suppliers' mutual interests to continue to act, going forward, as if it is in place, even after Ofgem's recent clarification. We will consider the strength of these views in the next phase of our investigation.

Retail Market Review tariff rules

161. In 2013 Ofgem proposed changes to licence conditions with the objective of making the market simpler, clearer and fairer to customers, leading to a set of RMR reforms that took effect in 2014, as described in paragraph 120 above.

162. We have heard mixed views from the Six Large Energy Firms on the likely impact of these reforms. Three independent suppliers expressed the view that the RMR tariff restrictions are a barrier to innovation, particularly in a market that is moving towards smart meters.

163. While we have formed no view as yet on the impact of the RMR reforms, we have collected a range of evidence and data that will help us to assess this. This includes our customer survey and tariff, and other data that we have collected from suppliers. In the next phase of our investigation, we will consider the likely impact of RMR, particularly the tariff reforms, on competition and consumer engagement in retail energy markets, focusing in particular on the following questions:

- What is the strength of evidence that the reforms have already/are likely to improve customer understanding and overcome barriers to engagement? We will wish to draw on our own evidence and that provided by others including Ofgem.
- What is the strength of evidence that tariffs that customers value have been eliminated and what is the risk that future innovation might be stifled (for example, in relation to the development of time of use tariffs)? We understand that a number of exemptions and derogations have been provided for certain types of tariff and we will want to understand on what basis these are provided.
- What is the strength of evidence that the reforms restrict competition? For example, we will want to assess whether they restrict competition over PCW commission rates by preventing PCWs from offering a cheaper deal through their website in exchange for a commission sacrifice.

Social and environmental obligations and policies

164. Energy suppliers are increasingly used as agents in the delivery of government social and environmental policies. They are currently involved in the delivery of the Warm Home Discount, the Energy Company Obligation, small scale Feed-in-Tariffs and smart meters.
165. We noted in the issues statement that we would consider whether the size threshold (250,000 accounts) below which a supplier is not required to meet the ECO obligation effectively acts as a barrier to expansion for small and mid-tier suppliers.
166. Two of the independent suppliers we spoke to said that they decided to delay growth in customer numbers for a short period in order to avoid incurring the costs of the ECO. Another supplier said that it had debated delaying growth for the same reason, but had decided not to. The other independent suppliers we spoke to, which had not yet passed the threshold, generally held the view that the threshold was likely to represent a significant barrier to expansion.
167. Social and environmental obligations on suppliers represent only a proportion of the overall costs borne by energy consumers as a result of government social and environmental policies. The costs of upstream policies such as ROCs and the carbon price floor also impose significant costs, while CfDs and the Capacity Market are expected increasingly to do so in the future.
168. We note that the costs of these policies fall disproportionately on electricity rather than gas and that, combined with the different carbon intensity of electricity and gas, this results in a situation in which the domestic consumption of electricity attracts a much higher implicit carbon price than the domestic consumption of gas.³¹ We will wish to consider the potential implications this has for competition, for example on the viability of electrical heating systems as an alternative to gas.

Settlement and reconciliation

169. Settlement is the system by which disparities between the volumes of energy covered by suppliers' contracts and the volumes they actually use are identified and paid for. We have some initial concerns that elements of the settlement system for both electricity and gas fail to provide the right incentives to suppliers to compete in retail markets.

³¹ We note, for example, the recent [analysis](#) conducted by the Institute of Fiscal Studies into this area.

170. Due to the infrequency of meter reads, the consumption for domestic gas customers is settled against an annual quantity (AQ) assigned to their meter, a measure of expected annual consumption based on historical metered volumes and adjusted to seasonal normal demand. The AQ value can only be adjusted during a specified AQ review period and only if meter reads demonstrate that actual consumption is at least 5% higher or lower than the AQ value. Even if an AQ value is altered, there is no ex post reconciliation to reflect the fact that a supplier has been settled against an inaccurate AQ in the past.
171. We have some concerns that the inaccuracy of AQs and the lack of reconciliation may disadvantage certain types of supplier – notably those that have been particularly effective in helping their domestic customers reduce their gas consumption. We note that an update of the gas settlement system is planned, in an attempt to address some of these issues. At this stage, we are not clear how comprehensive the proposed solution will be – we have received some representations that elements of the proposal are deficient – and we will look to investigate this in the next phase of our investigation.
172. In relation to electricity, the settlement process is set out in the Balancing and Settlement Code (BSC). Settlement takes place every half hour but the vast majority of customers do not have half-hourly meters, such that their consumption must be estimated. This is done by assigning customers to one of eight profile classes, which are used to estimate a profile of consumption over time and allocate energy used to each half-hour period.
173. In principle, the roll-out of smart meters should obviate the need for profiling, since accurate half-hourly meter reads will be available, which could be used for settlement. However, there are currently no concrete proposals for half-hourly settlement of domestic customers even after the full roll-out of smart meters.
174. We have initial concerns that this may distort incentives and competition in a number of ways – notably, the absence of half-hourly settlement could mean that suppliers are not incentivised to encourage their domestic customers to change their consumption patterns (as the supplier will be charged in accordance with their customers' profile patterns). This may distort suppliers' incentives to innovate and bring in new products and services such as time-of-use tariffs, which reward customers for shifting consumption away from peak periods. Since peak load shifting has the potential to reduce costs substantially, this risks increasing costs to the sector and hence the price paid by customers overall.

Microbusinesses

175. The terms of reference for this investigation cover the retail supply of energy to both households and microbusinesses. A microbusiness is defined in the terms of reference as a non-domestic consumer that meets one of the following criteria:
- employs fewer than ten employees (or their full-time equivalent) and has an annual turnover or balance sheet no greater than €2 million;
 - consumes no more than 100,000 kWh of electricity per year; or
 - consumes no more than 293,000kWh of gas per year.
176. We have reviewed a range of information relating to microbusinesses, including: responses to questionnaires sent to the Six Large Energy Firms; Ofgem surveys and research; evidence provided to us in submissions and hearings; and our assessment of retail profitability.
177. While this has provided us with an initial evidence base to consider, we note that there is a general lack of data on the microbusiness segment. This is largely because, in ensuring compliance with regulatory obligations, suppliers do not distinguish between microbusinesses and SMEs, and treat all SMEs as microbusinesses unless they are explicitly identified as not being microbusinesses. Data is therefore not collected at microbusiness level. Furthermore, the definitions of SMEs used by the Six Large Energy Firms vary considerably, and these in turn differ from the Ofgem definition of a microbusiness. A focus of our work in the next phase of our investigation will be to try to construct a more robust evidence base, particularly on pricing.

Theories of harm

178. Discussions with third parties, including Ofgem, the Federation of Small Business and Citizens Advice, raised the following concerns that we consider may warrant further investigation:
- Microbusinesses may face barriers to engaging in retail energy markets, similar to those faced by domestic customers.
 - As most energy contracts are negotiated and energy prices are generally not published, this may limit transparency in the non-domestic market.
 - Brokers may not be operating effectively or fairly.

179. The outcome of concern is that a lack of engagement can result in businesses being put on tariffs which are not necessarily the best deal for them and/or that the lack of engagement and transparency weakens competition for these customers and results in generally higher prices for microbusinesses.
180. In relation to engagement, research for Ofgem indicates that microbusinesses are significantly more likely never to have switched (41%) compared with large businesses (19%).³²
181. Prices for business consumers are less transparent than for domestic customers. Suppliers publish their deemed contract prices and some publish other variable contracts, but many prices are not published and many are subject to negotiation. This may result in information asymmetry between suppliers and businesses, weakening microbusinesses' negotiating position.
182. We have noted that the use of PCWs can reduce search costs for domestic customers. Non-domestic customers, in contrast, cannot generally use online services from PCWs or suppliers' own websites, but rather need to call PCWs or suppliers directly. Non-domestic consumers may therefore face greater search costs than domestic consumers.
183. In relation to brokers, Ofgem estimates that there are over 1,000 TPIs operating in the non-domestic energy market, from large organisations to individual advisers. The available evidence suggests that microbusinesses are less likely to have used brokers than larger businesses.
184. We note that, due to concerns about poor non-domestic customer experience using TPIs and the negative impact on future engagement this may have, Ofgem has developed a draft code of practice for non-domestic TPIs, to give non-domestic consumers confidence when using TPIs.

Indicators of potential detriment

185. As set out in the retail profitability working paper, the preliminary results of retail profit margin analysis suggest that margins differ between domestic, SME and industrial and commercial (I&C) customer segments. An analysis of the combined annual revenues and profits generated by the Six Large Energy Firms over the period FY09 to FY13 suggests significantly higher EBIT margins in the SME segment compared with domestic and I&C:

³² [Quantitative Research into Non-Domestic Consumer Engagement in, and Experience of, the Energy Market](#), Report for Ofgem by The Research Perspective Ltd and Element Energy Ltd, December 2013.

- Average margins in the SME segment were 8.6% compared with 3.3% in the domestic segment.
 - Margins were lowest in the I&C segment at 2.1%, a segment outside the terms of reference for the investigation.
186. We note that microbusinesses are a subset of SMEs and we will want to consider, in the next phase of our analysis, whether margins for microbusinesses are likely to differ from those of SMEs as a whole.
187. A further indicator of potential detriment is the use of automatic rollover contracts. Rollover prices are typically higher than negotiated prices, and deemed and out-of-contract (OOC) prices are generally higher than the prices of negotiated contracts and rollover contracts. Comparing the average annual electricity (gas) bill for a typical microbusiness on different contract types showed that as of 1 April 2013:
- a rollover contract was 33% (28%) higher than a retention contract; and
 - a deemed contract was 32% (24%) higher than a rollover contract and 75% (58%) higher than a retention contract.
188. In 2013, 8% of microbusinesses were on deemed contracts for electricity and 9% were on deemed contracts for gas. In 2013, 26% of microbusinesses were on rollover contracts for electricity and 23% were on rollover contracts for gas. We note that five out of the Six Large Energy Firms have withdrawn auto-rollover fixed-term products and may now be placing customers on variable products with shorter notice periods. However, the evidence we have seen suggests that these may be considerably more expensive than some acquisition and retention products and if so, we will want to understand the reasons for this.
189. The evidence on gross margins by product type, which we have obtained from some of the suppliers, suggests that margins are much higher on deemed and OOC products than on other products. We have also seen some evidence which suggests that the margins on variable products may be higher than those on the auto-rollover contracts that they replaced.
190. We note that the prices for deemed and OOC contracts may be higher due to the additional costs suppliers face for consumers on these contract types. Suppliers reported to Ofgem that there was a greater risk of non-payment among such customers.

Overall current thinking and next steps

191. Based on the evidence we have seen, we have some initial concerns regarding the prices paid by certain microbusinesses and the barriers they may face in engaging in retail energy markets. As noted above, a main focus of the next stage of our investigation will be on developing the evidence base. In particular, we will seek to secure information on the prices paid by microbusinesses, relative to those paid by other SME customers, how these vary across product type (eg acquisition, auto-rollover, evergreen and deemed products) and on the costs to serve microbusinesses, including the potential effects of poor creditworthiness.

Updated theory of harm 5: the broader regulatory framework, including the current system of code governance, acts as a barrier to pro-competitive innovation and change

192. A clear cross-cutting theme that has emerged from our investigation to date relates to the impact of regulation on competition in energy markets. We have noted that the regulatory framework has been fundamental in shaping the nature of competition in both wholesale and retail energy markets. The rules and regulations that comprise this framework are set out variously in legislation, in licence conditions and in industry codes.

193. Industry codes are detailed multilateral agreements comprising technical rules that govern participation in the energy sector. Several parties have expressed a view that elements of the codes system risk affecting competition either through distorting incentives, increasing barriers to entry, or stifling innovation. We consider the issue to be sufficiently important to warrant consideration under a separate theory of harm.

194. At this stage, we have identified two separate issues that we wish to investigate further:

- First, whether the number of codes in electricity adds to barriers to entry and/or expansion.
- Second, and more fundamentally, whether the current system of industry code governance acts as a barrier to pro-competitive innovation and change.

195. This section draws on the evidence and analysis set out in working paper 23 (Codes).

Number of codes in electricity

196. There are seven codes in electricity, each with their own administration and governance arrangements, including the BSC, containing the rules and governance arrangements for the balancing mechanism and settlement; and the Connection and Use of System Code, setting out the principal rights and obligations concerning connection to and/or use of the transmission system.
197. Elexon, the body that administers the BSC, indicated to us that it considers there are too many codes in electricity and that rationalising them will remove potential barriers to competition. We intend to consider the strength of these arguments, in particular whether:
- the number of codes adds to the costs of participation for smaller companies;
 - the need for coordination between different code governance arrangements acts as a delay to reform; and
 - the number of codes adds to overall collateral requirements.

System of industry code governance

198. Ofgem has submitted that the industry-led approach to code change is appropriate for delivering incremental, non-contentious changes to operational procedures, but is not suited to delivering significant reforms, particularly pro-competitive changes that may not be in the interests of incumbents. Some independent suppliers have expressed the view that that modification panels have no desire to implement change due to the fact that they largely reflect the views of incumbents.
199. We have noted that, for certain codes, there do not appear to be binding timescales for decision-making. This may create a risk that reforms that do not coincide with the interests of incumbents may be delayed or not implemented at all. We note, for example, that there are no plans to implement half-hourly settlement for domestic customers even after the full roll-out of smart meters, despite the fact that this appears important to the delivery of benefits from the roll-out programme. It appears that some issues – notably the introduction of a locational component to the pricing of losses – have been debated for many years without resolution. Neither does the Significant Code Review process appear to have shortened timescales.
200. We will wish to consider to what extent the nature of industry participation in current governance arrangements tends to favour the interests of incumbents over new entrants, smaller suppliers and generators and/or consumers. We

will also wish to consider whether the timescales and processes that apply to modification proposals risk creating barriers to innovation.

Overall current thinking on codes

201. We recognise that there is an important balance to be struck between providing companies with a degree of insulation from regulatory risk on the one hand, and allowing for pro-competitive innovation and change on the other. We have not formed a conclusion as to whether the current arrangements strike the right balance in this regard, and would welcome the views of a wide range of parties on this.

Annex A: List of working papers

1. Descriptive statistics: generation and trading
2. Liquidity
3. Wholesale electricity market rules
4. Market power in generation
5. Foreclosure
6. Wholesale gas market
7. Locational pricing in the electricity market in Great Britain
8. Capacity
9. Descriptive statistics: retail
10. Price comparison websites
11. The pricing strategies of the Six Large Energy Firms in the retail supply of electricity and gas to domestic customers
12. Customer survey: GfK Report
13. Analysis of the potential gains from switching
14. Cost pass-through
15. Microbusinesses
16. Gas and electricity settlement and metering
17. Case studies on barriers to entry and expansion in the retail supply of energy
18. Analysis of generation profitability
19. Profitability of retail energy supply: profit margin analysis
20. Legal and regulatory framework
21. Coordination in the retail energy market facilitated by price announcements
22. Analysis of the cost of capital of energy firms
23. Codes

Annex B: Former theories of harm

The theories of harm we identified in the issues statement were as follows:

- Theory of harm 1: opaque prices and/or low levels of liquidity in wholesale electricity markets create barriers to entry in retail and generation, perverse incentives for generators and/or other inefficiencies in market functioning.
- Theory of harm 2: vertically integrated electricity companies harm the competitive position of non-integrated firms to the detriment of the customer, either by increasing the costs of non-integrated energy suppliers or reducing the sales of non-integrated generating companies.
- Theory of harm 3: market power in electricity generation leads to higher prices.
- Theory of harm 4: energy suppliers face weak incentives to compete on price and non-price factors in retail markets, due in particular to inactive customers, supplier behaviour and/or regulatory interventions

These have been replaced by the updated theories of harm set out in the main body of this document.