House of Lords Select Committee on Economic Affairs: The Economics of UK Energy Policy

---

Consultation response from the

Centre for Competition Policy

University of East Anglia, Norwich Research Park, Norwich NR4 7TJ

Date: 10 September 2016

Authors:

- Dr David Deller
- Elizabeth Errington
- Prof Morten Hviid
- Prof Catherine Waddams

This consultation response has been drafted by the named academic members of the Centre, who retain responsibility for its content.

The Centre for Competition Policy (CCP)

CCP is an independent research centre established in 2004. CCP's research programme explores competition policy and regulation from the perspective of economics, law, business and political science. CCP has close links with, but is independent of, regulatory authorities and private sector practitioners. The Centre produces a regular series of Working Papers, policy briefings and publications. An e-bulletin keeps academics and practitioners in touch with publications and events, and a lively programme of conferences, workshops and practitioner seminars takes place throughout the year. Further information about CCP is available at our website: www.competitionpolicy.ac.uk

CCP Response to House of Lords 'The Economics of UK Energy Policy – Call for Evidence'

We are pleased to provide evidence to the Select Committee on the economics of UK Energy Policy and the appropriate roles for the market, regulator and government. In this response we focus on CCP's academic papers on consumer behaviour in the residential energy market. The broad thrust of this evidence is that widespread consumer engagement with the energy market cannot be assumed, but non-engagement is not necessarily a policy 'failure'; rather it is an empirical fact which should inform decision making and policy design. We also wish to highlight that concerns about distribution and equity are unlikely to be effectively remedied through interventions in the market mechanism: a more effective way of alleviating such concerns is probably to address the limited resources of "less well-off" households rather than altering "energy pricing".

Are there failures in the energy market and what measures are needed in the future to correct them?

Putting aside environmental externalities, we suggest that the starting point for the Select Committee to understand potential failures in the UK energy market should be the evidence from the CMA's 'Energy Market Investigation'. While the CMA's remedies are hotly debated, the investigation produced huge quantities of evidence that support two conclusions about the energy market: (i) broadly the wholesale energy market functions reasonably well, and (ii) the core issue in the retail energy market is weak consumer response. Given the time, expense and expertise devoted to this investigation, the Select Committee should be cautious before rejecting the CMA's evidence base, though it is appropriate to assess its detailed arguments and, in particular, its remedies in a critical fashion.

CCP's overall assessment of the CMA's energy market remedies is that while many are beneficial they are unlikely to be transformative. The CMA is placing significant and possibly overly optimistic hope in smart meters to solve issues of low consumer engagement. As argued below, we doubt the CMA's remedies will be transformative as we question policymakers' ability to fundamentally alter the level of consumer engagement in the energy market. While policymakers can improve consumer engagement *at the margin*, they may need to accept that 'low' engagement with the energy market is a fixed characteristic, however unfortunate. Efforts making it easier for consumers to engage with the market should be supported, but they are unlikely to resolve the central political issue in retail energy markets: the price differential between 'active' and 'inactive' consumers.

Policymakers must recognise that competition is a process with winners and losers along the way and that its long-run outcomes (if they are reached) rarely correspond to a simple model of 'perfect competition' where all consumers are charged the same 'lowest' price. Consumers may have perfectly rational reasons not to engage with the energy market. The competitive process means that over time firms will learn which consumers are 'active' and which are 'inactive' and will price discriminate between the two.[1] That price discrimination occurs does not necessarily mean inactive consumers are subsidising low prices for active consumers. Neither does it necessarily indicate a 'failure' within the energy market: identifying differences in different groups' willingness to pay is an inherent aspect of a market's operation. Economic theory and practice suggests that policymakers should be very

[1] The crucial difference between 'active' and 'inactive' consumers is that their switching behaviour reveals that they have different price sensitivities (elasticities of demand). As firms are able to identify these two groups and consumers cannot resell energy, firms have a natural incentive to price discriminate and raise profits.

cautious before acting to end price discrimination as it may have significant negative consequences, as has already been observed in energy markets. If the political process deems it important that all consumers receive similar prices, the existing evidence indicates that the market will not deliver this outcome and policymakers will need to use alternative mechanisms such as full price regulation. There are likely to be costs associated with these alternative mechanisms such as reduced efficiency, there is no 'free lunch'.

Consumer engagement per se should not be treated as an end policy objective, it is merely a means to an end, the correct policy objective is to maximise consumer 'welfare' or, alternatively, total welfare [2]. Engagement imposes an opportunity cost upon consumers: if they are engaging with the energy market, they are unable to undertake other activities. Any cost-benefit analysis of policies stimulating engagement must include this opportunity cost.[3] The CMA's proposed database of inactive consumers may raise consumer engagement, but at the cost of additional hassle so its overall welfare impact may be disappointing.

CCP Evidence on Consumer Engagement:

CCP has for many years conducted considerable empirical research to understand consumer behaviour in regulated markets. The core results can be summarised as:

1. The size of monetary savings is a core driver of consumer switching, although the presence of substantial monetary savings does not guarantee consumers will switch
2. The level of switching varies systematically across different types of consumers
3. Consumers may make 'mistakes' when choosing a tariff so they pay more than necessary[4], although, through learning[5], these mistakes may diminish through time.

[2] Another legitimate assessment of welfare might give a disproportionate emphasis to the position of 'vulnerable' consumers.

[3] A cost benefit analysis which does this is: Financial Conduct Authority (2015), 'Increasing transparency and the engagement at renewal in general insurance markets', Consultation Paper CP15/41, December 2015, available at: http://www.fca.org.uk/your-fca/documents/consultation-papers/cp-15-41.

[4] Wilson and Waddams Price (2010) report that among UK energy consumers who switched exclusively for price reasons less than half of the total gains available were captured by switching consumers. At least 17% of these consumers reduced their monetary surplus after switching. See Wilson, C.M. and C. Waddams Price (2010), 'Do Consumers Switch to the Best Supplier?', Oxford Economic Papers, 62, pp. 647-668.

[5] Ketcham et al. (2012) note that while many Americans appeared to overpay in the first year following a healthcare insurance change, in the second year many consumers switched supplier or reduced the amount by which they overpaid. Similarly, Miravete and Palacios-Huerta (2014) find that when optional metering was introduced into the Kentucky telephone market in 1986 consumers again rapidly corrected initial mistakes regarding a tariff choice problem. Miravete and Palacios-Huerta also found that households learnt at different rates: households facing a more challenging choice problem were more likely to make mistakes and took longer to correct them. See Ketcham, J., C. Lucarelli, E. Miravete, and M. C. Roebuck (2012), 'Sinking, Swimming, or Learning to Swim in Medicare Part D?', American Economic Review, 102 (6), pp. 2639–2673, and Miravete, E. and I. Palacious-Huerta (2014), 'Consumer Inertia, Choice Dependence and Learning from Experience in a Repeated Decision Problem', Review of Economics and Statistics, 96(3), pp. 524-537.

Monetary Savings and Switching Behaviour: The importance of monetary savings as a central driver of consumer switching is demonstrated in: Waddams Price and Zhu (2016a)[6], Deller et al. (2014)[7], Flores and Waddams Price (2013)[8] and Giulietti, Waddams Price and Waterson (2005)[9].

That large monetary savings can be insufficient to guarantee switching is demonstrated by Deller et al. (2014) who studied consumer decisions in a collective switching event in the UK energy market entitled 'The Big Switch' (TBS). Aggregated across all TBS participants, the maximum switching rate only reached around 43% even when consumers were offered annual savings of more than £300 (see Figure 1 below).[10] If annual savings are expressed in percentage terms the result is the same: a saving of 20-25% corresponds to a maximum switching rate of around 41%. These results are particularly striking since, to receive an offer, these consumers had already expended effort to provide their full energy details, and accepting the offer required minimal further action. Similarly, as TBS was linked to Which?those who took part are more informed and engaged than an 'average' consumer.

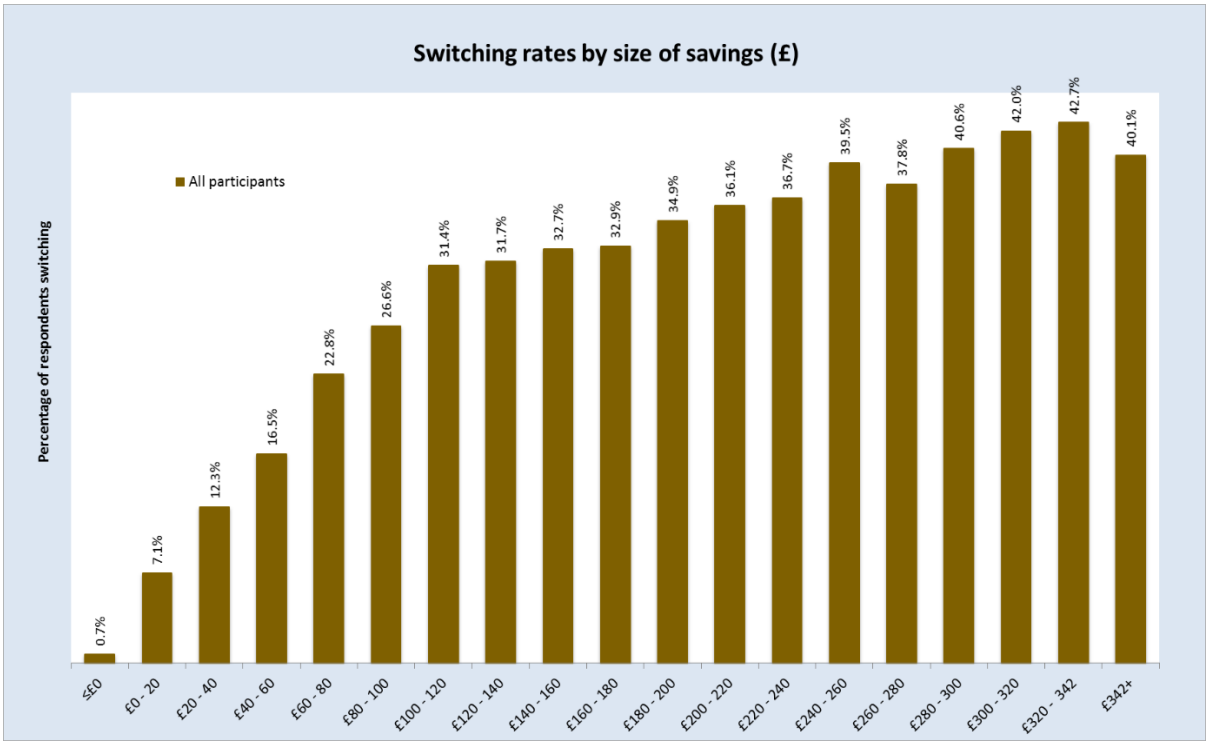

Figure 1: Switching rates for all participants in 'The Big Switch' broken down by the saving size

[6] Waddams Price, C. and M. Zhu (2016a), 'Empirical Evidence of Consumer Response in Regulated Markets', Journal of Competition Law and Economics, 12(1), pp. 113-149

[7] Deller, D., M. Giulietti, J.Y. J.Y. Jeon, G. Loomes, A. Moniche and C. Waddams (2014), 'Who Switched at 'The Big Switch' and Why?', Report for Which?, the UK's consumer association, available at: http://competitionpolicy.ac.uk/documents/8158338/8194340/Big+Switch+-+Results.pdf/2e01588d-6564-4e28-b06d-233eaad389c4

[8] Flores, M. and Waddams Price, C. (2013), 'Consumer Behaviour in the British Retail Electricity Market', CCP Working Paper 13-10, available at: http://competitionpolicy.ac.uk/documents/8158338/8235394/CCP+Working+Paper+13-10.pdf/2ee68805-470a-4fea-b5f7-7678f52b9971

[9] Giulietti, M., C. Waddams Price and M. Waterson (2005), 'Consumer Choice and Industrial Policy: a study of UK Energy Markets', The Economic Journal, 115(506), pp. 949–968

[10] Some additional switching may have gone unrecorded where TBS prompted consumers to consider switching but the consumer completed their switch outside TBS system.

For a rational consumer to switch the expected gains must exceed the expected costs. In addition to the opportunity cost of time spent searching for cheaper tariffs and completing a switch, other expected costs include: (i) contractual terms, such as exit fees, and (ii) uncertainty regarding a new suppliers' quality. That consumers choose not to switch when presented with large potential savings does not necessarily mean they are behaving irrationally.

Other Barriers to Switching: The purpose of Deller et al. (2014) was to identify and quantify other factors, beyond monetary savings, which deter switching. The authors find that a wide range of non-price factors influence the switching decision, even for a homogenous good such as energy. These factors include: confidence in quoted savings, concerns about the switching process, preferences regarding firms' ethical and environmental behaviour, time pressures when making the switching decision and households' demographic/socio-economic characteristics.

Not only are there many factors that may deter switching, for particular factors consumers that do not switch may have based their decision on erroneous beliefs. Policymakers providing information about the 'reality' of switching may raise consumer engagement. Figure 2 from Deller et al. (2014) highlights that TBS participants who did not switch over-estimated the time it would take to switch relative to the actual time it took switchers to complete their switch. Effective policies must both reduce consumers' time commitment and their expectations of the commitment.

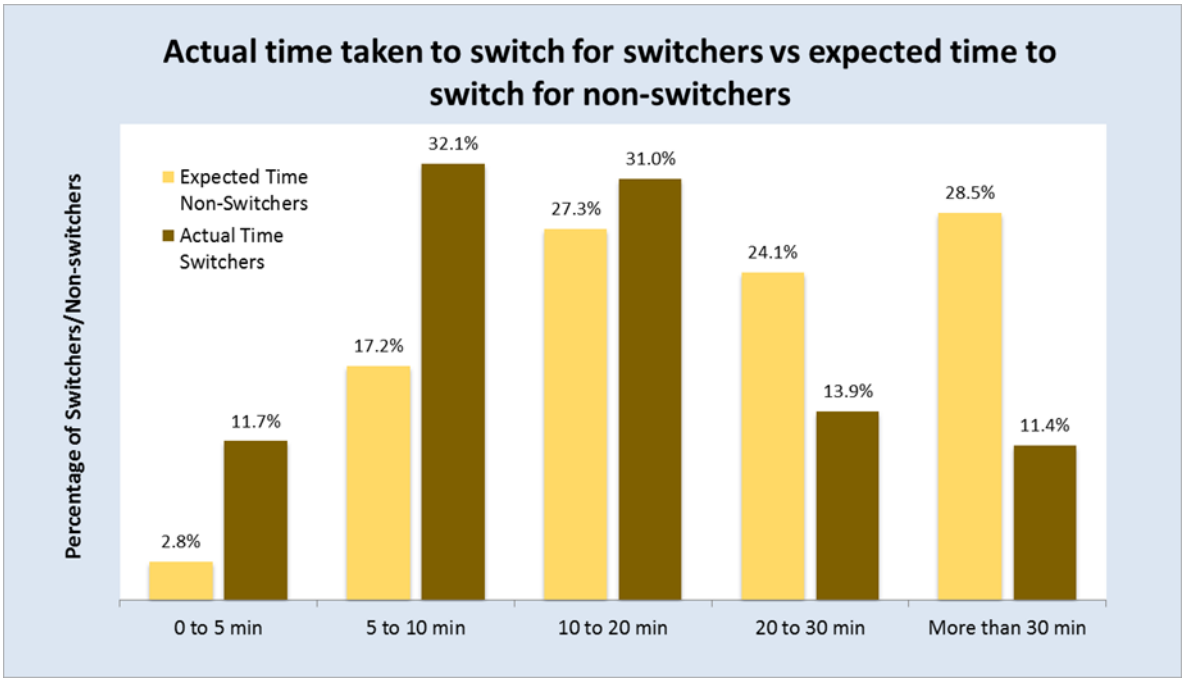

Figure 2: Expected time to switch for non-switchers vs actual time to switch reported by switchers in 'The Big Switch'

Furthermore, when considering time required to switch as a barrier to engagement it is important to note that 'time to switch' has two potential meanings: (i) the time between a consumer choosing to switch supplier and when supply from the new supplier begins, and (ii) the amount of time required from consumers in the process of completing a switch. While policymakers may have a greater ability to address (i), (ii) may be a more significant barrier to switching as it implies consumers incur an opportunity cost.

Differences Across Consumers: The CMA reported that those on low incomes, those with low qualifications, those who rent and those aged over 65 are less likely than average to engage with the

energy market.[11] The issue with descriptive statistics like this is identifying the extent to which the differences in switching rates are directly attributable to being a particular household type, rather than other factors that vary across household types, such as differences in savings available.[12] More robust estimates for the influence of socio-economic characteristics, after controlling for a wide range of variables, are provided in Waddams Price and Zhu (2016a), Deller et al. (2014) and Flores and Waddams Price (2013). For example, Deller et al. (2014) find males are more likely to switch[13], while Flores and Waddams Price (2013) find households with Internet access are more likely to search[14]. Waddams Price and Zhu (2016a) provide comprehensive results for the influence of age, gender, income and education on the probabilities of searching and switching across several markets, including energy[15]. In particular, Waddams Price and Zhu identify a U-shaped relationship between age and the probability of switching.[16]

When considering differences across groups it is worth considering whether interventions to promote engagement will always be effective among 'inactive' groups. For example, efforts to make the transfer of data to Price Comparison Websites (PCWs) easier will not increase engagement by those without Internet access unless someone uses Internet search tools on their behalf. Similarly, the CMA identified that those living in rented accommodation may face extra barriers to participation in the energy market. These barriers may include: (i) limited time in a particular property (limiting the expected gains from switching); (ii) difficulties identifying where a meter is located; (iii) the landlord being responsible for bills (an agency problem); and (iv) multiple tenants sharing responsibility for bills (a public good problem). These issues may be intractable to policy interventions.

Why 'Low' Engagement may be persistent:

As the observed engagement levels are a market outcome, we caution against unrealistic expectations that policy interventions can deliver a step change in consumer behaviour. If there are large inherent switching costs in the energy market, policy action will struggle to overcome these. We fully support campaigns (if deliverable at reasonable cost) which provide information emphasising the benefits and ease of switching. However, we believe energy has intrinsic characteristics that meaning lower switching rates should be expected than in other consumer-facing markets, such as between products in a supermarket. Policymakers may have to accept that the outcomes of markets are imperfect and do not deliver all the benefits of their idealised hopes.

To understand why consumers may find the energy market challenging, consider a supermarket staple such as bread: in a large supermarket there might be 100 different breads in an aisle. Yet we can quickly narrow the choice to perhaps the three options that most closely match our preferences by looking at the size, colour, shape, brand and packaging of the breads. We may then look in detail at the prices and use by dates of the three preferred options before making a final decision. Suppose

[11] The CMA found that 35% of those surveyed with a household income above £36,000 had switched in the past three years compared to 20% of those with an income below £18,000. Similarly 32% of those with degrees had switched in the previous three years compared to only 18% of those with no qualifications. See paragraph 135, page 33, Competition and Markets Authority (2016a), 'Energy market investigation – Summary of final report', 24 June 2016, available at: https://assets.publishing.service.gov.uk/media/576c23e4ed915d622c000087/Energy-final-report-summary.pdf.

[12] The CMA did find that renters and those on low incomes had lower switching rates and higher than average gains from switching. Paragraph 136, page 33, Competition and Markets Authority (2016a).

[13] See Table 7, page 19.

[14] See page 15.

[15] See Table 3, page 127.

[16] See Figure 2, page 126.

instead all we are faced with is a sheet with the 100 price labels that were attached to the shelves of the bread aisle. These labels might state the price, a brief product description including brand, weight and price per gram.[17] The choice problem of selecting the most suitable bread now seems inherently more difficult and challenging as we cannot use our visual senses to evaluate different aspects of the breads. Instead, to make a fully informed choice we have to study each of the labels closely, a laborious task. As any competent business is likely to realise that displaying products helps consumers' choose and therefore increases sales, competition between stores leads to the beneficial outcome of supermarkets displaying all their products on aisles. However, in the energy market there is product with tangible characteristics to display so consumers are stuck in the situation of evaluating written information.

Similarly, it is difficult to think how uncertainty and lengthy time periods before switching benefits are realised can be changed unless the energy market is substantially redesigned. Even with such redesign, uncertainty regarding consumption from weather conditions would remain. Lastly, it seems likely that energy is inherently 'duller' to the average consumer than shopping for clothes or gadgets where many people enjoy the interaction with different products.

An added issue with energy is the antiquated billing system that causes consumers' payments to frequently not match energy use leading to continual reconciliation adjustments on energy bills. A genuine benefit of smart meters is that this issue can be overcome. The resulting simplification and reduced consumer confusion/frustration may be the most significant impact of smart meters on consumer engagement.

Price Comparison Websites: While energy services suffer from their 'invisible' nature[18], the energy market has experienced a substantial innovation to ease comparison: PCWs. PCWs narrow the choice problem to one analogous to comparing a limited number of breads before making a final decision in the supermarket example. However, reliance on PCWs raises new issues:

- How do we know that the rankings are accurate?
- Do the tools allow us to search according to our own idiosyncratic tastes?
- Are we more susceptible to words like 'Special Offer' and other visual cues, when tangible products are absent?
- What if the comparison between the 'narrowed' set of recommended services is still a complex one?

While PCWs are valuable, they cannot convert the energy market into the supermarket aisle example. It is likely that, even after using a PCW, the average consumer will find energy choices more challenging than those in a supermarket. Also, the running of PCWs involves costs; even where PCWs (or other intermediaries) do not charge retail consumers an explicit fee, consumers will nevertheless fund the service: the commission fees charged by PCWs to energy companies will be reflected in energy companies' pricing of retail products.

[17] While a sheet of price labels may sound similar to the experience of online shopping, there are differences which probably make online shopping easier. Firstly, online shops generally include pictures of products that convey information, whereas energy suppliers only have their corporate logo to show. Secondly, many consumers use online shopping to obtain the best price for a product they have already selected: the product might be a repeat purchase or the consumer may have chosen the product after inspecting it in a physical shop.

[18] Adding written information about products' non-price characteristics may make the comparison task even more laborious as there is more information to evaluate.

Given the questions above, we welcome the CMA's specific PCW investigation. While PCWs appear to be 'the consumer's friend', when assessing their evidence it is essential the Select Committee realises they are commercial entities with their own incentives. The evidence of PCWs is valuable, but it should be appraised critically. We question whether the CMA's energy market investigation evaluated PCWs with sufficient sophistication and have concerns about the proposal to end 'whole of market' comparisons.

The importance of PCWs will probably grow in energy once smart meters arrive. If time of use tariffs become common the only way a consumer can compare may be through an automated price comparison tool. If consumers were charged a different price for different half hours of consumption, an accurate annual bill comparison could involve up to 17,520 consumption data points.

There is a general lack of academic research into PCWs, with Ronayne (2015)[19] being an exception. Important policy issues regarding PCWs include:

1. Whole of Market Comparison: Should PCWs be required to show all offers in the energy market? While whole of market comparisons may constrain commercial PCWs revenue earning opportunities, it is not obvious that removing such a requirement has a high probability of benefiting consumers. The policy objective should not be to preserve commercial PCWs business model, but to ensure an effective comparison service for energy consumers[20]. In other countries, such as Belgium and Norway, single 'official' energy PCWs operate.
2. Monitoring and Compliance: Consumers do not need to know whether a PCW receives a commission from an energy supplier, *if* there is a robust monitoring mechanism which ensures individual PCWs accurately perform the comparison they claim. As laid out in a previous consultation response[21], the monitoring mechanism simply needs to verify that the deal 'at the top of the list' is the cheapest on the PCW, where cheapest[22] is within the subset of tariffs that satisfy a consumers stated preferences. We believe that the current assurance framework in energy involves PCWs being given advance notice of audits occurring. A far more robust system, and one which we recommend, would involve a mystery shopping exercise occurring at random intervals in time and using random consumption bundles[23] which are not made public[24] to ensure the exercise cannot be gamed. If the deal at 'the top of the list', i.e. identified as cheapest, on a PCW does not correspond to the cheapest available through the

[19] Ronayne, D. (2015), 'Price Comparison Websites', Warwick Economic Research Papers No. 1056, available at: http://wrap.warwick.ac.uk/66207/1/WRAP_TWERP%201056d%20Ronayne.pdf

[20] See page 15 of Deller, D., M. Hviid and C. Waddams (2016), consultation response to the Competition and Market Authority's 'Energy market investigation – Provisional decision on remedies', available at: http://competitionpolicy.ac.uk/documents/8158338/11690925/CCP+Response+to+CMA+Energy+Market+Provisional+Remedies+Decision_April+2016.pdf/41c9a129-1b58-4558-8aea-169fc163f196.

[21] See Deller, D., M. Hviid and C. Waddams (2015), consultation response to House of Commons Energy and Climate Change Committee's 'Energy Price Comparison Websites Inquiry', available at: http://competitionpolicy.ac.uk/documents/8158338/8261716/CCP+Consultation+Response+-+Price+Comparison+Websites+Inquiry.pdf/5fe76392-7759-4f7b-b7d3-cc90fc1d477c.

[22] While various groups have expressed concerns that PCWs over-emphasise price relative to non-price characteristics, we focus on verifying the price ranking since ranking non-price features is far more subjective.

[23] A random consumption bundle would not just involve a random quantity of energy, but also random selections regarding payment method, meter type and dual fuel tariffs etc.

[24] At least prior to the mystery shopping exercise being carried out.

PCW meeting the conditions specified by the consumer (allowing some margin/frequency of error might be appropriate[25]), there should be a harsh penalty.

3. Methodology for Comparison: When using a PCW some consumers do not have consumption data to hand and rely on an estimation methodology incorporating assumptions to identify the 'cheapest' deal. Ofgem is currently consulting[26] on moving from a regulator specified methodology to allowing PCWs and energy firms to utilise estimation methodologies which they determine themselves. The issue is that all methodologies probably will be incorrect for some consumers some of the time due to inherent uncertainties around future consumption. As a result, the benefits of allowing different firms to use different methodologies is unclear. Allowing alternative methodologies may simply increase consumer confusion as different sites provide different cheapest deals with no way to determine the 'correct' answer.
4. A Common List of Tariffs: If PCWs compete in the manner the CMA desires, so they offer 'exclusive' deals, it is difficult to envisage a single comprehensive list of tariffs being possible/desirable to share among PCWs. However, if 'exclusive' deals do not exist, there is a clearly defined list of tariffs being offered in the energy market. In the latter situation, it seems an unnecessary duplication of cost for Ofgem's Confidence Code to require individual PCWs to compile their own tariff lists to gain accreditation. There is little benefit in encouraging PCWs to compete on who can obtain the most complete tariff list, when an appropriate regulatory rule could result in a single comprehensive list. The true benefits of competition and innovation are likely to relate to PCWs' marketing efforts and efforts to make the comparison and switching process as smooth as possible.

Smart Meters Above we note two predictable consequences of smart meters: (i) the resolution of billing issues should boost consumer engagement and (ii) time of use and other innovative tariffs mean price comparison tools will have an even greater importance. A third predictable consequence is that firms will receive far greater information on individuals' consumption patterns and this probably will lead to further increases in the differences in bills between different consumers who purchase the same quantity of energy. Some of these increased differentials may be desirable as differences in the time pattern of households' consumption will influence the cost of supply[27], but greater information may also allow firms to price discriminate (i.e. offer different prices which are not based on cost differences) to an even greater extent than at present.

While noting the billing benefits of smart meters, the CMA's assumption that smart meters offer a 'panacea' to engagement problems appears questionable. We believe that smart meters introduce considerable uncertainty regarding the development of the energy market, rather than necessarily offering a clear solution to the problem of consumer inactivity. The CMA itself admits that there is little evidence to support its view that smart meters will have a significant positive impact on engagement.[28]

[25] While technical issues may explain errors, such claims should be treated with a suitable degree of scepticism.

[26] See Ofgem (2016), 'Confidence Code Review 2016', 3 August 2016, available at: https://www.ofgem.gov.uk/publications-and-updates/confidence-code-review-2016-consultation.

[27] While time of use tariffs may encourage some consumers to shift their energy consumption, there may be important distributional concerns around households who are unable to move their energy demand. Also, that many households are already charged 'Peak' and 'Off-peak' prices through Economy7 tariff structures means the further gains of time of use tariffs may be limited.

[28] The CMA states: "There is limited evidence on the impact of smart meters on engagement in domestic retail energy markets – and our review of the international experience of smart meter roll-out….did not identify any studies that have specifically addressed this question", paragraph 4.75, page 200, Competition and Markets Authority (2016b), 'Energy market investigation - Provisional decision on remedies', available at:

The quantitative evidence the CMA presents to support its case for smart meter's positive impact on consumer engagement are descriptive statistics from the 'Smart energy outlook' survey relating to smart meter customers reporting greater understanding and/or information regarding their energy bill and greater ability to make energy supply choices compared to non-smart meter users[29]. While we have not investigated the methodology of the 'Smart energy outlook' survey, there are potential issues with using this type of descriptive statistics to justify policy decisions. Firstly, given our understanding that smart meter installation is optional, the higher reported understanding of smart meter users may result from a difference between the *users* of smart meters and other meter types rather than from the smart meters themselves. It seems likely that more active and informed consumers are choosing to have smart meters installed rather than the installation of smart meters *causing* consumers to become more active and informed. Similarly, as the present smart meter users are 'early adopters' they may have a stronger preference for technology and 'gadgets' than the population as a whole. Secondly, as the statistics relate to consumers who have had smart meters installed recently, consumers' long-term engagement may be overstated. The act of installation and contact with an installer may provide an initial and temporary boost to engagement.[30] Lastly, the statistics quoted by the CMA do not provide a direct measure of market engagement, rather they indicate a greater proportion of smart meter users have the necessary information to make a hypothetical product choice.

Also, potential downside risks for consumer engagement from smart meters should not be forgotten. Smart meters will increase the information available to consumers by a substantial amount but, as experience of energy bills shows, such increases do not always generate increased understanding or improved decision making. This is particularly the case given smart meters' potential to enable far more complex tariff structures.

If smart meters do not deliver the assumed benefits regarding consumer engagement and/or the roll out of smart meters is delayed significantly, the CMA's remedies may need to be revisited as they are predicated on remedies only needing to be 'temporary' until smart meters arrive. Martin Cave's dissenting view arguing for a temporary price cap covering the whole of the market is evidence that, in the absence of a step change in consumer engagement, radical interventions may be required to ensure that *all* consumers receive reasonably good prices.[31] While we do not necessarily support a whole market price cap as it is difficult to combine regulation and effective competition, we do agree that only radical interventions could meaningfully reduce the pricing differential between active and inactive consumers. However, radical interventions also risk significant unintended consequences as illustrated by non-discrimination clauses (see page 13 below).

https://assets.publishing.service.gov.uk/media/5706757340f0b6038800003b/Provisional-decision-on-remedies-EMI.pdf.

[29] Paragraph 4.76, page 200, Competition and Markets Authority (2016b).

[30] For example, paragraph 35, page A5.1-13, Competition and Markets Authority (2016c) states: "The House of Commons received submissions that within a year of the installation of smart metering equipment, almost a third of in-home displays were being switched off by customers". See Competition and Markets Authority (2016c), 'Energy market investigation - Provisional decision on remedies: Appendix 5.1: Smart meter roll-out in Great Britain', available at:
https://assets.publishing.service.gov.uk/media/56ebdf4ded915d117a000004/Appendix_5.1_-_Smart_meter_roll-out_in_Great_Britain.pdf

[31] See pages 1415-1417, Competition and Markets Authority (2016d), 'Energy market investigation – Final report', available at: https://assets.publishing.service.gov.uk/media/5773de34e5274a0da3000113/final-report-energy-market-investigation.pdf.

In the next decade we may reach a point where the plausible methods to raise switching rates in energy have been exhausted and policymakers are faced with the following choice:

(i) Accept the outcomes delivered by the market – the market is good at achieving efficiency and active consumers will receive good deals, but the market is poor at achieving distributional objectives. Price dispersion is a natural part of the market process and inactive consumers are likely to pay considerably more than active consumers.

(ii) Reject market outcomes and adopt some form of price regulation – regulation will limit price differentials between consumers, but incentives for efficiency and innovation are unlikely to be maximised and the complexity of price regulation will have to be managed.

We do not advocate one or other of these positions, but highlight that continual policy interventions in a liberalised market, but which are short of full price regulation, may fail to deliver substantial positive changes, and may be detrimental. Policymakers may need to accept that there is no straightforward solution that guarantees all consumers are automatically on the best deal for them.

The Challenges of Interpreting Switching Rates and Potential Savings:

In discussions of potential 'failings' in the retail energy market statements involving the switching rate and the potential savings available feature prominently. However, only limited conclusions can be drawn from these statistics, and political discourse frequently overplays their meaning.

Potential Savings are not the same as Cash: A potential bill saving of £200 is not equivalent to being offered £200 in cash. The expected welfare gain from a £200 quoted saving from switching may be substantially less than £200. Firstly, an exit fee from an existing deal could reduce the gain. Then there is the non-monetary cost of time consumers face from going through the switching process. Thirdly, a consumer may need to trade off the monetary saving against differences in the non-price aspects of the service, such as the quality of customer care. Fourthly, the £200 saving is a prediction saving, actual future energy bills may vary due to price or consumption changes. Lastly, as the quotation is not legally binding, a consumer may, rightly or wrongly, question the saving figure's credibility when it comes from a party with a vested interest in the consumer's switching decision. While we are sympathetic to the notion that many inactive consumers are currently receiving a bad deal, for many individuals the headline savings quoted will prove illusory.

Moreover, if all consumers were highly active it is unlikely that the new market equilibrium would involve a price equivalent to the cheapest fixed term deals currently available. The current high price standard variable tariffs (SVTs) and low price fixed-term deals are offers based on consumers' current behaviour, if consumers' behaviour changes the offers will change.[32] The most likely outcome of all consumers being highly active is a price level somewhat above the current 'low' prices, but substantially below current SVT prices. More generally, when considering possible interventions, policymakers must consider the competitive response of firms to changes in the market or regulations. If there is a meaningful change, it is unlikely that firms' behaviour will remain identical to that before the intervention.

The Meaning of Switching Rates is Unclear: From a theoretical perspective there is no optimal switching rate. If all consumers are on the deal offering the highest utility (not necessarily the lowest

[32] While we use the term equilibrium, we want to emphasise that markets rarely sit in a stable equilibrium for long. Competition is a process where responses to shocks and changes in behaviour mean that the majority of the time will be spent moving between different equilibria. As markets continuously face shocks, many equilibria will never be reached: before reaching a stable equilibrium a new shock may occur driving the market off in a new direction.

price), the optimal switching rate is 0%, while if no consumers are on the deal offering the highest utility the optimal switching rate is 100% (assuming zero switching costs).[33]

This logic implies that a high switching rate could tell a negative story, indicating that consumers are poorly matched with their existing providers and are seeking something better. For a high switching rate to be beneficial it is necessary for consumers to be poorly matched with their existing suppliers. This assumption is probably correct at market opening, when it seems reasonable to assume that for many consumers the first opportunity to exercise choice, and move away from their incumbent supplier will be beneficial. However, once a mature market has developed, the desirable level of switching becomes much less clear.

While we are sympathetic to the view that many consumers are missing out on good deals, from a rigorous academic perspective we cannot *know* this is true. It is more appropriate to state that "some consumers *might* currently miss out on savings". All we can do is find evidence which is supportive of individuals leaving money on the table. The core problem is the 'observational equivalence' of several outcomes, namely a person not switching could indicate (at least) four different things:

1. Consumers are happy with their existing suppliers and would not switch even if switching costs were zero
2. Consumers would switch suppliers if switching costs were low enough, but switching costs are too high for consumers to be better off through switching
3. Consumers are misinformed about their ability to switch, the savings available or the switching costs
4. Consumers are inherently disinterested or 'irrationally' ignore opportunities for savings.[34]

In any given market some consumers will fall into each of these four groups. The question for policymakers, and one which is challenging, is to determine in which group the majority of consumers lie.

Also, it is not certain that increasing the switching rate will reduce the gap in prices charged to active and inactive consumers. In a market where price discrimination is practised, it is possible that efforts to increase the switching rate might even lead to the price gap increasing. The *marginal* consumers who move from inactivity to activity as a result of policy measures will, by definition, be the least 'sticky' amongst the group of inactive consumers prior to the intervention. The average 'stickiness' of inactive consumers will increase post-intervention possibly encouraging firms to increase prices for inactive consumers.

Lastly, CCP's research findings that a primary motivation for switching is monetary savings imply that it is highly unlikely for low price dispersion, i.e. active and inactive consumers being charged similar prices, to occur simultaneously with a high switching rate. A large price gap is the key motivation driving switching.

What alternate ways of pricing energy should be considered to reduce the burden of high energy bills, in particular for less well-off consumers?

[33] In the period following 100% switching, the optimal switching rate would be 0%, assuming everything remained constant.

[34] Within this category there may be a small subset of consumers who struggle to engage with the switching process due to their limited cognitive capacity. However, we use the term 'irrational' mainly to refer to wider behaviour, i.e. non-switching, which cannot easily be explained by a 'rational' economic model using explanations 1. to 3.

We are concerned about the framing of this question as it implies that if less well-off consumers are struggling to afford energy the appropriate response is to alter the 'pricing' of energy. The core of markets is the price signal which shapes the decisions of consumers and suppliers; these signals are valuable and policymakers should be very cautious before intervening in them. The entire logic for interventions supporting low carbon technologies is that there is a 'missing' price representing the social cost of carbon emissions that needs to be addressed. If low income households are insulated from price increases that reflect carbon emissions, by definition this group of households will not adjust their behaviour/consumption in the way policymakers aiming to cut carbon emissions desire. Energy affordability has a clear association with general poverty and the best way to tackle distributional concerns is generally through the tax and benefits system.

Beyond policies to reduce carbon emissions through increasing energy prices, popular debate may link energy pricing with distributional concerns due to the clear price discrimination in the retail energy market. As noted in footnote 9, the CMA found low income households had lower than average switching rates and higher than average gains from switching i.e. they were on more expensive tariffs. The reason why inactive consumers face higher prices is that since they are inactive, and energy firms can identify them simply from the fact they have not switched in the recent past, there is a lack of competitive pressure to drive these prices down. From the perspective of a profit-maximising firm why would a firm charge these consumers a low price, if it knew that it could charge a high price without losing customers?

The central question regarding pricing is whether competitive pressure can be brought to bear on SVTs or if a non-market alternative, such as price regulation, is required. As we have outlined extensively above, we are sceptical that inactive consumers can be 'switched on' to provide competitive pressure. If politicians make the value judgement that the price gap between active and inactive consumers is unacceptable, the question is which radical intervention should be used to reduce the price gap.

'Backstop' Tariffs and Regulation: As outlined above, we have concerns about the unintended consequences of interventions in a liberalised market's pricing short of full price regulation. Two regulatory interventions short of full price regulation are: (i) a ban on price discrimination, and (ii) a 'backstop' tariff.

A ban on price discrimination between active and inactive consumers would not reduce SVTs to the level of current fixed term tariffs. The most likely outcome is that, as the market re-equilibrates, consumers currently on fixed term tariffs would see substantial price increases as prices rise towards, but not all the way, to current SVT levels.

Similarly, we question the ability to combine a whole of market 'backstop' tariff with effective competition over the long-term. Potential issues with a 'backstop' tariff include:

(i) The price cap providing a focal point around which firms may tacitly collude[35]
(ii) Consumers may be falsely reassured by the backstop tariff leading to further falls in consumer engagement
(iii) Adjusting the price cap so that it accurately reflects changes in costs over the long-term without it presenting opportunities for firms to 'game' the system is difficult
(iv) Administration costs over the long-term may be relatively high

[35] Tacit collusion, where firms co-ordinate on a price without using explicit communication but rely on each firm's individual understanding of the market, is not illegal. Only collusion involving evidence of explicit cartel-related communication between firms can be prosecuted.

While we generally caution against a backstop tariff, we gave some support to the price-cap for prepayment customers proposed by the CMA as it covers a subsection of the market where additional factors limit competition and it is intended to be temporary[36].

Opt-Out Collective Switches In our consultation responses[37] to the CMA's energy market investigation we highlighted an alternative to full regulation which could place significant pricing pressure on the SVTs of inactive consumers: opt-out collective switches. As opt-out collective switches harness competitive pressure through an auction process we believe this mechanism offers benefits over both a 'backstop' tariff and full price regulation. The auction mechanism simply represents an alternative form of competition to atomistic markets rather than a restriction on competition: there is competition *for* rather than *in* the market for inactive consumers.

Opt-out collective switches are fundamentally different from opt-in collective switches such as TBS. The weakness of opt-in collective switches is that a consumer must deliberately take part, which means inactive consumers are less likely to take part than active consumers unless expensive engagement activity by the collective switch organiser occurs. In opt-out collective switches this issue is resolved: if an inactive person does nothing, by default they will be included in the collective switch.

In an opt-out collective switch the opportunity to supply large blocks of inactive consumers would be auctioned. The winning firm would be the one to offer the lowest price subject to minimum quality criteria. The system would be similar to the auctions for rail franchises. The main advantage of this approach over a backstop tariff is that unengaged consumers would benefit from the full force of competition without incurring the costs of searching and switching, while unintended consequences should be limited. Crucially, before the auction takes place, consumers would receive a communication giving them the option to opt out of the auction so they could remain with their existing supplier or conduct their own search of the market. The opt-out auction process would be repeated perhaps once every two years. Such an intervention is probably the most direct solution to the problem of persistent consumer inactivity identified by the CMA.

Before introducing opt-out collective switching considerable in-depth analysis should be performed as it would be a very significant intervention, but where the compulsion imposed on consumers is limited by the opt-out mechanism. The precise design of the auction mechanism will have a significant influence on the winning deal and price differentials between consumers are unlikely to be fully removed. Moreover, the auction process will involve significant setup and ongoing running costs which need to be considered. Lastly, an opt-out collective switch might affect the wider market. If the vast majority of consumers did not opt-out, one might be concerned about the non-collective remaining viable. Similarly the tariff structures selected for the collective switch auction might then become the norm in the wider market, although the impact on consumer welfare is unclear.

However, opt-out collective switches would not necessarily freeze innovation. There is no reason why a collective switch auction could not be applied to tariffs that utilise the functionality of smart meters. If franchise auctions can be designed for contracts as complex as rail franchises an auction process should be able to handle smart meter tariffs. Even if an auction could only cover a restricted range of

[36] We do question the plausibility of the cap being temporary: once in place we expect significant political and consumer pressure for it to be permanent.

[37] See page 13 of Waddams, C., M. Hviid and D. Deller (2015), consultation response to CMA's 'Energy market investigation – Provisional decision on remedies', 8 April 2016, available at: http://competitionpolicy.ac.uk/documents/8158338/8261716/CCP+Response+-+CMA+-+Energy+Market+Remedies.pdf/5b8ae6e2-0750-43ce-8f71-d8077a2042fe, and pages 7-8 of Deller, Hviid and Waddams (2016).

smart meter tariffs, the opt-out mechanism should allow tariff structures that offer significant benefits to consumers to still attract custom. [38]

Finally, opt-out collective switches have been implemented in the USA[39] and the proposed process has similarities with the 'single buyer' model in Italy.

Fuel Poverty The challenge of energy affordability for less well-off households is commonly labelled fuel poverty. As Waddams and Deller (2015)[40] confirm, low income households devote a far greater proportion of their expenditure to energy than those on higher incomes.[41] When considering the economics of fuel poverty, the critical question is why fuel poverty should be treated as a distinct problem from general poverty? Why is an energy specific intervention appropriate rather than an intervention that raises a household's income? A standard result from economic theory is that an income transfer will make a consumer at least as well off, and potentially better off, than the provision of a particular good of an equivalent value. While a household may be unable to afford energy, they may value additional food more than additional energy.

The strongest economic rationale for fuel poverty specific policies is that they *might* be more cost effective than income transfers: a one-off investment to improve energy efficiency may cost less than providing an income transfer every year. We support government providing resources for fuel poverty alleviation, if the interventions to which these resources are devoted deliver real affordability improvements.

When designing such policies Waddams and Deller (2015) caution against an excessive emphasis on high-level fuel poverty metrics, such as the Low Income-High Cost (LIHC) metric, and highlight the need for robust cost-benefit evaluations of interventions focussing specifically on affordability. Waddams and Deller suggest targets, and evaluations, based on high-level metrics should be treated cautiously because: (i) high-level metrics only give a 'picture' of fuel poverty, and (ii) policymakers may be incentivised towards policies that have the biggest impact on a particular metric rather than helping households in most need.[42] A better way to assess policy effectiveness is to compare robust estimates of the welfare benefits achieved against the cost of a policy.

Producing high-quality cost-benefit assessments can be challenging as Waddams and Deller note[43]. Resources are needed to perform these assessments, they may be based on strong assumptions that can be questioned[44] and they generally need to be planned before an intervention occurs. Most importantly, if the justification for an intervention is to tackle affordability concerns, the evaluation

[38] If an alternative tariff structure offers genuinely large benefits to consumers, consumers should be willing to opt out of the collective switch to obtain the alternative tariff.

[39] See Littlechild, S. (2008), 'Municipal aggregation and retail competition in the Ohio energy sector', Journal of Regulatory Economics, 34(2), pp.164-194.

[40] Waddams, C. and D. Deller (2015), 'Affordability of utilities' services: extent, practice, policy', report for the Centre on Regulation in Europe (CERRE), Brussels, Belgium, available at: http://www.cerre.eu/sites/cerre/files/Affordability_FinalReport.pdf

[41] In 2012 households with total expenditure (a proxy for income) below £5,000 on average devoted over 14% of their expenditure to energy, while households with total expenditure of £25-30,000 devoted only around 4-5% to energy. See Chart 15.

[42] A large movement in a metric can be achieved by helping households in 'shallow' fuel poverty, who lie close to a poverty threshold, rather than households a long way from the threshold but who are in most need.

[43] See section 5.2 beginning on page 80.

[44] In particular, estimates of savings often rely on models including 'optimal' temperatures. If the preferences of an individual household pre-intervention mean they heat their home to a different level than that used in the model, the savings estimates will be wrong.

must be performed with this specific objective in mind. A cost-benefit analysis assessing whether energy efficiency investments *in general* warrant government support is different from one attempting to identify the most effective intervention to tackle fuel poverty. In the former, the value of carbon emission reductions should be included, but in the latter they should not.

Has the market and the Government responded effectively to changes in external circumstances?

We answer in a narrow sense by highlighting a specific case where Ofgem responded to pressure from consumer groups and politicians around regional price differentials with a harmful policy: geographic non-discrimination clauses. The external circumstance was the historic structure of the regional electricity supply incumbents leading to each incumbent firm having clear 'home' and 'out of area' markets. The change in circumstances was the realisation that competition naturally led incumbents to charge higher prices in 'home' rather than 'out of area' markets where they needed to offer good deals to attract new customers. This led to increasing objections from consumer groups around 'postcode lotteries' where the same energy supplier was charging different prices in different regions that were not solely the result of regional cost differences. While this is a very specific example of the current active vs inactive consumer debate, this case illustrates how regulatory interventions affecting tariff setting can have predictable negative effects. Hviid and Waddams Price (2012)[45] note the debate prompting non-discrimination clauses was explicitly distributional: the concern was that inactive consumers charged the high 'home' prices were disproportionately vulnerable.

Responding to an Ofgem consultation on introducing non-discrimination clauses between 'home' and 'out of area' markets, Waddams (2009)[46] highlighted the clear incentive for firms to soften their pricing (i.e. increase prices) in regions where they were the entrant. Crucially, all regional incumbents would have the same incentive to soften their pricing in 'out of area' regions and could anticipate this incentive amongst each other, so that there would be a general reduction in competitive pressure leading to an increase in the general price level. While the price differential between regions would be removed, potentially making prices appear fairer, the higher price level in all markets would be detrimental to all consumers, including many who were vulnerable.[47] The second predictable effect was that if price differentials were reduced, this would reduce consumer engagement.

Hviid and Waddams Price (2012) outline how following the introduction of the non-discrimination clauses in 2009, the predicted undesirable impacts occurred. Based on Ofgem data, the authors note that while the average annual bill differential between regions for the standard credit payment option fell from £30 to £13, between June 2008 and December 2010 dual fuel gross margins rose from £45 to £145 and margins net of retail operating costs rose from -£75 to £15.[48] That the average bill differential before the intervention was £30 but profit margins afterwards rose by around £100 suggests all consumers were made worse off by the intervention. Waddams Price and Zhu (2016b)[49] provide additional statistical evidence suggesting that competition became less intense as the price

[45] Hviid, M. and C. Waddams Price, 'Non-Discrimination Clauses in the Retail Energy Sector', The Economic Journal, 122(562), pp. F236-F252

[46] Waddams, C. (2009), Consultation response to Ofgem's 'Addressing undue discrimination: final proposals', 13 May 2009, available at: http://competitionpolicy.ac.uk/documents/8158338/8262567/2.+response-catherine-waddams-2.pdf/a9855ff1-b34c-496a-9011-fa428abf7ab0

[47] Hviid and Waddams (2012) explain the key insight is from Corts, K. (1998), 'Third-degree price discrimination in oligopoly: all-out competition and strategic commitment', Rand Journal of Economics, 29(2), pp. 306–23.

[48] See section 2.2, page F244, Hviid and Waddams (2012).

[49] Waddams Price, C. and M. Zhu (2016b), 'Non-discrimination clauses: their effect on British retail energy prices', The Energy Journal, 37(2), pp. 111-132

differential between incumbents and entrants dropped significantly.[50] At the same time as introducing non-discrimination clauses, Ofgem allowed time limited special offers. The encouragement of these special deals was then linked to increasing concerns around consumer confusion about the complexity/number of tariffs[51]. In turn, this prompted additional interventions, such as the four tariff rule, that the CMA has since criticised as limiting competition.

It is this experience with non-discrimination clauses that leads us to caution against efforts to address distributional concerns by intervening in the functioning of the energy market. It also highlights that one intervention, causing unintended effects considered detrimental by stakeholders, can lead to further interventions that are also detrimental.

What should the future balance between the roles of the public and the private sector be?

Regarding the balance between public and private sector we note two points: (i) the limitations of markets to address distributional concerns, and (ii) the difference between ownership and competition.

Addressing (i), the main strength of markets is the ability of the price mechanism to identify services of value, to attract resources for their production and generally to provide incentives communicating information to consumers and suppliers which influence their behaviour. Policymakers should generally avoid interfering with individual product markets to achieve distributional ends: the price signals produced by the market are valuable. Nevertheless, markets are poor at delivering distributional objectives. It is a mistake to believe that competitive markets will naturally deliver the same low price to all consumer groups, thereby delivering an 'equitable' outcome. Looking at the multitude of markets beyond energy, price discrimination is frequently the norm. An interesting question for policymakers concerned by price discrimination in energy is: why should we be particularly concerned about this issue in energy?

If policymakers wish to reduce carbon emissions, the easiest way to achieve this is to ensure a high price for forms of energy that involve high carbon emissions. If there are concerns about particular groups of householders being unable to afford these prices, the best way to deal with this, and one which preserves energy conservation incentives, is to provide these householders with increased resources (i.e. income).

When delivering distributional objectives, it is also questionable to leave the selection and identification of households to receive support to private firms or unelected regulators. Distributional concerns involve explicit value judgements and it is appropriate for these judgements to be taken by democratically elected governments. Also, the best information on low income and 'vulnerable' households is likely to be that in taxation and benefits records. Requiring energy firms to create their own inferior records of 'vulnerable' consumers seems to be an unnecessary duplication of costs.

Turning to (ii), the benefits of competition are not necessarily conditional on private ownership. Privately owned monopolists can exist as can competition between independent publically owned firms. Evidence suggests that the existence of competition is more important than the nature of ownership for efficiency and consumer outcomes.[52] Imposing full price regulation in the residential

[50] See in particular Figure 3.

[51] This issue of increasing complexity and the possibly limited potential of consumers to handle this complexity was also anticipated in Waddams (2009).

[52] Li and Lyons (2012) find that while both privatisation and increasing the number of firms increase the rate at which mobile phones penetrated telecoms markets, moving from a monopoly to five firms had a bigger impact

energy market represents the replacement of the competitive process with technocratic/public control. Increased regulation may be appropriate if consumers fail to place effective pricing pressure on firms, however, regulation is likely to be an imperfect substitute for competition in terms of driving down costs[53] and encouraging innovation.

on the diffusion rate than privatisation. See Li, Y. and B. Lyons (2012), 'Market structure, regulation and the speed of mobile network penetration', International Journal of Industrial Organisation, 30(6), pp. 697-707.

[53] Note the distinction between prices and costs. Competitive pressure from active consumers may encourage firms to drive down costs even if these cost savings are taken as profit rather than being passed to inactive consumers.