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The case for a cap on the standing charge in energy bills

by

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Abbreviations used in this paper:-

CMA: Competition and Markets Authority. See paragraph 1.

PPM: Pre-payment meter. See paragraph 4.

SME: Small and medium-sized enterprise. See paragraph 3.

SVT: Standard variable tariff. See paragraph 1.

BEIS (DECC): Department for Business, Energy and Industrial Strategy (previously the Department of Energy and Climate Change). See footnote 51.

TDCV: Typical Domestic Consumption Values. See footnote 24.

VAT: Value added tax. See section 14.

This is a revised version of the papers of the same name published in October 2017, June 2018 and October 2018.

Executive summary

In January Ofgem introduced a price cap on energy suppliers' default or standard variable tariffs (SVTs). This 'default tariff cap' effectively limits just the unit rate – the standing charge is unchanged. As such the cap has four fundamental flaws, as Ofgem has acknowledged:-

1. Low income households save less than those on higher incomes. Yet these are the most vulnerable consumers − the least able to avoid paying high prices for energy and the most likely to suffer hardship as a result. In particular, they consume the least energy so the standing charge forms a large proportion of their total bill, which means they pay the highest overall rate for the energy they use.
2. Uncertainty about the efficient level of suppliers' costs to be recovered through the unit rate has led Ofgem to set the cap above the estimated cost level, reducing the savings to consumers.
3. The cap has reduced competition and tariffs that were below it have been increased.
4. By lowering the unit rate the cap has increased energy consumption. This has raised greenhouse gas emissions and reduced security of supply, which may cause energy bills to rise in future to pay for additional investment in generation and network capacity.

The cap has the same structure as a cap introduced for consumers with pre-payment meters in 2017, which has the same drawbacks.

According to Ofgem's estimates the increase in price of better value tariffs may have negated up to 84% of the savings to consumers from the default tariff cap. Energy suppliers have also reduced the number of customers eligible for it, moving many of them from SVTs to fixed deals, which may be more expensive. These factors together mean the cap may not actually have saved consumers any money. Most of any savings will have gone to higher income households.

Ofgem is required to remove the default tariff cap between 2020 and 2023 and the PPM cap is also scheduled to be replaced from 2020. This paper proposes replacing both of these with a cap on just the standing charge.

Households on default tariffs pay an average of over £160 p.a. (including VAT) in dual fuel (i.e. gas and electricity) standing charges. However, the vast majority of costs suppliers incur depend on the amount of energy rather than the number of customers supplied so should be recovered through the unit rate rather than the standing charge. The true, cost-reflective level of the dual fuel standing charge is over £100 lower, at approx. £60 p.a..

A standing charge cap would have four powerful beneficial effects:-

1. Low income households would save most.
2. It could be set at the efficient level of costs so would maximise the savings to consumers. The few costs that should be recouped through the standing charge can be estimated much more accurately and transparently than suppliers' other costs.
3. It would dramatically boost competition. Consumers would find it much easier to compare tariffs as they would only need to consider unit rates. This would lead to lower prices for consumers generally.

4. While those in fuel poverty would be able to afford more energy, the resulting higher unit rates would lead consumers to reduce energy consumption overall. This would lower carbon emissions and improve security of supply.

A standing charge cap would guarantee savings for low income consumers of at least £150 million p.a., with 80% going to the very poorest households. In fact the boost to competition means benefits are likely to be much higher. By combining more effective competition with protection for those who are unable to benefit from it, a standing charge cap could eliminate the entire £1.4 billion p.a. detriment suffered by consumers on SVTs. Enhanced competition would also lead to better deals for consumers who are not on SVTs.

In addition, lower demand would reduce both carbon emissions and the costs of maintaining security of supply.

However, Ofgem's scope to introduce an effective standing charge cap is threatened by its proposal to introduce a substantial fixed charge for consumers to pay for network costs. As with the default tariff cap, this is ill-conceived: it fails to consider economic efficiency or take into account the adverse effect on low income households, carbon emissions and security of supply.

Capping the standing charge in energy bills to businesses as well could eliminate the £220 million p.a. detriment to SMEs in the same way.

Ofgem could further reduce standing charges by approx. £250 million p.a. if it took action to address competition problems in metering markets and thereby reduce the costs suppliers incur in providing meters. In addition, the Government could eliminate VAT on the standing charge, which would save consumers a further £70 million p.a..

A standing charge cap provides a general model for regulation of retail markets for essential services where competition is not effective, such as water and telephone landlines.

1. Background

SUMMARY

The Competition and Markets Authority (CMA)'s Energy Market Investigation in 2016 identified competition problems in the retail energy market. The 'Big Six' energy suppliers have market power over passive consumers, which they exploit in the pricing of their default or standard variable tariffs (SVTs). The CMA conservatively estimated the total detriment to households at £1.4 billion p.a..

Almost £400 million p.a. of that was accounted for by households with pre-payment meters (PPMs), who were found to suffer particularly high levels of detriment. The CMA imposed a price cap for these customers, which was introduced in April 2017.

The CMA also found similar issues in the supply of energy to SMEs and estimated the detriment there at £220 million p.a. (mostly incurred by micro-businesses).

A 'default tariff cap' for customers on SVTs was introduced in January 2019 and will continue until 2020, with the possibility of being extended to 2023.

1. The Competition and Markets Authority (CMA)'s Energy Market Investigation[1] identified an adverse effect on competition in the retail energy market arising from weak customer response. Inactive customers fail to engage in the market effectively and select suppliers offering lower prices[2]. This means energy suppliers have market power over them and exploit this in the pricing of their default or standard variable tariffs (SVTs), which are usually more expensive than 'fixed tariffs' that are actively chosen[3,4].

2. The CMA's final report in June 2016 estimated the detriment from excessive prices in SVTs to domestic customers of the Big Six energy suppliers[5] conservatively at £1.4 billion a year.[6] Ofgem estimated the detriment to default tariff customers at £1.5 billion p.a. in 2017[7].

3. The CMA also estimated the detriment to SME customers of the Big Six at £220 million p.a., of which £180 million related to micro-businesses.[8]

4. The CMA found that pre-payment meter (PPM) customers had suffered particularly high levels of detriment due to constraints on the number of tariffs that suppliers could offer them. It calculated this at £147 p.a. each, meaning that PPM customers accounted for

[1] *Energy market investigation Final report* (June 2016) Competition and Markets Authority (hereafter referred to as 'CMA final report').
[2] CMA final report paragraph 9.562.
[3] SVTs are default tariffs for domestic customers (i.e. households). If a customer does not choose a specific plan, for example after a fixed tariff (that provides a locked-in rate for a designated term) ends, the supplier moves them to a default tariff. The rates in default tariffs are typically variable but may also be fixed although in this paper 'fixed tariff' is generally used to refer to tariffs that are actively chosen, i.e. non-default.
[4] CMA final report paragraphs 158, 160 of the Summary.
[5] British Gas, EDF Energy, E.ON, Npower, Scottish Power and SSE.
[6] CMA final report paragraph 10.125-10.126.
[7] *Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 1.11.
[8] CMA final report paragraph 283 of the Summary.

£388 million p.a. of the total consumer detriment[9]. The CMA's broader package of remedies would take time to implement so the CMA decided that a transitional price cap should be introduced for PPM customers.

5. The PPM cap was introduced for both gas and electricity in April 2017 and is administered by Ofgem. This cap does not apply to customers with smart meters that are fully interoperable[10] as these enable access to a wide range of tariffs.[11] It will apply until December 2020 although it may be extended in the event that the smart meter rollout is behind schedule.

6. The CMA had considered extending the PPM cap to the types of people who are disengaged consumers: those on low incomes, with low qualifications, disabled, living in rented accommodation or above 65 years of age. However, it concluded that this would be ineffective and/or disproportionate, with the practical difficulties of identifying these people outweighing the benefits.[12]

7. The CMA also rejected a price cap for all SVT customers. One of the five members of the CMA inquiry panel believed that the scale of detriment justified such a price cap on a temporary basis[13] but the others believed that this risked undermining the competitive process.

8. Nevertheless in February 2018 the Government introduced legislation[14] to impose a 'default tariff cap' for customers on SVTs. Ofgem was responsible for designing and implementing this price cap, which came into effect in January 2019. It will continue until 2020, with the possibility of being extended to 2023[15].

9. In the interim (between February 2018 and January 2019) Ofgem had introduced a temporary price cap (the 'Safeguard tariff') at the level of the PPM cap for 0.9 million 'vulnerable' consumers.

10. Note that in this report we use data for 2017. This accords with Ofgem's modelling of what the impacts of the default tariff cap would have been had it been in place in 2017 by using tariff prices, costs and customer numbers from then. It also means our results are broadly comparable with the findings of the CMA report published in June 2016 and estimates of the impact of the PPM cap made prior to its imposition in April 2017.

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[9] CMA final report paragraph 14.18.
[10] Smart meters which meet the SMETS-2 technical specification as these can communicate with any supplier so will eliminate technical constraints on suppliers' ability to offer PPM customers a wider range of tariffs. It will also make it possible to switch customers with a SMETS-2 smart meter remotely (at little or no cost) to a credit tariff.
[11] CMA final report paragraphs 11.79-11.84.
[12] CMA final report paragraphs 11.95-11.97.
[13] See Statement of dissent of Professor Martin Cave in CMA final report, pp. 1415-1417.
[14] The Domestic Gas and Electricity (Tariff Cap) Act 2018.
[15] Ofgem must publish a review by 31 August 2020 of whether conditions are in place for effective competition for domestic supply contracts and make a recommendation on whether the cap should remain in place in 2021 or be removed. The Secretary of State will consider this and make a decision by 31 October 2020. If the default tariff cap is extended into 2021 the process will be repeated in 2021; if the cap is extended into 2022 the exercise will be repeated for a final time then as the cap will cease to have effect at the end of 2023.

2. The economic rationale for regulating the standing charge

SUMMARY

This paper proposes capping just the standing charge component of all gas and electricity tariffs. (Energy bills consist of a standing charge per day and a price per unit of energy consumed: the unit rate.) This cap would be applied to both PPM and non-PPM tariffs. It would be supplemented by a ban on suppliers offering lower unit rates for higher levels of consumption in order to prevent them effectively raising the standing charge by charging high rates for the first units consumed.

Standing charges should be reduced on economic efficiency grounds. The standing charges levied by energy firms are substantially greater than the related costs they incur. Dual fuel standing charges in SVTs average over £160 p.a. (including VAT). Yet the cost-reflective level is over £100 lower, approx. £60 p.a., as most costs incurred by suppliers depend on the amount of energy rather than the number of customers supplied so should be recovered through the unit rate instead.

However, Ofgem is carrying out a major review of electricity network charges and plans to replace some of the current usage related charges with a substantial fixed charge per consumer. As with the default tariff cap, this proposal is ill-conceived as it doesn't appear to consider economic efficiency properly (or the effect on low income households, carbon emissions and security of supply). It would greatly diminish the scope for an effective cap on the standing charge.

11. This paper proposes capping just the standing charge component of all gas and electricity tariffs. (Energy bills consist of a standing charge per day and a price per unit of energy consumed: the unit rate.) This cap would be applied to both PPM and non-PPM tariffs. It would be supplemented by a ban on energy suppliers offering lower unit rates for higher levels of consumption in order to prevent them effectively raising the standing charge by charging high rates for the first units consumed.

12. The standing charge is the element of energy bills for which there is the strongest argument for price regulation on economic efficiency[16] grounds. Ideally the prices charged for different products equal the costs of producing them. Thus energy suppliers would recover through the standing charge the costs incurred in arranging to supply customers, while those costs that depend on the amount of energy supplied would be recouped through the unit rate.

13. It is clear that the standing charges suppliers levy are substantially greater than the costs of serving customers. Prior to the imposition of the default tariff cap the average dual fuel SVT standing charge for non-PPM customers was £164 p.a.[17]. This is over £100 more than the efficient, cost-reflective level of approx. £60 p.a. (see Annex 2) as most costs incurred by suppliers depend on the amount of energy rather than the number of

[16] Economic efficiency is achieved when nobody can be made better off without someone else being made worse off. It maximises social welfare by ensuring resources are allocated and used in the most productive manner possible.

[17] *Statutory Consultation – Default tariff cap – Overview document* September 2018 Ofgem paragraph 2.76. This accords with our estimate of £156 (including VAT) p.a. (see Annex 1).

customers supplied so should be recovered through the unit rate instead. This excess corresponds broadly to the total consumer detriment of £1.4 billion p.a.[18].

14. Costs that depend on the amount of energy supplied include not only the wholesale cost of energy but also, as Ofgem has acknowledged, almost all network costs[19] and the costs of government policies aimed at tackling fuel poverty and reducing carbon emissions[20]. This is explained in part (ii) of Annex 2 and in Annex 3.

15. As set out earlier (paragraph 1), suppliers' SVT prices reflect their exploitation of their market power[21] over passive consumers. Market power complicates considerations of economic efficiency as it means suppliers' revenue exceeds their costs. In these circumstances the most economically efficient outcome is achieved by Ramsey pricing, which minimises the distortion of consumption patterns relative to those that would occur if competition was effective. It involves regulating prices so that mark ups are lower for those consumers who reduce their demand most in response to higher prices (i.e. those whose price elasticity of demand is highest).

16. Price elasticity of demand for energy varies according to households' income and consumption (which are closely correlated, as demonstrated in Section 5 below). It is higher for lower income / consumption households, as evidence presented in Annex 5 shows. This may be explained by the effect of energy spending on consumers' budgets: it forms a higher proportion of the budget of lower income households so a variation in the price of energy will have a greater effect on their budgets and hence on how affordable energy is.

17. Efficiency thus calls for mark-ups to be lowest for low income / consumption households, which entails capping the standing charge more tightly (in relation to the relevant costs) than the unit rate, if indeed the unit rate should be capped at all. It also means preventing suppliers offering lower unit rates for higher levels of consumption, which would be necessary in any case to prevent them effectively raising the standing charge by charging high rates for the first units consumed.

18. Note, however, that Ofgem is carrying out a major review of electricity network charges and plans to replace some of the current usage related charges with a substantial fixed charge per consumer[22]. This is addressed in Annex 4. As with the default tariff cap, this proposal is ill-conceived as it doesn't appear to consider economic efficiency properly and doesn't fully take into account the effect on low income households, greenhouse gas emissions and security of supply. If implemented it would greatly diminish the scope for an effective cap on the standing charge.

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[18] £100 * (13,432,168 + 3,962,722) = £1.7 billion, where 13,432,168 is the no. of SVT customers of the Big Six suppliers as of April 2017 (see Annex 1) and 3,962,722 is the no. of dual fuel PPM customers of the Big Six suppliers (see CMA final report Table 14.13 p.997 and footnote 152 p.1001).
[19] *Default tariff cap: statutory consultation Appendix 5* September 2018 Ofgem paragraph 3.1 and table A5.4.
[20] *Default tariff cap: statutory consultation Appendix 5* September 2018 Ofgem paragraph 2.1 and table A5.2.
[21] Market power is a cause of market failure, where the market mechanism alone cannot achieve economic efficiency. Another is externalities, where an activity produces benefits or costs for others. Examples are energy consumption producing carbon emissions and necessitating investment in additional generation and network capacity. These are addressed in Section 10.
[22] *The Targeted Charging Review: minded to decision and draft impact assessment* November 2018 Ofgem

3. The structure of the default tariff cap and the PPM cap

SUMMARY

Both the default tariff cap and the PPM cap ostensibly limit both the standing charge and the unit rate. However, contrary to the economic efficiency arguments set out above, in both caps the standing charge was set at the prevailing average level in suppliers' tariffs even though both default tariffs and PPM tariffs are acknowledged to be excessive, reflecting as they do suppliers' market power over customers on them. Thus both the default tariff cap and the PPM cap are to all intents and purposes caps on the unit rate only.

19. Both Ofgem's default tariff cap[23] and the PPM cap imposed by the CMA ostensibly limit both the standing charge and the unit rate.[24] However, contrary to the economic efficiency arguments set out above, in both caps the standing charge was set at the prevailing average level in suppliers' tariffs even though both default and PPM tariffs were known to be excessive, reflecting suppliers' market power over customers on them. Thus both the default tariff cap and the PPM cap are to all intents and purposes caps on the unit rate only.

20. Ofgem set the standing charge in the default tariff cap at the current average level of the standing charge in SVTs and actually higher, at £181 p.a., during the first cap period in 2019[25]. It justified this on the basis that it apparently estimated the cost-reflective level of the standing charge at £220 p.a. in 2017 terms[26]. However, it did not explain how this cost estimate was arrived at and it appears implausible given that Ofgem agreed with analysis set out in this paper that almost all network and policy costs depend on the amount of energy supplied (see paragraph 14 above), in which case they should not be recovered through the standing charge. This estimate is plainly not credible in any case: it suggests that profit-maximising energy suppliers with market power over passive consumers currently price at below cost the part of energy tariffs which consumers cannot avoid paying.

21. The cap on the standing charge for PPM customers had earlier similarly been set at the average of the Big Six suppliers' current standing charges in PPM tariffs. This was despite the CMA identifying that the Big Six exploited their market power through their prices and that PPM customers were especially badly affected, which was the reason for introducing the PPM price cap.[27] The CMA offered little in the way of justification for setting the zero consumption component of the price cap in this way[28].

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[23] This applies to customers on 'default tariffs'

[24] Both caps are calculated for each level of consumption of both gas and electricity according to a straight line drawn through prices for supplying energy at zero and the median level of energy consumption. (The median level of household consumption in Great Britain is Medium Typical Domestic Consumption Values or TDCV. As of Sept. 2017 this was 3,100 kWh p.a. for electricity and 12,500 kWh p.a. for gas.)

[25] *Statutory Consultation – Default tariff cap – Overview document* September 2018 Ofgem paragraph 2.76.

[26] Decision – *Default tariff cap – Overview document* November 2018 Ofgem paragraph 2.96.

[27] CMA final report paragraphs 154, 156-160, 162-167 and 245 of Summary.

[28] Its only comment appeared to be that this "provides comfort that the price cap at nil consumption is compatible with current tariff levels" (CMA final report paragraph 14.110).

4. Setting the cap at the efficient level of costs

SUMMARY

Ofgem has included in the default tariff cap additional amounts (including 'headroom') totalling approx. £40 p.a. per customer, which reduces savings for consumers. This is to allow for variation in operating costs and uncertainty about the efficient level of costs in a cap on the unit rate.

By contrast, the efficient level of suppliers' costs to be recovered through the standing charge could be determined accurately, which means a standing charge cap could be set at the efficient level. The simplicity of a standing charge cap would also minimise additional costs arising from any perception of regulatory risk. A standing charge cap would thus maximise savings to consumers.

Indeed Ofgem has previously said that it would be possible to predict the level of costs to be recovered through the standing charge accurately.

22. Setting the unit rate in the default tariff and PPM price caps has meant quantifying the many costs faced by an efficient supplier that vary with the amount of energy supplied, which is challenging.

23. As a result Ofgem added extra amounts to the level of the default tariff cap in order to mitigate variation in operating costs and uncertainty as to the efficient level of costs[29]:-

- An allowance of £23 p.a. to allow for suppliers that have higher operating costs because they have a customer base that is more expensive to serve.[30]
- An allowance of £3 p.a. to allow for uncertainty in wholesale costs due, for example, to changes in demand volumes (such as caused by extreme weather).[31]
- 'Headroom' of £10 p.a.[32]: added to the estimated benchmark level of costs to capture the residual risk and uncertainty faced by an efficient supplier that was not already captured in the assessment of costs[33].

Together, these measures have increased the level of the default tariff cap and reduced savings for consumers by approx. £39 p.a. (incl. VAT) across all customers[34].

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[29] Source: *Default Tariff Cap: Decision – Appendix 2 – Cap level analysis and headroom* November 2018 Ofgem Table A2.1 p. 10.
[30] Per direct debit customer at medium TDCV (excl. VAT) in 2017. *Default Tariff Cap: Decision – Appendix 2 – Cap level analysis and headroom* November 2018 Ofgem paragraphs 3.88-3.96. NB Ofgem's consultation document on headroom had also mentioned this as a possible source of uncertainty that could be managed by headroom. (*Default Tariff Cap: Policy Consultation Appendix 11 – Headroom* May 2018 Ofgem paragraph 1.2.)
[31] Per direct debit customer at medium TDCV (excl. VAT) in 2017. *Default Tariff Cap: Decision – Appendix 2 – Cap level analysis and headroom* November 2018 Ofgem paragraphs 3.71-3.76.
[32] £10 for direct debit customers and £11 for standard credit customers (both dual fuel, excl. VAT) in 2017. (Source: *Default Tariff Cap: Decision – Appendix 2 – Cap level analysis and headroom* November 2018 Ofgem paragraphs 2.13 and 2.22.)
[33] *Default Tariff Cap: Decision – Appendix 2 – Cap level analysis and headroom* November 2018 Ofgem paragraphs 2.3, 3.66-3.87. See also *Default Tariff Cap: policy consultation overview document* (May 2018) Ofgem p.8 and paragraphs 2.2-2.8, 2.48-2.49.

24. The PPM cap similarly included an amount for headroom of £30 p.a.[35]. In setting the PPM cap one of the factors the CMA had taken into account was the need to maintain consumer switching and competition between suppliers but this approach appears flawed. Many customers did not switch tariffs and competition was not effective to begin with (see paragraph 4 above). In fact this was the very reason for introducing a price cap. Reducing the level of protection by adding headroom partly in order to maintain some (ineffective) competition rather calls into question why a price cap was being introduced at all.

25. By contrast, it is feasible to estimate accurately just the few cost elements that should be recovered through the standing charge (as listed in Annex 2). This means it would be possible to set a standing charge cap at the efficient level of costs, with no need for additional amounts to mitigate variation in costs or uncertainty as to what the efficient level is. This maximises the savings to consumers.

26. The simplicity of a standing charge cap would also avoid the potential adverse consequence of a price cap that it might increase regulatory risk in terms of both:-

    - heightened perception of ongoing regulatory intervention in the future and
    - uncertainty regarding the revised level of the cap at each review point.[36]

27. The few cost elements and the fact that the cap could be set through bottom up estimation of costs (again as per Annex 2) would give clarity as to which cost elements were being included in the benchmark and how each was being treated[37]. Such a clear and transparent methodology for setting the cap would mitigate the perceived risk arising from regular changes to the level of the cap[38], as would the accuracy with which it was set.

28. This would avoid new entry and/or investment being deterred and investors seeking higher rates of return, which increase suppliers' costs (and ultimately their prices to consumers). Again, this would maximise the savings to consumers.

29. Indeed Ofgem previously proposed implementing a fixed standing charge (referred to in Annex 2) by incorporating a schedule of standing charges into licences, with an automatic adjuster for subsequent years. Ofgem said then that it would be possible to estimate the level of future costs with a reasonable degree of accuracy and that this would provide some certainty to suppliers about the future level of the standing charge.[39]

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[34] Multiplying the sum of £23, £3 and £10 by 1.05 to include VAT and by 1019/998 to reflect the mix of both direct debit and standard credit customers (this is the ratio of the default tariff cap for all consumers to that for direct debit customers only - see note b of Figure 2 below).
[35] Per dual fuel customer at medium TDCV. (CMA final report paragraphs 14.34, 14.116, 14.124-14.131, 14.250-14.275).
[36] CMA final report paragraphs 14.420-14.422 and *Default Tariff Cap: Policy Consultation Appendix 14 – Initial View on Impact Assessment* May 2018 Ofgem paragraph 4.43.
[37] *Default Tariff Cap: policy consultation overview document* (May 2018) Ofgem paragraph 2.40.
[38] *Default Tariff Cap: Policy Consultation Appendix 14 – Initial View on Impact Assessment* May 2018 Ofgem paragraph 4.46.
[39] Standardised Element document paragraphs 2.26-2.29.

5. Low income households

SUMMARY

Low income households are the consumers who are most vulnerable and in need of protection by a price cap as they are less able to avoid paying high prices for energy and more likely to suffer hardship as a result. They are the most likely to be on the poorest value tariffs because they are the least engaged consumers and they have the smallest gains from switching as they consume the lowest amounts. In particular, they pay the highest overall rate for the energy they use because their low consumption means the standing charge forms a large proportion of their total bill. They can least afford to pay high prices for energy and are most likely to be in fuel poverty.

30. The consumers most in need of protection by a price cap are those who are less able to avoid paying high prices for energy and for whom this is likely to cause hardship. This accords with Ofgem's definition of consumer vulnerability as "when a consumer's personal circumstances and characteristics combine with aspects of the market to create situations where he or she is:

    - Significantly less able than a typical consumer to protect or represent his or her interests in the energy market; and/or
    - Significantly more likely than a typical consumer to suffer detriment, or that detriment is likely to be more substantial."[40]

    These conditions are usually both satisfied only by households on low income.

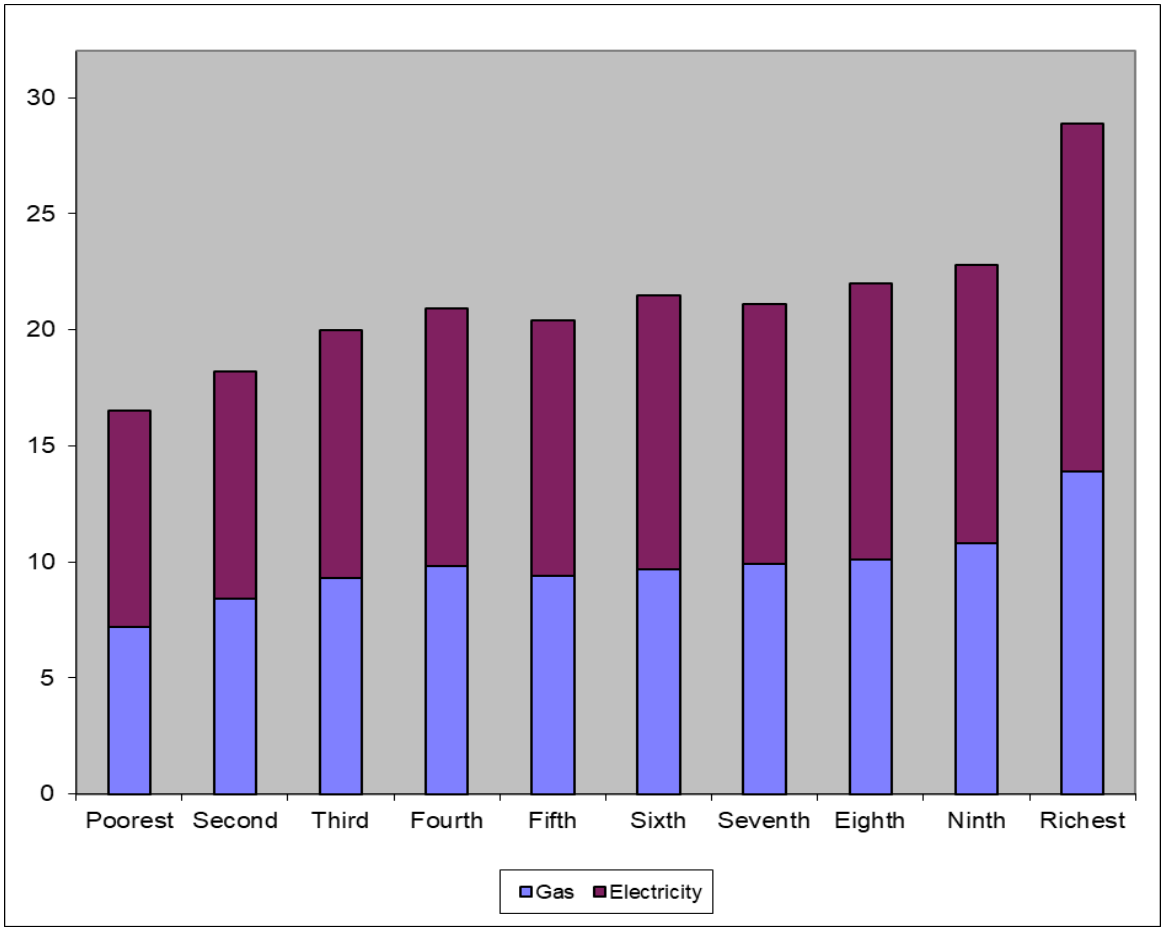
31. Low income households are most likely to be on the worst value tariffs including SVTs[41]. This is because they are significantly less engaged in the market[42,43] and tend to find it

[40] Consumer Vulnerability Strategy (2013) Ofgem, paragraph 3.4.
[41] That was the finding of the CMA domestic customer survey: 75% of low income consumers (those earning below £18,000 p.a.) are on SVTs compared with 68% for all respondents when the survey was undertaken. (CMA final report paragraph 9.14.) Ofgem's consumer survey similarly found that low income (below £16,000 p.a.), disadvantaged and financially struggling consumers are most likely to be on SVTs. (Source: *Consumer engagement in the energy market since the Retail Market Review - 2016 Survey Findings (Report prepared for Ofgem)* August 2016 Ofgem (hereafter called 'Ofgem survey report') https://www.ofgem.gov.uk/publications-and-updates/consumer-engagement-energy-market-retail-market-review-2016-survey-findings p.77 and Table 12 of data tables.)
[42] The CMA domestic customer survey showed that those with household incomes below £18,000 a year are significantly less engaged. They are less likely to have ever considered switching supplier in the past; to have shopped around in the last three years; to have switched supplier in the last three years or to consider switching in the next three years. (CMA final report paragraphs 9.9-9.11 and Appendix 9.1 paragraph 7 p.3 and paragraph 64 p.17.)
[43] Ofgem's survey of consumer engagement also detailed the link with income. Those with incomes below £16,000 a year are significantly less likely to have (a) switched supplier; (b) changed tariff with their existing supplier; (c) compared tariffs and (d) to say they have time for switching energy supplier. (*Consumer engagement in the energy market since the Retail Market Review - 2016 Survey Findings (Report prepared for Ofgem)* (August 2016) Ofgem (hereafter called 'Ofgem survey report') (https://www.ofgem.gov.uk/publications-and-updates/consumer-engagement-energy-market-retail-market-review-2016-survey-findings) (a) Qs.18-20 and Tables 23-25 of survey data tables (b) Qs.35, 36 and Tables 46, 52 of survey data tables (c) Qs.41-44 and Tables 48, 50, 54, 56 of survey data tables (d) Q.121 and Table 162 of survey data tables.

more difficult to make value for money assessments of available tariff options[44]. In addition, their potential gains from switching are less[45] because they consume less energy: the following graph demonstrates the strong link between household income and energy consumption[46,47].

FIGURE 1

Household expenditure on gas and electricity (£ per week) by disposable income decile



Source: *Family Spending 2018*[48] Office for National Statistics (Table A6)

[44] The CMA listed the groups of customers that lack the capability to search and consider options fully as those with low levels of education or income; the elderly and/or those without access to the internet. (CMA final report paragraph 9.563(b)(i).)

[45] Both the CMA and Ofgem have used survey evidence to estimate the amounts consumers need to save in order for switching to be deemed worthwhile. The CMA survey found the minimum savings needed to encourage respondents to switch supplier had a median of £120 and a mean of £204 as some customers responded with very large amounts (CMA final report Appendix 9.1 Table 12 and paragraph 120 p.38). The Ofgem survey report found that consumers feel they need to save, on average, just under £300 per year to make it worth changing their supplier or tariff (p.71).

[46] Once households' energy spending (as depicted in Figure 1) is adjusted for the high cost of SVTs and the standing charge (see paragraph 32) it is apparent that energy consumption of low income households is even lower relative to high income households than energy spending is.

[47] Ofgem confirmed that low income households consume less than higher income households. (*Default Tariff Cap: Policy Consultation Appendix 11 – Headroom* May 2018 Ofgem paragraph 2.3.) Similarly, a DECC paper reported a research finding that "evidence that a relationship between income and demand for domestic gas does exist". (*Annex D Gas price elasticities: the impact of gas prices on domestic consumption – a discussion of available evidence* June 2016 DECC p.9.)

[48] Financial year 2017-18

32. It has been overlooked generally, however, that what really sets low income households apart is that they are liable to pay the highest overall rate for the energy they use regardless of what tariff they are on. This is because the fact that they spend the least on energy means the standing charge, which is a substantial amount (see paragraph 13 above), forms a large proportion of their total bill.[49]

33. These consumers' low income also means they are less able to afford to pay these high prices so will suffer particular detriment. They are most likely to be in fuel poverty[50], as energy prices and income are key determinants of this.[51]

[49] Ironically, the only reference in the report of the CMA's Energy Market Investigation to suppliers' ability to levy excessive standing charges and the distributional impact of this appears to be a comment from one of the Big Six energy suppliers, SSE. It said that suppliers could respond to a form of PPM price cap previously mooted by the CMA by increasing standing charges. It said this "would be particularly disadvantageous to lower users, a group which includes some of the most vulnerable consumers". (CMA final report paragraph 14.76.)

[50] A household is considered to be fuel poor if: they have required fuel costs that are above average (the national median level); and, were they to spend that amount, they would be left with a residual income below the official poverty line. The drivers of fuel poverty are income, energy prices and the energy efficiency of dwellings.

[51] The median level of income for fuel poor households is £10,118 p.a. whereas the median for all households is £21,333. 78% of households that are classed as fuel poor are situated in the first or second income deciles and virtually all are within the first three income deciles. (*Annual Fuel Poverty Statistics Report, 2017* (2015 data) (June 2017) BEIS (Department for Business, Energy and Industrial Strategy) p.4, p.26 & Table 28 of *Fuel Poverty Detailed Tables 2017*.)

6. The savings for consumers from the current price caps

SUMMARY

The way that both the default tariff cap and the PPM cap are structured, with a limit on the unit rate but the standing charge left unchanged, means vulnerable low income households save less than those with high incomes.

Both Ofgem and the CMA over-stated the savings that the default tariff cap and the PPM cap, respectively, would deliver to consumers. Better (albeit approximate) estimates of the savings from the default tariff cap and the PPM cap are £1,044 million p.a. and £168 million p.a., respectively. More than half of these savings accrued to higher income households.

34. The way that both the default tariff cap and the PPM cap are structured, with a limit on the unit rate but the standing charge left unchanged (see Section 3 above), means the biggest savings go to those who consume most. Thus high income consumers save more than those on low incomes.

35. Both Ofgem[52] and the CMA[53] have acknowledged that the default tariff cap and the PPM cap, respectively, provide the smallest savings to low income households, who are the consumers most in need of help with energy bills. The CMA structured the PPM cap in this way even though its research showed that most PPM customers are on low incomes[54]. Ofgem also set the default tariff cap like this despite being aware that low income households are disproportionately represented among those on default tariffs (see paragraph 31)[55].

36. Figure 2 shows the effect of the default tariff cap on the annual energy bills of customers with different levels of consumption (and income). The amount they save is the vertical distance between the red 'SVT' line and the green 'Default tariff cap' line.

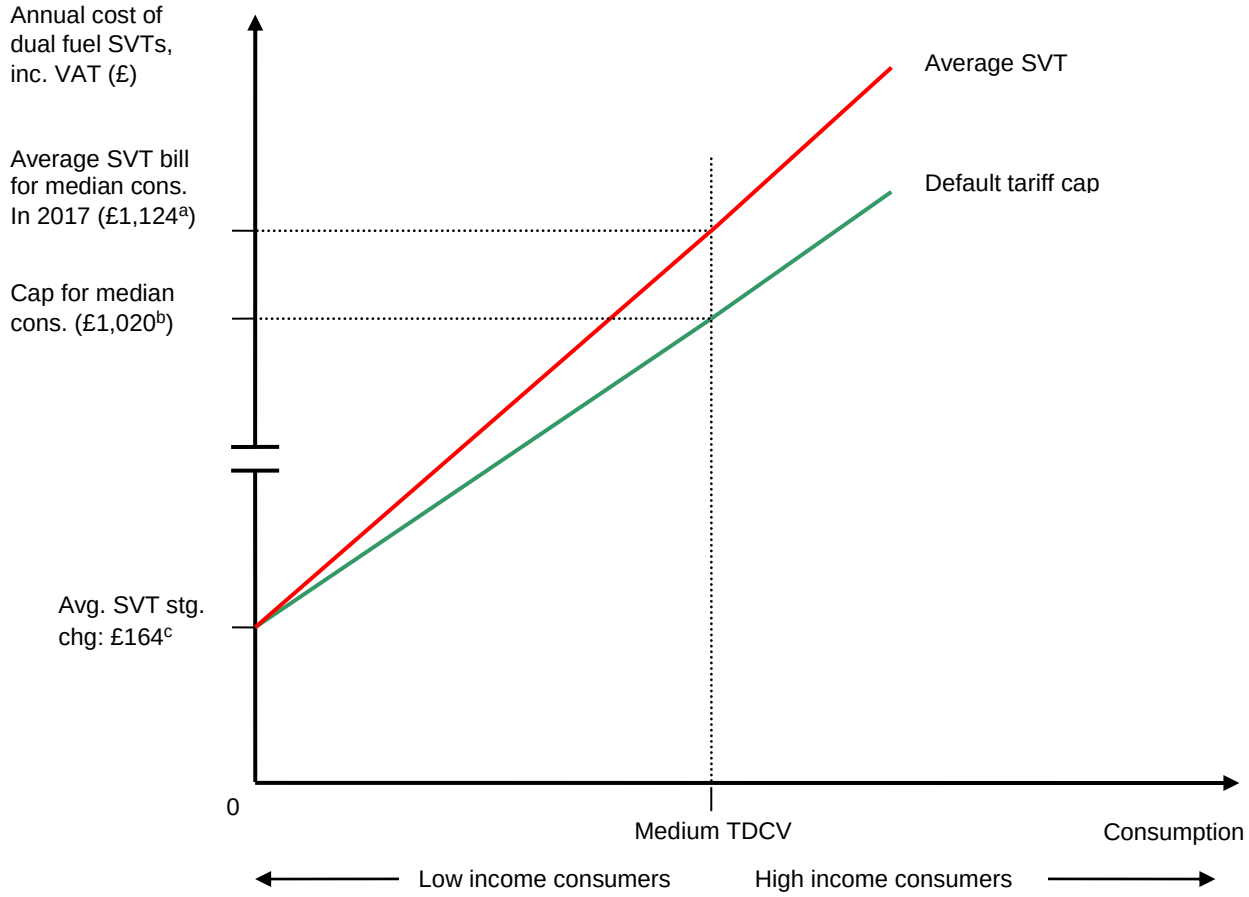
[52] Ofgem acknowledged that this was pointed out by the original version of this paper. *Default Tariff Cap: Policy Consultation Appendix 14 – Initial View on Impact Assessment* May 2018 Ofgem paragraphs 4.70-4.71.

[53] The CMA acknowledged that its cap offered least protection to people who consume relatively small amounts: "We note... that, when comparing the cap to existing tariffs, it is in fact less stringent at lower levels of consumption and more stringent at higher levels of consumption".(CMA final report footnote 44, p.955.) Similarly, the CMA's analysis in its final report (paragraphs 14.295-14.310) showed that for both gas and electricity the PPM price cap is above more of the Big Six firms' PPM customer bills at low than at high levels of consumption.

[54] The CMA itself found that PPM customers are significantly more likely to have an income below £18,000 p.a.: 48% cf. 16% and 25% for direct debit and standard credit customers, respectively. Just 6% of PPM customers have an income of over £36,000 p.a. (CMA final report paragraph 9.34). Thus it is reasonable to infer that a large majority of PPM customers earn less than the median.

[55] "Customers with lower incomes are more likely to be on higher priced SVTs." (*Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 5.29.)

FIGURE 2
Effect of the default tariff cap on annual energy bills



[a] Source: *Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 4.9.
[b] Source: *Default Tariff Cap: Decision – Overview document* November 2018 Ofgem paragraph 1.21. NB This baseline default tariff cap is £998 (dual fuel, single rate) for customers who pay by direct debit and £1,074 for customers who pay by standard credit at medium TDCV in 2017 terms. Source: *Default Tariff Cap: Decision – Appendix 2* November 2018 Ofgem paragraph 1.3.
[c] Ofgem's estimate of standing charge for a dual fuel direct debit customer (*Statutory Consultation – Default tariff cap – Overview document* September 2018 Ofgem paragraph 2.76). Our calculation of the standing charge of 10 suppliers with more than 250,000 non-PPM customers as at Sept. 2017 = £155.54 (see Annex 1).

37. Ofgem claimed that in 2017 its cap would have saved dual fuel customers on default tariffs who use a typical amount of electricity and gas £103 per year on average, corresponding to savings of £1,205 million p.a. across all SVT customers[56,57]. However, these estimates are over-stated as households on SVTs generally consume less than

[56] I.e. including those on single fuel as well as dual fuel tariffs and paying by both direct debit and standard credit. Those domestic customers on PPM tariffs covered by the PPM cap and on (non-default) fixed tariffs are excluded.
[57] These were based on analysis of 2017 tariff prices and the level of the cap that would have applied in 2017 but expressed in 2018 prices as £105 p.a. on average and £1,233 million p.a. across all customers. (*Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 5.5 and Tables A11.11, A11.12 and A11.13.) They were converted to 2017 prices using the inflation rate of 2.32% Ofgem used in converting them to 2018 prices (*Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem footnote 46).

the typical amount for all consumers[58] so will save less than this[59]. The total savings the cap would have provided for households on default tariffs in 2017 are more like £1,044 million p.a.[60].

38. Similarly, the CMA estimated that its PPM cap would reduce the annual bills paid by PPM customers of the Big Six suppliers by £71 per customer, amounting to a reduction in total PPM consumer detriment of £282 million p.a.[61]. In fact when the PPM cap was implemented in 2017 the saving was just £46, amounting to a total of £182 million p.a.[62]

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[58] Low income households (who consume less energy) are disproportionately represented among those on SVTs (see paragraph 31 above) and the relative expense of SVTs also means consumers on them can't afford as much energy.

[59] This is particularly the case given that Ofgem estimated aggregate impact using the mean level of consumption whereas it estimated savings per customer based on the Typical Domestic Consumption Values (TDCV), reflecting median consumption levels. (*Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 2.43 and Table below paragraph 2.47.) The mean level of annual domestic consumption in Great Britain is significantly higher than the median for both gas and electricity as some households use disproportionately large amounts of energy. The CMA had used the median in estimating the aggregate impact of the PPM cap and noted that an estimate of savings calculated using the mean level of consumption of all consumers would have been 12.1% higher (see footnote 63 below).

[60] This estimate is derived by scaling down Ofgem's estimate of total savings by:-

(1) 2017-2018 inflation rate of 2.32% as per footnote 57
(2) Ratio of median consumption to mean consumption as per footnote 63
(3) Weighted average consumption of energy relative to the median level for households on SVTs with below and above average income (0.97). This is derived as follows:-

	Proportion of all those on SVTs (a)	Spend on energy rel. to median (b)	Consumption of energy rel. to median for those on SVTs (c)
Below median income	0.54	0.90	0.87
Above median income	0.46	1.13	1.09
		SUM:	0.97 (d)

Notes:

(a) Inferred (approximately) from (i) CMA survey result referred to in footnote 41 that 75% of consumers earning below £18,000 p.a. are on SVTs compared with 68% for all respondents and (ii) the lower boundary of the third income decile is £16,744 according to data underlying Table A6 of *Family Spending 2018* Office for National Statistics..
(b) Source: data underlying Table A6 of *Family Spending 2018* Office for National Statistics. Annual average expenditure on energy of each income decile group derived by multiplying weekly average energy expenditure by 52 and subtracting standing charge (£164). Average of poorest / richest five groups divided by median of the 10 decile groups
(c) Spend on energy relative to the median (i.e. (a)) converted to proportion of median consumption using the parameters of the red SVT line in Figure 2.
(d) 0.54 x 0.87 + 0.46 x 1.09

[61] CMA final report table 14.13 p.997 and paragraph 14.261.

[62] Calculated from:

- The average PPM SVT bill for median consumption: £1,113. (This was the average of the 10 largest suppliers in the prepayment segment for 28 Jan. and 28 Feb. 2017, i.e. prior to imposition of PPM cap. Source: Ofgem website data portal Sept. 2017.)
- The PPM cap at median consumption for April – Sept. 2017: £1,067. (Source: Ofgem website data portal Sept. 2017 and *State of the energy market report* Ofgem October 2017 Figure 2.13 p.32.) (Note that figures for Feb. 2017 onwards used here differ slightly from the figures currently shown on the Ofgem website as they are now calculated using the new TDCV values that entered into effect from 1 October 2017.)
- The no. of dual fuel PPM customers of the Big Six suppliers: 3,962,722 (as per the CMA final report Table 14.13 p.997 and footnote 152 p.1001).

However, these estimates are also over-stated as, like the default tariff cap, they were calculated using the typical[63] level of consumption for all households whereas PPM customers generally consume less. A better (albeit approximate) estimate of the actual savings to consumers from the PPM cap is £168 million p.a.[64].

39. Note also that more than half of the savings from the default tariff cap has accrued to higher income households. This further devalues the benefits of the cap. [65]

[63] The median level (CMA final report paragraph 14.438). The CMA's prior estimate of the saving was £316 million p.a. rather than £282 million p.a. if the mean level was used (see CMA final report footnote 143 p.998).

[64] This estimate is derived by scaling down the estimate of total savings of £182 million p.a. by weighted average consumption of energy relative to the median level for households on SVTs with below and above average income (0.92). This is derived as follows:-

	Estimated proportion of all those on PPMs (a)	Spend on energy rel. to median (b)	Consumption of energy rel. to median for those on PPMs (c)
Below median income	0.80	0.89	0.87
Above median income	0.20	1.13	1.11
		SUM:	0.92 (d)

Notes:

(a) Inferred (approximately) from (i) CMA survey result referred to in footnote 54 that 48% of PPM customers earn less than £18,000 p.a. and (ii) the lower boundary of the third income decile is £16,744 according to data underlying Table A6 of *Family Spending 2018* Office for National Statistics.

(b) Source: data underlying Table A6 of *Family Spending 2018* Office for National Statistics. Annual average expenditure on energy of each income decile group derived by multiplying weekly average energy expenditure by 52 and subtracting standing charge (£205). Average of poorest / richest five groups divided by median of the 10 decile groups.
NB £205 is the average PPM standing charge for April – Sept. 2017, i.e. gas £95.60 and electricity £100.00, plus VAT (see Table 2 of Annex 2).

(c) Spend on energy relative to the median (i.e. (a)) converted to proportion of median consumption using the parameters of PPM SVTs (bill at median consumption of £1113, standing charge of £205).

(d) 0.80 x 0.87 + 0.20 x 1.11

[65] Ofgem concurred with this approach: "Customers on default tariffs are more likely to be vulnerable and on lower incomes. When considering the welfare impacts [of the cap], we would put a greater weight on the social value of savings to these customers compared to those of higher income groups, who tend to be more engaged customers." (*Statutory Consultation - Default Tariff Cap – Appendix 11 – Draft impact assessment* September 2018 Ofgem paragraph 5.103.)

7. The effect of the current price caps on competition

SUMMARY

Price caps on energy bills have a number of drawbacks. In particular, they are liable to stifle competition by reducing consumer engagement and suppliers' incentives to attract customers. This means many customers on good deals are liable to see their bills increase.

Indeed this is what appears to have happened following the introduction of both the default tariff cap and the PPM cap: many tariffs that had been below the level of these caps were increased.

Ofgem had quantified the potential disbenefit of tariffs being increased to the level of the cap at £872 million p.a. (in 2017 prices). Thus price increases are liable to offset a large proportion of the consumer savings from the cap, potentially leaving net benefits of as little as £172 million p.a., just 16% of the claimed benefits.

Energy suppliers have also responded to the default tariff cap by reducing the number of customers eligible for it. They have moved many of them from SVTs to fixed deals, which may be more expensive. Together with price increases of better value tariffs this makes it quite possible that the default tariff cap has brought no benefits to consumers.

Despite setting out how a price cap was liable to affect competition adversely, in estimating the impact of the PPM cap the CMA assumed that tariffs currently below it would remain at the same level. Scaling down the benefits of the PPM cap in the same way as the default tariff cap suggests the overall benefit of the PPM cap was just £28 million p.a..

40. It is recognised that price caps are liable to reduce competition. They can have a number of unintended adverse consequences, including:-

    - Reduced customer engagement as price caps reduce the gain from switching supplier[66]. (Footnote 45 refers to research showing that the level of switching depends on the savings on offer from doing so.)
    - Reduced competition between suppliers to attract customers who are protected by the cap, with a risk that the price cap forms a focal point to which suppliers raise their cheaper tariffs[67]. This could further reduce the savings that can be achieved by switching.

    This means many customers on good deals are liable to see their bills increase.

41. Indeed this is what appears to have happened following the introduction of both the default tariff cap and the PPM cap[68]: many tariffs that had been below the level of these caps have been increased.

[66] CMA final report paragraphs 14.400-14.404.
[67] CMA final report paragraphs 14.405-14.413.
[68] *State of the energy market report* (October 2017) Ofgem pp.7,33 and *Default Tariff Cap: Policy Consultation Appendix 14 – Initial View on Impact Assessment* May 2018 Ofgem paragraph 4.11.

42. Drawing on its experience of administering the PPM cap, Ofgem was aware that the default tariff cap was liable to reduce price competition[69]. It described price increases for customers on tariffs below the cap level as "a material risk"[70] and estimated the potential impact of default and, in particular, fixed tariff prices converging to the cap level at £872 million p.a. in 2017 prices[71].

43. We observed earlier that savings from the default tariff cap were likely to have been of the order of £1,044 million p.a. (see paragraph 37). Thus price increases are liable to offset a large proportion of the consumer savings from the cap. The overall impact of the default tariff cap could be as little as £172 million p.a., just 16% of the claimed benefits.

44. Furthermore energy suppliers have also responded to the default tariff cap by reducing the number of customers eligible for it. They have reportedly moved many of them from SVTs to fixed deals, which may be more expensive[72]. Ofgem had anticipated this too but did not consider that it would be widespread practice[73]. Together with price increases of better value tariffs this makes it quite possible that the default tariff cap has brought virtually no benefits to consumers.

45. The CMA had rejected a temporary price cap for all SVT customers as they believed this ran excessive risks of undermining the competitive process by reducing the incentives of customers to engage, reducing the incentives of suppliers to compete and increasing regulatory risk.[74] Nevertheless its estimate of the impact of the PPM cap assumed that tariffs currently below it would remain at the same level (i.e. the cap would not form a focal point to which suppliers raised their tariffs)[75].

46. Thus the overall benefits of the PPM cap are lower than the £168 million p.a. referred to in paragraph 38 above. Scaling the estimate of the savings due to the PPM cap down by the same ratio as savings from the default tariff cap suggests the overall benefit of the PPM cap is just £28 million p.a.. The number of customers eligible for the PPM cap will also have diminished over time as smart meters were installed (see paragraph 5).

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[69] "The introduction of the default tariff cap could be expected to impact suppliers' ability to compete on price… if the design of the default tariff cap also has the effect of reducing customer engagement… then this might further reduce competition." *Default Tariff Cap: Policy Consultation Appendix 14 – Initial View on Impact Assessment* May 2018 Ofgem paragraphs 4.109-4.110. See also paragraphs 4.13-4.19, 4.73-4.78, 4.83-4.97 and 4.111.

[70] *Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 8.21.

[71] The impacts were estimated (in 2018 prices) as: average net increase in bills for dual fuel typical (TDCV) consumption of £77 p.a. for fixed tariff customers and £36 p.a. for eligible default tariffs that would otherwise be priced below the cap. The corresponding total impacts were £884 million p.a. and £8 million p.a., respectively. (*Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem Table A11.14 and paragraphs 5.44, 5.47-5.48.) The total of £892 million p.a. was converted to 2017 prices using the inflation rate of 2.32% referred to in footnote 57 above.

[72] https://www.theguardian.com/business/2018/dec/31/millions-to-see-annual-energy-bills-drop-as-price-cap-takes-effect

[73] "In practice it may be possible for suppliers to move disengaged customers off default tariffs to fixed tariffs. We… do identify this outcome as a potential risk in terms of the effectiveness of the cap." (*Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem footnote 52 p.31.) Ofgem said that the Standards of Conduct that are part of its regulatory regime "should" have mitigated that risk. (*Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 8.20.)

[74] CMA final report paragraphs 250-252 of the Summary and 11.86-11.94.

[75] CMA final report, paragraph 14.248(h).

8. The effect of a standing charge cap on competition

SUMMARY

Currently, the large and variable standing charges reduce the competitive constraint on energy bills by making it difficult for consumers to compare tariffs. The CMA described how this leads to the weak customer response to which it attributed the adverse effect on competition in retail energy markets.

Both Ofgem and the CMA have previously sought to simplify tariffs to make it easier for customers to understand and compare those on offer but neither has considered capping the standing charge.

Whereas capping the total bill has stifled competition, capping just the standing charge would dramatically boost it. It would become much easier for consumers to compare tariffs and switch as they would only need to consider the unit rate.

By stimulating competition, it has the potential to eliminate the entire £1.4 billion p.a. detriment resulting from ineffective competition.

47. The current large and variable standing charges reduce the competitive constraint on energy bills by impeding consumers' ability to compare tariffs. The CMA detailed how this leads to the weak customer response to which it attributed the adverse effect on competition in retail energy markets (see paragraph 1). It said an energy tariff with both a fixed and variable component (meaning the standing charge and unit rate) "is likely to be more difficult for a domestic customer to understand than a tariff with just a variable component".[76] Given that the standing charge is not fixed across tariffs but varies widely (see Annex 1), understanding tariffs is likely to be more difficult still.

48. These complex tariff structures contribute to inhibiting customers' value-for-money assessments of available options, particularly by those who lack the capability to search and consider options fully, including those on low incomes[77]. The CMA said such difficulty in assessing information was a central feature giving rise to customers' problems in engaging effectively in the energy markets and identifying suppliers offering lower prices[78].

49. Both Ofgem and the CMA have previously sought to simplify tariffs to make it easier for customers to understand and compare those on offer but neither has considered capping the standing charge. Those initiatives were deemed too restrictive but note that the objections to them do not apply to a standing charge cap:-

    - Ofgem's Retail Market Review reforms of 2014 banned complex tariffs and limited suppliers to offering four of them[79]. This was intended to improve customer

[76] CMA final report paragraph 9.165.
[77] CMA final report paragraph 9.563(b)(i).
[78] CMA final report paragraph 9.562. See also paragraphs 9.167-9.169. These cite results from the CMA's customer survey that of those (24%) who found it either fairly or very difficult to shop around, 85% found it difficult to make comparisons between suppliers and 74% found it difficult to understand the options open to them. Similarly, Ofgem's customer survey found that 36% believed it was difficult to compare tariffs.
[79] Under Ofgem's Retail Market Review reforms (see CMA final report paragraphs 9.478-9.513; paragraphs 12.356-12.452 and Appendix 9.7) tariffs were required to consist of a standing charge and

engagement and thereby enhance the competitive constraint provided by customer switching. The CMA recommended that Ofgem remove the ban on complex tariffs and the four tariff rule[80]. It considered that they made it unlikely that suppliers would offer tariffs with no standing charge or a low one for low volume users.

- As part of its reforms Ofgem had considered fixing the standing charge[81]. It decided against doing this apparently because respondents to its consultation expressed concern that this would prevent suppliers reflecting their fixed costs in the standing charge and offering tariffs with low or zero standing charges[82].
- The CMA also considered simplifying tariffs to make it easier for customers to compare tariffs. It debated requiring suppliers to structure all tariffs as a single rate (apparently eliminating the standing charge) but decided against that because it might restrict suppliers' competitive offerings[83].

50. Whereas capping the overall bill has adversely affected competition (see paragraph 41), capping just the standing charge would dramatically strengthen it by making it much easier for consumers to compare tariffs and hence switch to a better value one. Consumers would effectively need to consider just the unit rate, especially if (as seems inevitable) suppliers all set their standing charges at the cap.

51. Thus following a standing charge cap suppliers' ability to raise unit rates to compensate for the loss of standing charge revenue would be constrained. By stimulating competition, a standing charge cap has the potential to eliminate the entire £1.4 billion p.a. detriment to consumers that results from the current ineffective competition.

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either a single unit rate or time-of-use tariffs that could not vary with consumption (see CMA final report paragraph 2 of Annex A to Annex 9.7).

[80] It considered that they restricted innovation and competition between suppliers. It said they prevented suppliers from offering new products or tariffs that would be beneficial to certain segments of the customer population, particularly in relation to energy usage (see CMA final report paragraphs 12.380 and 12.382). The CMA appears to have objected to them partly because they curtailed the ability of suppliers to offer tariffs with no or a low standing charge for low volume users (see also CMA final report paragraph 9.509(c)).

[81] *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem p.1

[82] *The Retail Market Review – Updated domestic proposals* (October 2012) Ofgem. Paragraph 3.11.

[83] The CMA considered requiring suppliers to structure all tariffs as a single unit rate in pence per kWh. It is assumed here that this meant no standing charge: the CMA said elsewhere that the existing tariff structure – with a fixed and variable element – was more difficult to understand than a tariff with just a variable component (CMA final report paragraph 9.165). The CMA decided against this because it considered that limiting tariff structures had the potential to stifle innovation and restrict competition and would limit suppliers' ability to respond to the smart meter roll-out by offering time-of-use tariffs (CMA final report, paragraph 12.381).

9. The savings for consumers from a standing charge cap

SUMMARY

A cap on the standing charge would save consumers on SVTs up to £100 p.a. each. Low income households would be guaranteed to benefit by approx. £150 million p.a. in total, with 80% of the savings going to the very poorest households.

In fact the savings from a standing charge cap are likely to be much higher as suppliers' ability to increase unit rates is likely to be constrained by the boost to competition from a standing charge cap. By combining more effective competition with protection for those who are unable to benefit from it, such a cap could potentially eliminate the entire consumer detriment of £1.4 billion p.a.. Enhanced competition would also lead to better deals for consumers who are not on SVTS so the total benefit could be higher still.

52. A cap on the standing charge would save consumers on SVTs up to more than £100 p.a. each. As set out in section 2, the average dual fuel standing charge in (non-PPM) SVTs is over £100 p.a. more than the appropriate, cost-reflective level so a cap on the standing charge at the efficient level of costs would reduce it by over £100 p.a..

53. The amount actually saved overall would depend on the extent to which suppliers were able to raise unit rates to compensate for their loss of revenue from standing charges. This would depend on the effectiveness of competition.

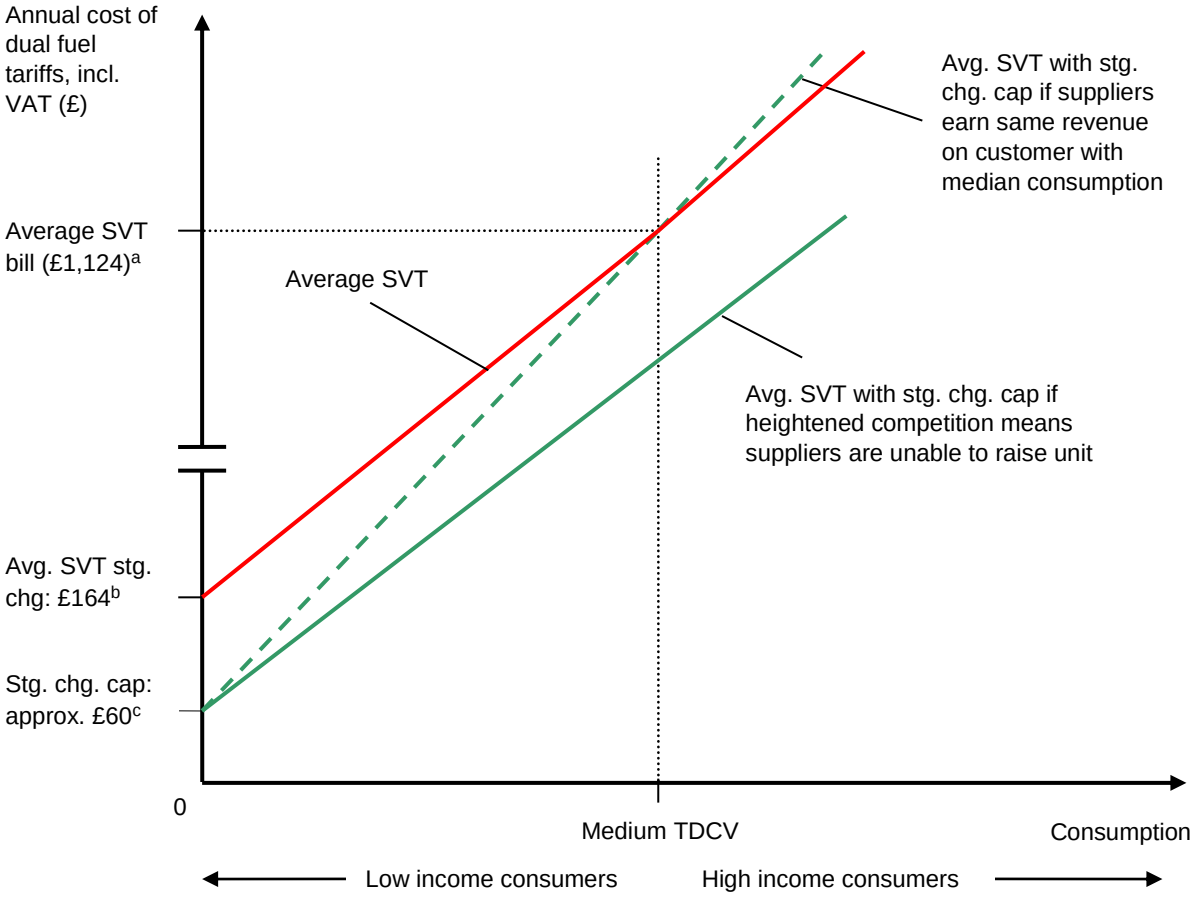
54. The worst case scenario is that a standing charge cap would have no effect on competition whatsoever. Suppliers would then be able to raise unit rates to extract the same overall revenue from customers as they did prior to imposition of the cap. In fact, however, as the previous section explains, a standing charge cap would be likely to boost competition. This would constrain suppliers' ability to raise unit rates.

55. Figure 3 illustrates this range of effects of a standing charge cap on the annual energy bills of (non-PPM) SVT customers with different levels of consumption (and income). (Note that the standing charge cap would apply to PPM customers as well, albeit at a different level.)

56. The amount consumers save is the vertical distance between the red 'SVT' line and the green lines showing SVTs following a standing charge cap:

    - The solid green line shows suppliers unable to raise unit rates and all default tariff customers gaining £104 p.a..
    - The dotted green line depicts suppliers increasing unit rates so that they extract the same overall revenue from customers as they did prior to imposition of the cap. It has a steeper slope than the red line but revenue earned from customers at approximately the median consumption level is unchanged.

FIGURE 3
Effect of a standing charge cap on SVT annual energy bills



[a] See note a of Figure 2.
[b] See note c of Figure 2.
[c] See paragraph 13 and Annex 2.

57. The worst case scenario is that suppliers are able to raise unit rates so that they make the same revenue overall. Despite this, low income consumers (who are most affected by high standing charges and least affected by high unit rates) would still see their bills reduce. Total savings for low income households would be £150 million p.a., comprising roughly £99 million p.a. for non-PPM customers and £51 million p.a. for PPM customers[84].

[84] This is derived by multiplying the number of customers affected by the saving per customer for each of (non-PPM) SVTs and PPMs:-

	Proportion of all those on PPMs (a)	No. of customers (million) (b)	Saving per customer (£ p.a.) (c)	Total saving (£ million p.a.) (d)
SVTs				
Below median income	0.54	7.2	14	98.6
Bottom two income deciles	0.225	3.0	24	72.6
PPMs				

58. Moreover by far the biggest savings would go to the very poorest households because:-

- they are disproportionately represented on SVTs and, in particular, PPMs and
- their energy consumption is significantly less than the median so they are relatively little affected by any increase in unit rates.

80% of these savings (£120 million p.a.) would go to households in the bottom two income deciles[85]. Greater weight should be put on such savings to low income households than higher income groups when considering the welfare impacts of a cap, as Ofgem has said (see footnote 65 above).

59. In fact savings due to a standing charge cap are likely to be much higher as suppliers' ability to increase unit rates is likely to be significantly constrained. A standing charge cap would dramatically boost competition by making it much easier to compare tariffs, as explained in Section 8 above. By combining more effective competition with protection for those who are unable to benefit from it, this measure has the potential to eliminate the entire consumer detriment of £1.4 billion p.a.[86]. Enhanced competition would also lead to better deals for consumers who are not on SVTS so the total benefit could be higher still.

Below median income	0.80	3.2	16	51.2
Bottom two income deciles	0.40	1.6	30	47.1

Notes:

(a) Inferred (approximately) for SVTs and PPMs as per footnotes 60 and 64, respectively, from (i) CMA survey results that (SVTs) 75% of consumers earning below £18,000 p.a. are on SVTs cf. 68% overall (see footnote 41) and (PPMs) that 48% of PPM customers earn less than £18,000 p.a. (see footnote 54) and (ii) the lower boundary of the third income decile is £16,744 according to data underlying Table A6 of *Family Spending 2018* Office for National Statistics.

(b) Estimated proportions (a) x Total no. of customers of the Big Six suppliers (13,432,168 for SVTs and 3,962,722 for PPMs – see footnote 18).

(c) Calculated as:

- the standing charge reduction following a cap: £100 for SVTs and £128 for PPMs (= £205-£77 where £205 was the average PPM standing charge – see footnote 64 note (b) – and £77 is the estimate of the appropriate level of a PPM standing charge – see Annex 2) multiplied by
- (1 minus those households' energy consumption as a proportion of the median consumption level).

(d) = (b) x (c)

[85] These broadly correspond to the CMA and Ofgem's definition of low income households. The CMA defined low income consumers as those earning less than £18,000 p.a. while Ofgem took this as less than £16,000 p.a. (see footnote 41). According to the ONS the first two income deciles had annual earnings of £16,743 or less, with earnings of the third decile group going up to £22,463. (Source: data underlying Table A6 of *Family Spending 2018* Office for National Statistics.)

[86] As noted in footnote 18 the consumer detriment of £1.4 billion p.a. corresponds to approx. £100 per SVT customer, i.e. the same as the reduction in the standing charge brought about by the cap.

10. The effect of the current price caps on carbon emissions and security of supply

SUMMARY

To the extent that the default tariff cap and the PPM cap are successful in lowering prices they lead to higher energy consumption and thereby raise greenhouse gas emissions and diminish security of supply. Ofgem's principal objective and one of its statutory principal duties is to protect the interests of existing and future consumers, including their interests in the reduction of greenhouse gas emissions and in security of supply but it seems to have sought to avoid doing this.

In particular, it has downplayed the likely effect on emissions. To the extent that the default tariff cap did not lead to other tariffs rising to the level of the cap it is reasonable to expect it to increase UK domestic emissions by more than 1%.

The corresponding detriment to consumers from higher emissions (£50 million p.a.) and the potential need for future bill increases to pay for additional investment in generation and network capacity to maintain security of supply should be deducted from the estimated benefits of the current caps.

60. To the extent that the default tariff cap and the PPM cap are successful in lowering bills, they lead to higher energy consumption and so raise greenhouse gas emissions and diminish security of supply.

61. In this regard it is important to dispel a frequent misconception that, as a necessity, consumption of energy is largely unaffected by its price. The CMA cited[87] a study[88] which found that in the short run a 1% rise in domestic electricity prices reduces demand by around 0.35% (i.e. an elasticity of 0.35). Elasticity is significantly greater in the long run (0.85) as consumers are able to respond to increased prices by installing energy efficiency measures. The CMA also cited a review[89] of studies of elasticities across households for electricity and gas which concluded "on average, natural gas price elasticities are greater than electricity or fuel oil elasticities".

62. Ofgem's principal objective and one of its statutory principal duties is to protect the interests of existing and future consumers, including their interests in the reduction of greenhouse gas emissions and in security of supply[90]. The June 2018 version of this paper pointed out, however, that Ofgem's consultation on the default tariff cap in May 2018 did not even mention greenhouse gas emissions or security of supply, let alone

[87] CMA final report paragraph 8.9.
[88] Espey, JA and Espey, M (2004), *Turning on the Lights: A Meta-Analysis of Residential Electricity Demand Elasticities*, Journal of Agriculture and Applied Economics, 36(01)
[89] Gillingham, K, Newell, R and Palmer, K (2009), *Energy efficiency economics and policy*, Resources for the Future Discussion Paper 09-13
[90] *Our Strategy* Ofgem (Ofgem's Corporate Strategy) (https://www.ofgem.gov.uk/sites/default/files/docs/2014/12/corporate_strategy_0.pdf) p.4. Ofgem also claims to aim to deliver through its regulation a consumer outcome of reduced environmental damage. *Op cit* p.10.

attempt to reduce emissions or improve security of supply as Ofgem is required to[91]. We also pointed out that guidance on conducting impact assessments is very clear that the effect on total energy use and greenhouse gas emissions should be quantified and costed[92]. Yet Ofgem had appeared to downplay the likely effect on consumption (which would determine emissions and security of supply)[93].

63. Ofgem's final impact assessment estimated that the default tariff cap would increase total UK domestic greenhouse gas emissions by 0.40% with a value of £17 million p.a. based on the price of carbon[94]. This assumed that the cap did not lead to prices of tariffs not covered by the cap rising to the level of the cap. However, this was based on estimates of energy price elasticities that were either at or below the lowest figures in the ranges of estimates in surveys of the studies of energy price elasticities that Ofgem cited:-

    - For gas Ofgem referred to a review of price elasticities carried out for BEIS[95].This found that studies of the price elasticity had produced estimates between -0.1 (in the short run, with the corresponding long run estimate being -0.17) and -0.28. This review also found evidence in the form of an additional study that the elasticity lies towards the lower magnitude end of the range. Ofgem used -0.1.

    - For electricity Ofgem referred to the paper the CMA had cited which summarised previous studies and yielded price elasticities of between -0.35 in the short run and -0.85 in the long run[96]. Ofgem's September 2018 consultation had adopted -0.35[97] but its November 2018 decision document also mentioned three other studies which estimated the short run price elasticity of demand as ranging from -0.20 to -0.24. Ofgem used -0.26, which was apparently the average of the (now four) studies although the paper it had previously relied on was based on 36 previous studies.

64. Ofgem's choice of elasticities to use in modelling the effect on greenhouse gas emissions appears highly selective:-

    - Ofgem offered no justification as to why the lowest figures (which are applicable only in the short run) were the most appropriate.

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[91] In the 413 pages of consultation documents for the default tariff cap Ofgem devoted just three small paragraphs to the possible impact "on the environment". *Default Tariff Cap: Policy Consultation Appendix 14 – Initial View on Impact Assessment* May 2018 Ofgem paragraphs 4.162-4.164.
[92] The Green Book Central Government Guidance on Appraisal and Evaluation 2018 HM Treasury p.69.
[93] It said that "For most customers, it might be expected that price elasticities are low as energy is an essential good." *Default Tariff Cap: Policy Consultation Appendix 14 – Initial View on Impact Assessment* May 2018 Ofgem paragraph 4.24. It cited "a range of studies" implying that domestic demand for gas in the UK is relatively inelastic (in fact just two studies) and made no mention of the CMA's (much larger) estimates (see paragraph 61 above) or those cited in Annex 5 of this document.
[94]*Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 7.54, 7.56.
[95] National Energy Efficiency Data Framework (NEED) report summary of analysis *Annex D Gas price elasticities* (June 2016) DECC (now BEIS) p.10. (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/532539/Annex_D_Gas_price_elasticities.pdf)
[96] See paragraph 61 and footnote 88 above.
[97] *Default Tariff Cap: Statutory Consultation Appendix 11 – Draft Impact Assessment* September 2018 Ofgem paragraphs 5.85-5.91.

- Ofgem did not include the studies referred to in Annex 5 of this paper (which found energy price elasticities of -0.27 and -0.48) even though they had been brought to its attention in response to all of its consultations.
- Ofgem did not incorporate the CMA's finding based on a review of studies that gas elasticities are greater than electricity elasticities, which had been found to lie between -0.35 and -0.85 (see paragraph 61 above).

65. In addition, estimates of the effect of changes in overall energy bills on consumption may under-estimate the effect on consumption and emissions. Demand may be even more responsive to reductions in the unit rate (as the current caps aim to bring about) than the overall bill (i.e. including the standing charge) because it is this that determines how much consumers save by foregoing consumption.

66. In consequence Ofgem's estimate of the potential effect of the default tariff cap on greenhouse gas emissions is likely to be misleadingly low. Using instead the corresponding long run elasticity estimates from the studies cited (0.85 for electricity and 0.28 for gas), which may be said to be more appropriate as they capture the entire effect of the price cap, would suggest an increase in UK domestic emissions due to the cap of approx. 1.2%, with a carbon value of approx. £50 million p.a..

67. Ofgem has not conducted a full environmental impact assessment and said that conducting one would be "disproportionate"[98]. However, it is clear that its cap could have had a very significant impact on greenhouse gas emissions.

68. Ofgem's consultations on the default tariff cap did not consider at all the effect of the increased energy consumption resulting from the default tariff cap on security of supply. The impact assessment that formed part of its decision document said that there was "a limited risk of an increase in energy consumption affecting security of supply over the potential period of the cap"[99].

69. It seems that Ofgem has sought to avoid its duty to protect the interests of consumers by reducing greenhouse gas emissions and improving security of supply.

70. The detriment to consumers from higher emissions and the need for future bill increases to pay for additional investment in generation and network capacity to maintain security of supply should be deducted from the estimated benefits of the current caps.

[98] *Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 7.53.
[99] *Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 7.65.

11. The effect of a standing charge cap on carbon emissions and security of supply

SUMMARY

While a standing charge cap would mean those in fuel poverty can afford more energy, the resulting higher unit rates would lead consumers generally to reduce their overall energy consumption. This would lower greenhouse gas emissions. It would also improve security of supply, reducing the need for investment in additional generation and network capacity and avoiding future bill increases to pay for this. These factors mean the benefits of a standing charge cap will be greater than the figures cited in section 9 above.

Note that suppliers are currently able to recoup the costs of government policies aimed at reducing carbon emissions and tackling fuel poverty through the standing charge rather than the unit rate. This actually incentivises *higher* energy consumption and emissions overall while making energy *less* affordable for low income households so is counter-productive and exacerbates these problems. An effective standing charge cap would prevent this.

71. A standing charge cap would mean those in fuel poverty could afford more energy but suppliers would respond to the cap by seeking to raise unit rates and this would lead consumers to reduce the amount of energy they consume overall.

72. A standing charge cap would thus lead to significant reductions in greenhouse gas emissions and would also improve security of supply and reduce the need for investment in additional generation capacity and network enhancements. The cost of this investment would have been passed on to consumers (see Annexes 2 and 4) so a standing charge cap would avoid these future bill increases.

73. Asa result the total benefit of a standing charge cap will be greater still than the £1.4 billion p.a. mentioned earlier given that it will lower carbon emissions and avoid future bill increases to pay for investment in generation and network capacity.

74. In addition, note that suppliers are currently able to recoup the costs they incur under government policies aimed at reducing carbon emissions and tackling fuel poverty through the standing charge rather than the unit rate. This actually incentivises *higher* energy consumption and emissions overall while making energy *less* affordable for low income Households so is counter-productive and exacerbates these problems. An effective standing charge cap would prevent this.

12. Application to businesses

SUMMARY

Similar competition problems apply to the supply of energy to SMEs and they (especially micro-businesses) face high energy bills too. Capping the standing charges businesses pay would substantially reduce the energy bills of micro-businesses in particular. By also strengthening the competitive constraint on suppliers through improved price transparency and consumer engagement it could eliminate the entire £220 million p.a. detriment to SMEs.

75. The CMA also identified features of the markets for the retail supply of gas and electricity to SMEs that give rise to an adverse effect on competition through an overarching feature of weak customer response from micro-businesses. Aspects of this included limited customer engagement; a general lack of price transparency and various default tariffs that customers can be automatically moved on to if they have not actively engaged with their energy supplier or have not agreed a contract. Detriment was estimated (conservatively) at approx. £220 million p.a., of which approx. £180 million p.a. related to micro-business customers.

76. As with domestic energy bills, capping the standing charge on non-domestic energy bills has the potential to strengthen the competitive constraint on suppliers by improving customer engagement and price transparency. It would in any case substantially reduce the energy bills of smaller businesses that consume least energy.[100]

[100] CMA final report paragraphs 275-299 of Summary.

13. Metering costs

SUMMARY

Standing charges could be reduced further, in which case the benefits of a cap would be further enhanced, if Ofgem took action to resolve competition problems in markets for the provision of metering products and services to suppliers. This would reduce the costs suppliers incur in providing meters. An estimate of the likely savings to consumers is £270 million p.a..

77. Standing charges could be reduced further, in which case the benefits of a cap would be further enhanced, if Ofgem took action to resolve competition problems in markets for the provision of metering products and services to suppliers. This would reduce the costs suppliers incur in providing meters, one of the categories of costs that are rightfully recovered through the standing charge.

78. A report published by Ofgem in 2016[101] expressed concern that competition in the provision of gas metering products and services at non-domestic premises was not as effective as it should be[102].

79. In particular, gas suppliers incur significant costs when they switch meter provider. Incoming providers appointed by suppliers are not generally able to adopt meter assets in situ so must replace them[103]. These switching costs weaken competitive constraints on metering providers and form a barrier to entry[104]. The limited competition, costs incurred in replacing meters and raised financing costs for meter provision (as shorter asset life means riskier investment) result in higher meter rental charges to suppliers. These are likely to feed through to end customers in their energy bills.[105]

80. The rental charges on gas meters provided at domestic premises are regulated, although the report included evidence which indicates that meter providers' margins on domestic-size meters may actually be higher than for other meters.[106]

81. The same issues affecting suppliers' metering costs may be expected to apply in relation to electricity meters at both domestic and non-domestic premises and to smart meters once they are installed.

82. Dermot Nolan (Ofgem's Chief Executive) gave a commitment to the Public Accounts Committee in June 2014 (in relation to smart meters) that there should be a requirement (as opposed to just a commercial incentive) for suppliers to use the same physical

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[101] *Review of the non-domestic gas metering market* (March 2016) Ofgem (hereafter referred to as 'Market review report').
(https://www.ofgem.gov.uk/system/files/docs/2016/03/market_review_report_final.pdf).
[102] Market review report p.4.
[103] Market review report p.4.
[104] Market review report chapter summary p.18.
[105] Market review report p.30.
[106] It said analysis of one meter provider's costs and prices (which appeared to be representative of the industry) suggested that additional mark-ups that were unrelated to costs were being added to what were already comfortable rates of return net of inflation. (Market review report p.30.) These mark-ups were 20% for domestic-size meters and 15% for other meters (market review report footnote 43 p.30).

metering equipment when a customer changes supplier[107]. Note that this means that metering equipment should be transferred between providers and does not relate to whether smart meters are interoperable, which merely refers to whether different companies would be *able* to operate meters (if given permission by the meter owners).

83. Ofgem said in the report that it intended to take a number of actions to address its concerns[108] such as exploring the scope for encouraging meter providers to sell or rent meters in situ to incoming providers[109]. It said that in due course it would review progress and the effect of its actions on the state of competition in the market. If progress was not evident it would consider whether it might be appropriate to take other actions, including consulting on a market investigation reference to the CMA[110].

84. However, it is not apparent what Ofgem has done in relation to these various commitments.

85. The course of action open to Ofgem to rectify the situation is to make a market investigation reference to the CMA of metering markets (as it had done with the energy market). Given the relatively straightforward nature of the competition problems[111] it is reasonable to assume that the CMA would be able to impose remedies to rectify them. An estimate of the likely savings to consumers is £256 million p.a..[112]

[107] Stephen Lovegrove, Permanent Secretary at the Department for Energy and Climate Change (now BEIS, the Department for Business, Energy and Industrial Strategy), gave a similar commitment. (http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/public-accounts-committee/smart-meters-followup/oral/10401.html Qs.68-73, 76).
[108] Market review report p.32.
[109] Market review report p.33.
[110] Market review report p.37.
[111] Similar to those revealed in the market investigation of the domestic bulk liquefied petroleum gas market in 2006.
[112] This estimate is calculated as 40% (additional mark-up on domestic-size gas meters referred to in footnote above + corresponding adjustment for lack of competitive pressure on costs) x £16 (National Grid rental charge for domestic-size meters in 2017-18) x 25 million (approximate number of domestic and non-domestic premises) x 1.6 (as meter rental charges for electricity meters are less than for gas meters).

14. VAT on the standing charge

SUMMARY

Energy bills would also be lowered and the benefits of a cap on the standing charge further enhanced if the Government withdrew VAT (currently levied on energy bills at 5%) from the standing charge. The standing charge confers the ability to access a supply of energy, which is a necessity. The savings to consumers from this measure following a cap on the standing charge at £60 p.a. (including VAT) are estimated at £70 million p.a. The belief that EU rules prevent this appears to be a misconception.

86. The benefits of a cap on the standing charge would also be further enhanced if the Government withdrew value added tax (VAT), currently levied at 5% on all elements of energy bills, from the standing charge. This would be on the basis that the standing charge confers the ability to access a supply of energy, which is a necessity[113]. Doing this would also accord with the Ramsey principle of minimising distortions in consumption patterns, which entails lower mark-ups on consumers with more elastic demand, as mentioned earlier (paragraphs 15-17).

87. The savings to consumers from this measure following a cap on the standing charge at £60 p.a. (including VAT) are estimated at £70 million p.a.[114].

88. There is a belief that EU rules prevent this but that appears to be a misconception so this could be done regardless of whether or not the U.K. leaves the E.U..

89. EU directives constrain the application of reduced rates of VAT. They permit no more than two different reduced rates (each of no less than 5 per cent) that can apply to a restricted set of goods and services[115]. However, there are exceptions whereby EU members are allowed to charge 'special rates' of VAT – reduced rates for additional goods and services and reduced rates under 5 per cent (including zero rates). They are allowed to apply a reduced rate to the supply of natural gas, electricity and district heating.[116]

90. Moreover items not subject to VAT prior to the introduction of the EU Single Market in 1992 may continue to be zero-rated where the exemptions have "been adopted for clearly defined social reasons and for the benefit of the final consumer".[117] It is thought that this means the standing charge could be zero-rated as energy bills (including the standing charge) were zero-rated prior to 1992.

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[113] That energy is an 'essential of life' was an argument propounded by, for example, the Mirrlees Review of the tax system (a collaborative research venture led by the Institute for Fiscal Studies) in favour of goods such as domestic fuel facing lower rates of tax. Mirrlees, J., Adam, S., Besley, T., Blundell, R., Bond, S., Chote, R., Gammie, M., Johnson, P., Myles, G. and Poterba, J. (2011), *Tax By Design*, Oxford University Press pp. 156, 159.

[114] (£60 - £60/1.05) x 25 million consumers.

[115] Article 98 of the EU VAT Directive (*Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax*) (http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32006L0112). The categories of goods or services to which the reduced rates may apply are listed in Annex III of the Directive.

[116] Article 102 of the EU VAT Directive.

[117] Article 110 of the EU VAT Directive.

15. Conclusion

SUMMARY

The significance of standing charges was overlooked in the CMA's inquiry. Nonetheless a standing charge cap efficiently achieves what the CMA and Ofgem had sought to do when they looked at both simplifying tariffs to make comparison of them easier protecting disengaged customers. It is a unique way of stimulating more effective competition while protecting those who are unable to benefit from it.

Whereas the default tariff and PPM caps may have yielded very few benefits to low income households, a standing charge cap would guarantee savings of at least £150 million p.a., with 80% going to the very poorest households. In fact the boost to competition means it could eliminate the entire £1.4 billion p.a. detriment suffered by consumers on SVTs and lead to better deals for consumers generally. It would also lower carbon emissions and avoid the need for bill increases to pay for additional generation and network capacity to maintain security of supply.

A standing charge cap could eliminate the £220 million p.a. detriment to SMEs too.

Ofgem could reduce standing charges by a further £250 million p.a. by resolving competition problems in the provision of meters and the government could save consumers a further £70 million p.a. by eliminating VAT on the standing charge.

This approach of reducing standing charges could also be applied to other utilities where ineffective competition means bills have to be regulated such as water and telephone landlines.

91. The significance of standing charges was overlooked in the CMA's investigation. The only reference in the CMA's report to suppliers' ability to levy excessive standing charges and the impact of this on poor households appears to be a comment from one of the Big Six energy suppliers, SSE. It said that suppliers could respond to a form of PPM price cap that had been mooted by the CMA by increasing standing charges. It said this "would be particularly disadvantageous to lower users, a group which includes some of the most vulnerable consumers"[118].

92. Unfortunately when it came to designing the default tariff cap Ofgem followed the lead the CMA had set when it devised the PPM cap. The consequent softening of competition and suppliers' ability to evade the default tariff cap by moving customers off SVTs, together with the higher carbon emissions and reduced security of supply, mean they are likely to have conferred minimal benefits. Most of any savings they have delivered will have gone to higher income households.

93. Ofgem has boxed itself (and the Secretary of State) in. The cap was introduced because competition was ineffective and it must remain in place until competition is effective (see footnote 15) but it has actually made that prospect more remote. Ofgem and the minister potentially face a fruitless annual loop of competition reviews followed by decisions where there is little option but to retain the cap. Moreover Ofgem's announcements about cap levels mean it is now perceived as responsible for increases in energy bills.

[118] CMA final report paragraph 14.76.

94. A standing charge cap offers a unique way out of this impasse. This simple, limited measure would be disproportionately effective in both boosting competition and protecting vulnerable consumers. Indeed it would efficiently achieve what the CMA and Ofgem had sought to do in considering both extending the PPM cap to the types of people who are disengaged consumers (see paragraphs 6 and 9) and in simplifying tariffs to make it easier for customers to compare tariffs (see paragraph 49).

95. Unlike the current caps, a cap on just the standing charge would:-

- target protection at the low income households most in need of it
- involve minimal intervention in the market, engendering less uncertainty and regulatory risk and thereby maximising savings to consumers
- boost competition, leading to lower tariffs generally
- reduce carbon emissions and the need for investment in generation and network capacity to maintain security of supply.

96. A standing charge cap would guarantee savings for low income consumers of at least £150 million p.a., with 80% going to the very poorest households. In fact the stimulus to competition means savings are likely to be much higher. This measure has the potential to eliminate the entire £1.4 billion p.a. detriment suffered by consumers on the Big Six suppliers' SVTs.

97. Indeed the total benefit of a standing charge cap could be greater still. Enhanced competition would also lead to better deals for consumers generally. It would also lower carbon emissions and reduce the need for investment in additional generation and network capacity, thereby avoiding future bill increases to pay for this.

98. However, Ofgem is running the risk of restricting its room for manoeuvre. Its scope to introduce an effective standing charge cap is threatened by its current proposal to introduce a substantial fixed charge for consumers to pay for network costs. Like the default tariff cap, this is ill-conceived: it fails to consider economic efficiency or take into account the adverse effect on low income households, carbon emissions and security of supply.

99. Capping the standing charge in energy bills to businesses could eliminate the current £220 million p.a. detriment to SMEs too.

100. Ofgem could also take action to address competition problems in metering markets in order to reduce the costs suppliers incur in providing meters, which would further reduce standing charges by approx. £250 million p.a.. In addition, the Government could eliminate VAT on the standing charge, which would save consumers a further £70 million p.a..

101. The approach of reducing standing charges could also be applied to other utilities where competition is not effective so bills have to be regulated. Examples are water (when competition is introduced and at premises where supply is metered) and telephone landlines.

Annex 1: The average non-PPM SVT standing charge

The average standing charge is calculated according to the standing charges in the non-PPM SVTs of the 10 suppliers with more than 250,000 non-PPM customers in September 2017. These are weighted by the number of customers on each of these suppliers' SVTs (source: Ofgem).

TABLE 1
Large suppliers' non-PPM SVT standing charges and calculation of the average

Supplier	Name of SVT (direct debit)	Daily stg. charge (p)[a]		Total p.a. (£)[b]	No. of non-PPM SVT customers[c]
		Gas	Elec.		
British Gas	Standard - Paper and Paperless	26.0	26.0	189.87	4,847,737
E.ON	E.ON Energy Plan (fixed dir. debit)	21.9	16.4	119.89	2,248,613
EDF Energy	Standard (Variable)	26.3	18.9	164.80	1,557,526
Npower	Standard - Paper and Paperless	15.8	15.8	115.51	1,246,569
Scottish Power	Standard	27.4	27.4	189.45	1,034,426
SSE	Standard (paper billing)	16.5	16.5	120.09	2,497,297
OVO Energy	Simpler Energy Paper & Paperless	28.8	28.8	210.02	148,294
Utility Warehouse	Gold and Double Gold	21.6	22.4	160.65	248,859
Co-operative Energy	Green Pioneer Paper & Paperless	20.0	20.0	146.00	92,296
First Utility	First Variable - Paperless	27.5	5.0	118.63	155,129
				Big Six:	13,432,168
			Average:	155.34	
				Total	14,076,746
			Average	155.54	

[a] Including VAT
[b] Adjusted for dual fuel discounts (i.e. offered by suppliers to customers who purchase both gas and electricity from them).
[c] As of April 2017. Source: Ofgem website (in September 2017).

Annex 2: The efficient level of the standing charge

The efficient level of a cap on the standing charge depends on which elements of the costs incurred by suppliers should be recovered through it. This essentially depends on whether they are incremental costs of serving customers or, rather, related to the amount of energy consumed, in which case they should be recouped through the unit rate instead.

In 2012 Ofgem considered which cost elements might be included in a fixed standing charge as part of its reforms aimed at simplifying tariffs (see paragraph 49 above)[119]. It assessed costs incurred by suppliers according to whether they varied with energy consumption and consulted on whether to adopt a narrow or wide definition of a standardised standing charge.

Ofgem said that under a 'narrow' definition the standing charge would include only network costs[120]. It estimated those costs that might be included under the widest definition of the standing charge[121] as shown in the following table[122]:-

TABLE 2
Ofgem's estimate of costs to be included in the standing charge

		Illustrative annual cost for average consumer (£)	Recovered through	
			standing charge	unit rate
Network costs:	Gas transmission	6	X	✓
	Gas distribution	122	X	✓
	Electricity transmission	19	X	✓
	Electricity distribution	81	✓(£13)[d]	✓(£68)
Policy costs:	Energy Co. Obligation*	29 (gas), 29 (elec)	✓	X
	Warm Home Discount*	7 (gas), 7 (elec)	✓	X
Metering costs*		23 (gas), 15 (elec)	✓	X
Other supplier fixed costs*		25 (gas), 25 (elec)	✓	X

* Not included under a narrow definition of the standing charge
[m] Metering costs estimates were based on traditional meters, not smart meters
[d] The Distribution Use of System (DUoS) fixed charge
Source: *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem (Table 2.1 p.11).

However, Ofgem did not conclude on whether to adopt a narrow or wide definition as it decided against fixing the standing charge (see paragraph 49 above).

Considering the possible elements of a fixed standing charge:-

i) Network (transmission and distribution) costs

Ofgem determined that the bulk of the charges incurred by suppliers for use of the transmission and distribution networks should be recovered through the unit rate as they

[119] *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem (hereafter referred to as 'Standardised Element document') (https://www.ofgem.gov.uk/publications-and-updates/standardised-element-standard-tariffs-under-retail-market-review).
[120] Standardised Element document Appendix 1 paragraph 1.2.
[121] Standardised Element document paragraph 2.10 p.10.
[122] Standardised Element document table 2.1, p.11.

varied with the amount of energy consumed. Just a small element of electricity distribution costs were to be included in the standing charge[123].

The CMA went further. In setting the PPM price cap for nil consumption at the average standing charge of the Big Six energy firms' PPM tariffs it broke the standing charge down into its components. It stated that "the value of the price cap at nil consumption does not include, nor need to include, network costs since these are volume driven"[124]. It said that the network charging statements of the network companies defined 'use of system' charges to be nil at nil consumption[125].

Thus it has been acknowledged that almost all (if not all) network costs should be recovered through the unit rate.

ii) Costs of government policies: the Energy Company Obligation (ECO), Feed-in tariffs (FITs), the Warm Home Discount (WHD) and the Renewables Obligation (RO).

These are all aimed at tackling fuel poverty and/or reducing carbon emissions. Annex 3 describes how suppliers are charged for each of these policies.

The original version of this paper in October 2017 found that the costs that suppliers incur under three of the four (ECO, FITs and RO) depend on the amount of energy supplied rather than the number of customers served. Thus they would efficiently be recovered through the unit rate rather than the standing charge.

Since publication of that analysis, Ofgem has confirmed this for these schemes as well as for Contracts for Difference, the Capacity Market and AAHEDC[126]. It said that it would expect to design the default tariff cap to reflect this.[127]

The WHD was the exception. However, it is in any case counter-productive for the costs of measures aimed at reducing fuel poverty or emissions to be included in the standing charge rather than the unit rate. This itself makes energy less affordable for low income households while incentivising higher consumption and emissions overall.

Smaller suppliers are exempt from the costs of three of the four policies listed in Annex 3 (ECO, FITs and WHD). There is no justification for smaller suppliers' standing charges to reflect these costs given their exemption from them. Ofgem offered the justification for small suppliers' standing charges including these costs that it would enable the smaller suppliers to recover their higher than average fixed costs.[128] However, it is not appropriate to require low consumption / low income households to shoulder the burden of rectifying that problem.

Thus it may be said to be inappropriate for these policy costs to be recovered through the standing charge.

iii) Metering costs

The costs incurred in providing meters clearly relate to serving customers so are appropriately recovered through the standing charge. The cost suppliers incur for

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[123] Standardised Element document Appendix 1 paragraphs 1.7-1.11.
[124] CMA final report footnote 59 p.962.
[125] CMA final report paragraph 14.144.
[126] Assistance for Areas with High Electricity Distribution Costs
[127] *Working paper #4: Treatment of environmental and social obligation costs under the default tariff cap* (April 2018) Ofgem paragraph 1.6, Table 2, paragraphs 4.8-4.9.
[128] Standardised Element document paragraph 1.36 of Appendix 1.

providing domestic gas meters is regulated by a price cap, which was set at £15.93 p.a. for 2017-18[129]. Electricity meters appear to be cheaper to provide: they are less sophisticated than gas meters, which involve a hazardous substance, and the CMA allowed less for electricity meters when it set the PPM price cap[130].

Suppliers also need to pay for the smart meter rollout. The cost of this has been estimated at £1.50 per customer per year[131].

Metering costs are considered further in Section 13 of this paper.

iv) Other fixed costs

Ofgem calculated these simply by subtracting the above costs from the typical standing charge levied by suppliers[132]. Given the lack of constraint on the amounts suppliers levy as standing charges (see paragraph 13 above), this estimate is not meaningful and is liable to be a significant over-estimate.

Ofgem has said separately that suppliers' other operating costs include the costs associated with billing, bad debt and costs associated with depreciation and amortisation[133]. It is not possible in this short paper to quantify all such factors and assess what proportion of them might be attributable to the standing charge. However, billing costs undoubtedly would be, while bad debt might be mainly attributable to charges for energy consumed, especially following a standing charge cap, as charges for energy supplied account for the bulk of energy bills.

Meter reading costs form another category of costs that are clearly attributable to the standing charge. However, the rollout of smart meters will reduce this and the costs of serving customers generally[134].

Ofgem said suppliers earn a margin on their sales of energy too[135]. It does not seem appropriate for suppliers to earn a margin on the standing charge given that this merely enables a customer to receive supply of energy and does not itself confer benefit to consumers.

Thus metering costs appear to be the main category of costs that do not vary with the level of consumption so are justifiably recouped through the standing charge. Other elements may be (possibly) a small element of electricity distribution costs; meter reading costs; billing costs; and some fraction of other overheads / other fixed costs.

Of the costs in Table 1 above, the only ones that are rightfully included in the standing charge are:-

(a) (possibly) electricity distribution costs (£13)

(b) some proportion of the metering costs of £38, although note that this may be an over-estimate given the amounts cited in (iii) above, and

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[129] *Metering charges from 1 April 2017* National Grid p.6. (http://www2.nationalgrid.com/UK/Services/Metering/Publications/Metering-Charges/).
[130] CMA final report paragraph 14.122.
[131] CMA final report paragraph 14.238.
[132] Standardised Element document Appendix 1 paragraph 1.47.
[133] *Retail Energy Markets in 2016* Ofgem p.31.
[134] CMA final report paragraph 14.119 and paragraph 3 of Appendix 9.8.
[135] *Retail Energy Markets in 2016* Ofgem p.31.

(c) some fraction of the other fixed costs of £50.

This suggests that the appropriate level of the dual fuel standing charge for non-PPM customers is of the order of £50-60 (say £60 including VAT), which is much less than the standing charges currently levied by suppliers.

That the average SVT standing charges currently levied are excessive can also be judged by inspection of the components of the PPM cap at zero consumption. As calculated by Ofgem for summer 2017 according to the methodology set by the CMA, these are:-

TABLE 3
Components of the PPM cap at zero consumption

£ (excl. VAT)	Electricity	Gas
Network	0.0	0.0
Policy	42.2	8.5
Other	29.4	44.2
PPM uplift	24.4	39.7
Headroom	4.1	3.2
Total	100.0	95.6

Source: Ofgem[136]

Subtracting the PPM uplift gives a dual fuel total of £131.50 (or £138.08 including VAT), which is significantly less than the current average level of (non-PPM) standing charges of £156 including VAT (see paragraph 13 and Annex 1). Subtracting headroom (included by the CMA in order to allow suppliers to price below the cap) and policy costs (which we have shown should be recovered through the unit rate) leaves just 'other costs', which total £73.60 (or £77.28 including VAT). This may be an over-estimate given Ofgem's previous estimate of these, as summarised in (b) and (c) above.

[136] https://www.ofgem.gov.uk/publications-and-updates/prepayment-price-cap-1-october-2017-31-march-2018 (Pre-payment price cap calculations spreadsheet, columns for '2017-18 summer')

Annex 3: How suppliers are charged for the costs of government social and environmental policies

This feeds into section (ii) of Annex 2.

The policies in question are:-

The Energy Company Obligation (ECO)[137]

This aims to reduce carbon emissions and tackle fuel poverty. It requires large energy suppliers (more than 250,000 domestic customers) to install energy efficiency measures such as insulation. Each supplier's obligation is determined according to how much gas and electricity it supplies to its customers[138].

Feed-in tariffs (FITs)[139]

These encourage small-scale, low carbon generation. Large suppliers (more than 250,000 domestic customers) are required to make payments to individuals and organisations for both generating and exporting low carbon electricity. The costs of the FIT scheme are spread across all electricity suppliers according to each supplier's share of the electricity market in terms of the amount of electricity supplied (taking into account FIT payments they have already made)[140].

The Warm Home Discount (WHD)[141]

This requires large suppliers (more than 250,000 domestic customers) to provide support, primarily through bill rebates, to customers who are in or at risk of fuel poverty.[142] Each supplier's costs are liable to vary with the number of its customers so Ofgem considered there would be merit in this cost being recovered through the standing charge.[143]

Renewables Obligation (RO)

This requires suppliers to source a specified proportion of their electricity from eligible renewable sources or pay a penalty.

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[137] CMA final report paragraphs 3, 6-20 of Appendix 8.1.
[138] CMA final report paragraphs 11-14 of Appendix 8.1.
[139] CMA final report paragraphs 3, 21-23, 26-28 of Appendix 8.1.
[140] *Feed-in Tariff Annual Report 2015-16* (Dec. 2016) Ofgem p.5 and *Feed-in Tariff: Guidance for Licensed Electricity Suppliers (Version 8.1)* (May 2016) Ofgem chapter 9.
[141] CMA final report paragraphs 3, 24-27, 29 of Appendix 8.1 of and Standardised Element document paragraphs 1.31-1.36.
[142] Those on the Guarantee Credit element of Pension Credit receive automatic rebates. (In winter 2017-18 these are for £140 off electricity bills.) Energy companies can set their own rules about which other vulnerable groups can apply for a rebate, typically those on means-tested benefits with young children or a disabled member. (CMA final report paragraph 2.108).
[143] Standardised Element document paragraphs 1.34-1.35.

Annex 4: Ofgem's Targeted Charging Review of network costs

Ofgem is carrying out a major review of electricity network charges and proposes to replace some of the current usage related charges (i.e. charges related to the amount of energy supplied)[144] with a substantial fixed charge per consumer[145]. This would greatly diminish the scope for an effective cap on the standing charge.

Ofgem distinguishes between the costs of running the electricity network that have a clear cost driver (which it calls "forward looking costs") and those that don't and are in effect fixed ("residual costs"). The network companies' charges to suppliers should reflect the forward looking costs so that (on the assumption that these are passed through in the unit rate) consumers are incentivised to use the network only if the benefit to them is greater than the additional cost they impose on the network.

The residual costs, which amount to about 40% of network charges, are, like the forward looking costs, currently recovered from suppliers by a usage-related charge. To the extent that these charges are passed on to end consumers in the unit rate users who have their own generation (typically businesses and better off households) are able to avoid paying them (but are still able to make use of the network as and when they wish to). Reductions in usage do not cause any reductions in residual costs so other users end up paying a disproportionate amount. With increasing levels of such distributed (or 'behind the meter') generation, this problem is expected to grow.[146]

Ofgem is proposing that these costs should instead be recovered through a standing charge per customer of around £64 p.a., or £103 p.a. for Economy 7 customers. It is also proposing to reduce the contribution made by domestic consumers vis-à-vis businesses, leading to a gain by households with median consumption of £8 p.a. Nevertheless a paper published by Grid Edge Policy[147] has highlighted that consumers who use less than the average amount of electricity (low income households) will pay more while those on high incomes will pay less, in some cases significantly less. (This echoes the discussion in Section 5 of this paper that low income households are disproportionately affected by high standing charges and in Section 6 that lower unit rates benefit high income households most.)

Indeed the question of whether to pay for the fixed costs by levying usage or standing charges mirrors the issues in this paper generally. In particular, despite ruling out a usage-based allocation on the basis that it would be 'distorting', Ofgem appears not to have considered the alternative charging options in terms of any general framework of the optimal, economically efficient outcome, namely that of competition, in which prices reflect costs.[148]

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[144] Residual charges are recovered from smaller users, such as households and small businesses, via per-unit consumption charges and from larger users by a mix of per-unit consumption charges and peak demand charges for transmission.

[145] *The Targeted Charging Review: minded to decision and draft impact assessment* November 2018 Ofgem

[146] BEIS and Ofgem have adopted a principle that users of the network should pay their fair share of the costs of the energy system. This corresponds to a principle articulated by the Secretary of State, Greg Clarke, in November 2018 that there should be no 'free riders'.

[147] *Understanding the Impacts of Ofgem's Targeted Charging Review* January 2019 Grid Edge Policy. The paper is co-authored by Maxine Frerk who, as Senior Partner Networks at Ofgem until 2016, was responsible for, among other things, network charging.

[148] A report commissioned by Ofgem concurred: "The key economic principle behind the optimal recovery of sunk costs is… that such charges should have as an objective creating minimal changes in behaviour relative to a set of efficient, cost-reflective charges, i.e. minimising distortions."

In a competitive outcome prices would equal the marginal (i.e. 'forward looking') costs but this wouldn't recover the fixed (i.e. 'residual') costs. The large fixed costs mean the electricity network is a natural monopoly and the network operator (National Grid) has market power, which is why its charges are regulated.

The 'second best' solution adopted by regulators in such situations is Ramsey pricing (as described in paragraphs 15-17 of this paper). This minimises the distortion of consumption patterns relative to those that would occur under competition by adding mark-ups to cover the fixed costs which are inversely proportional to consumers' price elasticity of demand.

Lower income/consumption households have the highest price elasticity, as evidence presented in Annex 5 shows, so economic efficiency calls for them to face the lowest mark-ups. This entails restricting the standing charge and recovering fixed costs largely through the usage charges.

To the extent that some households (and businesses) come to face higher usage charges than others this is indeed a distortion of consumption patterns but one which needs to be set against the wider efficient charging framework. Ideally Ofgem would seek to rectify this issue by other means as the charging method it is proposing is liable to produce greater distortion.

Incidentally, some of the costs described as 'fixed' are in fact variable in the long run. Indeed Ofgem describes the residual charges as "for the maintenance and investment for the longer term"[149] (whereas forward-looking charges reflect short-term circumstances). This means projected reductions in usage incentivised by current usage charges *will* lead to lower residual costs as less investment in the network will be called for. Thus, for example, Ofgem's proposal refers to the level of micro-generation, which includes on-site and household solar generation, increasing more than ten-fold by 2040.[150] This forecast is based on assumptions of rapid decarbonisation and high decentralisation (such as might be incentivised by high usage charges).

It is also worth noting that this is National Grid's own forecast[151] and just one of four 'scenarios' they posit. In the other scenarios growth is substantially less. Indeed the current scale of the problem of consumers having their own generation so avoiding residual costs is still relatively small in the domestic sector.

Ofgem should also take into account the reduction in greenhouse gas emissions and improved security of supply that would result from increasing usage rates rather than standing charges, as set out in sections 10 and 11 of this paper. This is required by Ofgem's principal objective and its statutory principal duty to protect the interests of existing and future consumers, including their interests in the reduction of greenhouse gas emissions (see paragraph 62).

Distributional and Wider System Impacts of reform to Residual Charges" November 2018 Frontier Economics/LCP p.7.

[149] *The Targeted Charging Review: minded to decision and draft impact assessment Annex 1 – Targeted Charging Review (TCR) Principles* November 2018 Ofgem paragraph 1.5.

[150] *The Targeted Charging Review: minded to decision and draft impact assessment* November 2018 Ofgem paragraph 2.11.

[151] See data workbook at http://fes.nationalgrid.com/fes-document/ Table 3.6 'Community renewables' scenario.

Annex 5: How households' own-price elasticity of demand for energy varies with their income level and energy consumption

Price elasticity of demand for energy varies according to households' income and consumption (which are closely correlated, as demonstrated in paragraph 31 above). It is higher for lower income / consumption households, as Ofgem noted in describing analysis undertaken by the Department for Business, Energy and Industrial Strategy (BEIS) of gas price elasticities:

"BEIS noted the lack of established research on differences between income groups but concluded that 'initial indications suggest that lower income groups possess higher price elasticities and are more sensitive to changes in price compared to higher income groups'."[152]

This may be explained by the effect of energy spending on consumers' budgets. It forms a higher proportion of the budget of lower income households so a variation in the price of energy will have a greater effect on their budgets and hence on how affordable energy is.

Similarly, the Institute for Fiscal Studies estimated the change in energy consumption that would have resulted from the imposition of VAT on domestic energy at 15 per cent for each income decile. The results and the implied own-price elasticities were:-

TABLE 4
Own-price elasticity of demand for energy by income decile

Decile	Change in fuel consumption (%)	Implied own-price elasticity
Lowest	–9.61	–0.64
2	–9.50	–0.63
3	–8.26	–0.55
4	–6.83	–0.46
5	–4.84	–0.32
6	–4.11	–0.27
7	–3.43	–0.23
8	–1.97	–0.13
9	–0.06	–0.00
Highest	1.09	0.07
Average	–4.12	–0.27

Source: Johnson, P., McKay, S. and Smith, S. (1990), *The Distributional Consequences of Environmental Taxes*, Institute for Fiscal Studies pp. 8-16.

Another study when VAT was first introduced on domestic fuel suggested that a VAT rate of 17.5 per cent would reduce energy consumption among the poorest fifth of households by around 9.2 per cent, compared with a reduction of just 1.1 per cent among the richest fifth of households.[153]

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[152] *State of the energy market report* (October 2017) Ofgem p.73. The BEIS report referred to is National Energy Efficiency Data Framework (NEED) report summary of analysis *Annex D Gas price elasticities* (June 2016) DECC p.10. (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/532539/Annex_D_Gas_price_elasticities.pdf)

[153] Crawford, I., Smith, S. and Webb, S. (1993), *VAT on Domestic Energy*, Institute for Fiscal Studies, Commentary no. 39.

Similarly, the price elasticity of demand for energy has been observed to decrease generally with the level of expenditure on a group of commodities including fuel, as shown in Table 5. This, too, suggests that the demand for energy of low income households (who consume less energy than high income households) is more price responsive.

TABLE 5
Own-price elasticity of demand for energy according to level of expenditure on energy (and other commodities)

Total expenditure*	Own-price elasticity (with standard error in parentheses)
low 5 per cent	–0.680 (0.020)
6–10 per cent	–0.641 (0.034)
11–25 per cent	–0.599 (0.027)
middle 50 per cent	–0.486 (0.026)
76–90 per cent	–0.369 (0.082)
top 10 per cent	–0.425 (0.159)
all	–0.479 (0.025)

* 'Total expenditure' is expenditure on food, clothing, services, fuel (household energy), alcohol, transport and other non-durables. Data are drawn from the annual British Family Expenditure Survey (FES) 1970–84.

Source: Blundell, R.W., Pashardes, P., and Weber, G. (1993), 'What do we Learn About Consumer Demand Patterns from Micro Data?', *The American Economic Review* vol. 83, no.3, pp. 570-97. Table 3 Part D p.582.