IDEAL ECONOMICS

The high level of standing charges in the energy price cap

by

David Osmon

David Osmon is a former Senior Economist at Ofgem

February 2022

Ideal Economics

2nd Floor
32-33 Gosfield Street
Fitzrovia
London W1W 6HL
Info@IdealEconomics.com
Tel. 020 8969 5995

Contents

Abbreviations used in this paper:-

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

CMA: Competition and Markets Authority.

PPM: Pre-payment meter.

SME: Small and medium-sized enterprise.

SVT: Standard variable tariff (a.k.a. default tariff).

VAT: Value added tax.

The excessive new level of the standing charge

1. Energy bills consist of a fixed ('standing') charge per day and a price per unit of energy consumed. The standing charge will go up by £75 p.a. in the new price cap from April (see the table below). This means that households will now have to pay £265 p.a. (£252 p.a. plus VAT) before they can consume any energy. For any households whose finances are too precarious to be able to commit to direct debit payments so pay by cash or cheque the annual standing charge is £304 (£289 plus VAT).

TABLE 1
The annual standing charge in the energy price cap

£	Gas	Electricity[a,b]	Total
Payment by direct debit			
Oct. 2021 – March 2022	90.81	86.48	177.29
April 2022 – Oct. 2022	94.62	157.60	252.22
Payment by standard credit			
Oct. 2021 – March 2022	107.01	102.53	209.54
April 2022 – Oct. 2022	111.35	177.83	289.18

Source: Ofgem - level of the default tariff cap for Nil kWh (excl. VAT)[1]
Notes:
[a] Customers with single rate metering arrangement (cf. multi-register metering arrangement).
[b] Average of 14 electricity distribution network areas.

In fact it's even more than that in some places as it varies by region. It's highest in the south west, at £328 p.a. (including VAT), and lowest in London, at £253 p.a. (including VAT).

[1] https://www.ofgem.gov.uk/publications/default-tariff-cap-level-1-october-2021-31-march-2022; https://www.ofgem.gov.uk/publications/default-tariff-cap-level-1-april-2022-30-september-2022

The importance of reducing the standing charge

2. Low income households, who make up a disproportionate number of the customers on the default tariffs[2] covered by the cap[3], are the worst affected by increases in the standing charge. They use less energy[4] so the standing charge forms a higher proportion of their bills. Thus those in the lowest income decile (the poorest 10%) spend an average of £931 on gas and electricity every year[5] but even if they can pay by direct debit the first £265 of that will go on the standing charge. That's nearly 30% of their bill and they will only get £666 worth of gas and electricity. The standing charge means that overall the poorest pay most per unit of energy.

3. The standing charge also means that energy becomes cheaper per unit the more is consumed, which increases demand for it, resulting in higher carbon emissions and greater costs of maintaining security of supply.

---

[2] 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 or standard variable tariff (SVT).

[3] The domestic customer survey carried out by the Competition and Markets Authority (CMA) during its Energy Market Investigation found that 75% of low income consumers (those earning below £18,000 p.a.) were on default tariffs compared with 68% for all respondents. (*Energy Market Investigation Final report* June 2016 CMA paragraph 9.14.) Ofgem's consumer survey also found that low income (below £16,000 p.a.), disadvantaged and financially struggling consumers were most likely to be on default tariffs. (*Consumer engagement in the energy market since the Retail Market Review - 2016 Survey Findings (Report prepared for Ofgem)* August 2016 Ofgem 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.)

[4] Spending on energy bills increases with income:-

Table 2
Average weekly household expenditure by gross income decile group (UK, financial year ending 2020)

£	Lowest ten per cent	Fifth decile group	Highest ten per cent
Electricity, gas and other fuels	18.90	23.00	32.00
Electricity	10.10	11.60	16.10
Gas	7.80	10.10	13.70
Other fuels	0.90	1.30	2.30

Source: ONS, Family Spending (Released March 2021) Table A6.

Once households' spending on energy bills is adjusted for the high cost of the standing charge and default tariffs in the period reported in the table (see paragraphs 6 and 11 and Annex 1) it is apparent that energy *consumption* of low income households is even lower relative to high income households than energy *spending* is.
Indeed 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.)

[5] Weekly expenditure on electricity and gas (£17.90, from Table 2 above) multiplied by 52.

Ofgem's perverse predilection for increasing the standing charge

4. For some reason the price cap Ofgem introduced in 2019 lowered only the unit rate, leaving the standing charge unaltered.[6] The price cap thus conferred the biggest savings on the high income consumers who use most energy.[7] Setting the price cap like this also increased emissions and reduced energy security. Ofgem thereby disregarded its principal objective to protect the interests of existing and future consumers, including their interests in the reduction of greenhouse gases and in security of supply[8], and it attempted to downplay these effects. (This is evidenced in Annex 1.)

5. Structuring the price cap in this way heightened suppliers' exposure to the increases in wholesale energy prices that caused them to lose money serving customers protected by the cap. Perhaps more significant though is how the price cap may have contributed to the energy crisis by perpetuating a flawed business model.

6. When the price cap was introduced the dual fuel (i.e. gas and electricity) standing charge was already over £100 more than the efficient level of the standing charge (i.e. the costs suppliers incurred in serving a customer as opposed to the costs of the energy they supplied). (This is explained in Annex 2.)

7. It's quite possible that a number of the firms that failed in recent months had entered the market more focused on acquiring customers in order to capture the 'rent' of standing charges than on managing their energy costs effectively. For example, Citizens Advice has described how many failed suppliers amassed customers very quickly by offering deals that didn't cover their costs and hadn't bought enough energy in advance.[9] Certainly the biggest company to collapse, Bulb, with 1.7 million customers, was brought down by its high levels of debt, having expanded too fast.

8. Almost all of the increase in standing charges from April (£68) is accounted for by the costs of paying suppliers to take on the customers of failed suppliers.[10] This is unlikely to be the final such payment. Recovering these costs through the standing charge rather than the unit rate means that the price cap, which was intended to save some

---

[6] Ofgem set the standing charge in the default tariff cap at the current average level of the standing charge in SVTs, at £175 p.a., during the first cap period in 2019. (Decision – *Default tariff cap – Overview document* November 2018 Ofgem paragraph 2.94.) 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 (op cit paragraph 2.96.) 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 Annex 2), 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 were then pricing at below cost the part of energy tariffs which consumers cannot avoid paying.

[7] Ofgem acknowledged that the default tariff cap provided the smallest savings to low income households: *Default Tariff Cap: Policy Consultation Appendix 14 – Initial View on Impact Assessment* May 2018 Ofgem paragraphs 4.70-4.71.

[8] *Our Strategy* 2014 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.

[9] *Market Meltdown How regulatory failures landed us with a multi-billion pound bill* Citizens Advice January 2022 p.3.

[10] Recovery of the costs of the Supplier of Last Resort levy.

households something like £100 p.a.[11], has contributed to all consumers paying a similar amount, with the low income households who most needed protection by the price cap the worst affected.

9. Ofgem choosing to load up the standing charge rather than the unit rate has been a consistent and deliberate policy. It has also decided that 'residual' electricity network charges (those not driven by either the amount of electricity consumed or the number of users), which were previously recovered through the unit rate, will be recovered through a substantial fixed charge for all consumers. This decision was ill-conceived and appears highly contrived, for reasons set out in Annex 4. Ofgem has acknowledged that it will increase bills for low income households and it will inevitably also increase carbon emissions and reduce security of supply.

[11] Ofgem estimated the detriment from excessive default tariffs to the 14 million domestic (i.e. household) customers then on them at £1.5 billion p.a.. (*Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 1.11.) The CMA had estimated the detriment to customers of the Big Six energy suppliers conservatively at £1.4 billion p.a. (*Energy Markets Investigation Final report* June 2016 CMA paragraphs 10.125-10.126.)

The solution – a cap on (just) the standing charge in all tariffs

10. In contrast to what Ofgem has been doing it may be that capping just the standing charge in all tariffs is the only way to make the market work well.

11. The Competition and Markets Authority (CMA)'s Energy Market Investigation in 2016 ascribed the excessive level of default tariffs to suppliers' market power over inactive consumers who failed to engage in the market effectively and identify suppliers offering lower prices.[12] A feature of the market giving rise to this was their difficulty comparing tariffs[13], which was said to be made worse by tariffs having standing charges as well as unit rates[14].

12. In fact Ofgem had earlier (in 2012) proposed fixing the standing charge in all tariffs. It said "this should make it easy for consumers to understand their tariff options and select the cheapest standard tariff".[15] In the event, however, Ofgem decided not to because of opposition from respondents to its consultation, presumably suppliers.[16]

13. Actually it didn't need to *fix* the standing charge, just to cap it tightly, at the level of efficient costs, and it may be that doing this for all tariffs is the only way to make the market work well.[17] This would have five powerful beneficial effects:-

    - Low income households would save most.

    - 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 (those that relate to the number of customers served) can be estimated much more accurately and transparently than suppliers' other costs. (See Annex 2.) Ofgem opting to reduce the unit rate rather than the standing charge had been all the more surprising given the difficulty of quantifying the many costs of suppliers that vary with the amount of energy supplied, which were to be recovered through the unit rate. This led Ofgem to set the price cap above the estimated cost level, reducing the savings to each consumer by approx. £39 p.a. (incl. VAT).[18]

---

[12] *Energy Market Investigation Final report* June 2016 CMA paragraph 9.562 and paragraphs 158, 160 of the Summary.
[13] *Energy Market Investigation Final report* June 2016 CMA 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. (*Consumer engagement in the energy market since the Retail Market Review - 2016 Survey Findings (Report prepared for Ofgem)* August 2016 Ofgem
[14] *Energy Market Investigation Final report* June 2016 CMA paragraphs 9.563(b)(i), 9.165.
[15] *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem paragraph 2.27.
[16] *The Retail Market Review – Updated domestic proposals* (October 2012) Ofgem. Paragraph 3.11.
[17] A cap on the standing charge would need to 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.
[18] 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:-

- 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.

- It would boost competition as consumers would only need to consider unit rates to find the cheapest option. This would lead to lower bills for consumers generally and could avoid the need for the more extensive cap on default tariffs.

- It would lead to stability in the market as suppliers, who would no longer be trying to capture the rent of standing charges, would have no incentive other than to provide sustainable energy deals.

14. The standing charge is also the element of energy bills for which there is the strongest argument for price regulation on economic efficiency grounds. This is explained further in Annex 5.

15. Capping the standing charge in energy bills to businesses would be similarly beneficial, given that SMEs were found by the CMA to suffer detriment from excessive tariffs too.[19]

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

- 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.
- 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).
- 'Headroom' of £10 p.a.: 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.

Together, these measures increased the level of the default tariff cap and reduced savings for consumers by approx. £39 p.a. (incl. VAT) across all customers. (For derivation of these numbers see footnote references in paragraph 23 of *The Case for a cap on the standing charge in energy bills* June 2019 IdealEconomics.com.)

[19] Detriment to SME customers was estimated at £220 million p.a., of which £180 million related to micro-businesses. (*Energy Market Investigation Final report* June 2016 CMA paragraph 283 of the Summary.)

Annex 1: The effect of the default tariff cap on carbon emissions and security of supply

It is a frequent misconception that, as a necessity, consumption of energy is largely unaffected by its price. The CMA cited[20] a study[21] 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[22] 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".

Ofgem's principal objective 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[23]. However, Ofgem's consultation and 'Initial View on Impact Assessment' for the default tariff cap in May 2018 did not even mention greenhouse gas emissions or security of supply, let alone seek to attempt to reduce emissions or improve security of supply[24]. Ofgem also downplayed the likely effect on consumption (which would determine emissions and security of supply)[25]. Guidance on conducting impact assessments is very clear that the effect on total energy use and greenhouse gas emissions should be quantified and costed[26].

Greenhouse gas emissions

Ofgem's final impact assessment in November 2018 estimated that the default tariff cap would increase total UK domestic greenhouse gas emissions by between -0.01% and 0.40% with a value of £0.28 million p.a. to £17 million p.a. based on the price of carbon[27]. However, it 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:-

---

[20] *Energy Market Investigation Final report* June 2016 CMA paragraph 8.9.
[21] 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)
[22] Gillingham, K, Newell, R and Palmer, K (2009), *Energy efficiency economics and policy*, Resources for the Future Discussion Paper 09-13
[23] *Our Strategy* 2014 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.
[24] 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.
[25] 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 opening paragraph of this Annex) or those cited in Annex 5 of this document.
[26] The Green Book Central Government Guidance on Appraisal and Evaluation 2018 HM Treasury p.69.
[27] *Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraphs 7.54 - 7.57.

- For gas Ofgem referred to a review of price elasticities carried out for BEIS[28].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.[29]

- 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 (see first paragraph of this annex). Ofgem's September 2018 consultation had adopted -0.35 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 studies.[30]

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

- Ofgem said the lowest figures (which are applicable only in the short run) were the most appropriate because this reflected the period the default tariff cap was expected to be in place. It said it would not expect consumers to alter their investment decisions based only on their knowledge of the temporary cap.[31] This was strange as consumers' behaviour would only ever be likely to be affected by prices, not their knowledge of a price cap, which in any case they would not expect to be withdrawn if doing so would lead to an increase in prices.

- Ofgem did not include various other studies that had been brought to its attention in response to all of its consultations and which found energy price elasticities of -0.27 and -0.48.[32]

- 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 first paragraph of this annex).

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 default tariff cap brings about) than the overall bill (i.e. including the standing charge) because it is this that determines how much consumers save by foregoing consumption.

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),

---

[28] 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)
[29] *Default Tariff Cap: Statutory Consultation Appendix 11 – Draft Impact Assessment* September 2018 Ofgem paragraphs 5.84, 5.87.
[30] *Default Tariff Cap: Statutory Consultation Appendix 11 – Draft Impact Assessment* September 2018 Ofgem paragraphs 5.85, 5.88.
[31] *Default Tariff Cap: Statutory Consultation Appendix 11 – Draft Impact Assessment* September 2018 Ofgem paragraphs 5.89-5.93.
[32] *The case for a cap on the standing charge in energy bills* June 2019 David Osmon (IdealEconomics.com) Annex 5.

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..

Ofgem did not conduct a full environmental impact assessment and said that conducting one would be "disproportionate"[33]. However, it is clear that its cap may have had a very significant impact on greenhouse gas emissions.

Security of supply

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.

However, the impact assessment that formed part of its decision document said that a respondent to its statutory consultation had raised a concern that there could be an impact on security of supply.[34] Ofgem duly acknowledged that there was "a limited risk of an increase in energy consumption affecting security of supply over the potential period of the cap" based on the potential increase in consumption being relatively small; the existing spare capacity in the supply of gas and electricity; and demand for gas and electricity decreasing over recent years and being expected to continue to fall.[35]

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

[33] *Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 7.53.
[34] *Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 7.59.
[35] *Default Tariff Cap: Decision – Appendix 11 – Final impact assessment* November 2018 Ofgem paragraph 7.65.

Annex 2: The efficient level of the standing charge

The efficient level of 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.

It is shown below that prior to the introduction of the default tariff cap the average dual fuel standing charges levied by suppliers in default tariffs for non-pre-payment meter (PPM) customers of £164 p.a.[36] was over £100 more than the efficient level of costs appropriately recovered through it of £60 p.a. (incl. VAT). Since then, and before the sharp increase in the standing charge in the price cap from April 2022, standing charges have risen significantly (see paragraph 1) so £100 substantially under-estimates the current mark-up.

Cost elements of the standing charge

In 2012 Ofgem considered which cost elements might be included in a fixed standing charge as part of its Retail Market Review reforms aimed at simplifying tariffs[37]. 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[38]. It estimated those costs that might be included under the widest definition of the standing charge[39] as shown in the following table[40]:-

TABLE 3
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) [m]	✓	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

[36] *Statutory Consultation – Default tariff cap – Overview document* September 2018 Ofgem paragraph 2.76.
[37] *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem (https://www.ofgem.gov.uk/publications-and-updates/standardised-element-standard-tariffs-under-retail-market-review).
[38] *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem Appendix 1 paragraph 1.2.
[39] *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem paragraph 2.10 p.10.
[40] *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem table 2.1, p.11.

[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 20 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 varied with the amount of energy consumed. Just a small element of electricity distribution costs were to be included in the standing charge[41].

The CMA's Energy Market Investigation 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"[42]. It said that the network charging statements of the network companies defined 'use of system' charges to be nil at nil consumption[43].

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.

Ofgem has confirmed that the costs that suppliers incur under three of these four schemes (ECO, FITs and RO) as well as for Contracts for Difference, the Capacity Market and AAHEDC[44] 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. It said that it would expect to design the default tariff cap to reflect this.[45]

The WHD was the exception. However, it is 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.

In addition, smaller suppliers are exempt from the costs of three of the four policies (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

---

[41] *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem Appendix 1 paragraphs 1.7-1.11.
[42] *Energy Market Investigation Final report* June 2016 CMA footnote 59 p.962.
[43] *Energy Market Investigation Final report* June 2016 CMA paragraph 14.144.
[44] Assistance for Areas with High Electricity Distribution Costs
[45] *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.

suppliers to recover their higher than average fixed costs.[46] 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 providing domestic gas meters is regulated by a price cap, which was set at £15.93 p.a. for 2017-18[47]. 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[48].

Suppliers also need to pay for the smart meter rollout. The cost of this was estimated at £1.50 per customer per year[49].

iv) Other fixed costs

Ofgem calculated these simply by subtracting the above costs from the typical standing charge levied by suppliers[50]. Given the lack of constraint on the amounts suppliers levy as standing charges 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 and bad debt and costs associated with depreciation and amortisation[51]. 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[52].

Ofgem said suppliers earn a margin on their sales of energy too[53]. 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.

---

[46] *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem Appendix 1 paragraph 1.36.
[47] *Metering charges from 1 April 2017* National Grid p.6. (http://www2.nationalgrid.com/UK/Services/Metering/Publications/Metering-Charges/).
[48] *Energy Market Investigation Final report* June 2016 CMA paragraph 14.122.
[49] *Energy Market Investigation Final report* June 2016 CMA paragraph 14.238.
[50] *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem Appendix 1 paragraph 1.47.
[51] *Retail Energy Markets in 2016* Ofgem p.31.
[52] *Energy Market Investigation Final report* June 2016 CMA paragraph 14.119 and paragraph 3 of Appendix 9.8.
[53] *Retail Energy Markets in 2016* Ofgem p.31.

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

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 prior to the imposition of the default tariff cap was of the order of £50-60 (say £60 including VAT). This was over £100 less than the average dual fuel standing charges levied by suppliers in default tariffs for non-PPM customers of £164 p.a.[54] .

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

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)[55]

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[56].

Feed-in tariffs (FITs)[57]

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)[58].

The Warm Home Discount (WHD)[59]

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.[60] 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.[61]

Renewables Obligation (RO)

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

---

[55] *Energy Market Investigation Final report* June 2016 CMA paragraphs 3, 6-20 of Appendix 8.1.
[56] *Energy Market Investigation Final report* June 2016 CMA paragraphs 11-14 of Appendix 8.1.
[57] *Energy Market Investigation Final report* June 2016 CMA paragraphs 3, 21-23, 26-28 of Appendix 8.1.
[58] *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.
[59] *Energy Market Investigation Final report* June 2016 CMA paragraphs 3, 24-27, 29 of Appendix 8.1 of and *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem paragraphs 1.31-1.36.
[60] 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. (*Energy Market Investigation Final report* June 2016 CMA paragraph 2.108).
[61] *The Standardised Element of Standard Tariffs under the Retail Market Review* (February 2012) Ofgem paragraphs 1.34-1.35.

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

Following a major review of electricity network charges[62] Ofgem is replacing some usage related charges (i.e. charges related to the amount of energy supplied)[63] with a substantial fixed charge per consumer. This policy is ill-conceived, appears highly contrived and will increase bills for low income households and carbon emissions.

Ofgem distinguished 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, have previously been recovered from suppliers by a usage-related charge, like the forward looking costs. However, 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) have been able to avoid paying them while still being able to make use of the network as and when they wished to. Such reductions in usage do not cause any reductions in residual costs so other users have ended up paying more. This problem was expected to grow as the amount of such distributed (or 'behind the meter') generation increased.

Seemingly following a principle articulated by the Secretary of State for Business, Energy and Industrial Strategy that there should be no 'free riders'[64], Ofgem has decided that these costs should instead be recovered through a fixed charge per customer.

However, this will have various adverse effects and, notwithstanding the basic rationale outlined above, this policy is ill-conceived. Moreover Ofgem's impact assessment justifying this decision appears opaque and contrived:-

1. The decision and impact assessment document[65] did not quantify the adverse effect of electricity consumers with their own generation avoiding paying the residual costs, which was the justification given for the new policy. In fact only a very small proportion of users have their own generation, and this typically reduces their consumption by only a fraction, so it is difficult to understand the justification for such a significant change in policy.

2. The decision and impact assessment document described the resulting fixed charge per customer on an "illustrative" basis as £67 p.a.[66] but it also stated that residual charges

---

[62] *The Targeted Charging Review: minded to decision and draft impact assessment* Ofgem November 2018.
[63] These 'residual' charges are currently 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.
[64] 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'.
[65] *Targeted charging review: decision and impact assessment* November 2019 Ofgem.
[66] *Targeted charging review: decision and impact assessment* November 2019 Ofgem p.70.

amounted to around £4 billion p.a., 10-15% of a typical user's electricity bill, in which case the amount per customer is liable to be significantly more.[67]

3. Ofgem acknowledged that this policy will increase bills for households that use least electricity. [68] As pointed out in paragraph 2 above these tend to be low income households. Indeed a paper published by Grid Edge Policy[69] had highlighted that consumers who use less than the average amount of electricity (low income households) would pay more while those on high incomes would pay less, in some cases significantly less.

   However, Ofgem disingenuously attempted to argue that recovering residual charges through a fixed charge would not in general adversely affect vulnerable consumers as these were found at all levels of consumption[70]. While it is true that even the highest consuming households are liable to include some vulnerable consumers there will undoubtedly be fewer than among those who consume less given the very clear link between levels of consumption and income (see paragraph 2) and the fact that income is a key determinant of vulnerability.[71]

4. Ofgem's decision to recover residual charges through a fixed charge rather than a volume-related charge appeared highly contrived in other ways, too. For example, it asserted that "there was a strong theoretical basis for fixed charges, as they cannot be easily avoided other than by disconnecting from the grid"[72]. That is not a 'theoretical basis'.

5. Levying an increased fixed charge and reducing the unit rate will inevitably increase carbon emissions and reduce security of supply, although Ofgem did not acknowledge this or even provide any assessment of this issue[73]. This echoed its reluctance to

---

[67] *Targeted charging review: decision and impact assessment* November 2019 Ofgem p.31.
[68] "Those who use least electricity [will] see an increase in their residual charge. Those who use the most will see a decrease." (*Targeted charging review: decision and impact assessment* November 2019 Ofgem pp. 68, 71.) "We recognise that charges for some low-using consumers will be higher than they are today – around £24 for our illustrative low user, while for others they will fall further – around £40 for our high user." (Op cit p.73)
[69] *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.
[70] *Targeted charging review: decision and impact assessment* November 2019 Ofgem p.10. Similarly, it said:-
- "People move in and out of vulnerability over time and also move location, which makes it difficult to link network charges to vulnerability." (op cit, p.66.)
- "While there is some correlation between vulnerability / affluence and energy usage, there are significant numbers of vulnerable consumers across usage levels" (op cit p.69).
- "If we were to adopt an option which reduced charges for those who use less electricity, this would result in an increase for those who use the most electricity, a significant number of whom will also be vulnerable." (Op cit p.69).

[71] Ofgem's definition of consumer vulnerability is "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." (*Consumer Vulnerability Strategy* (2013) Ofgem, paragraph 3.4)

Low income may be likely to underlie both these conditions.
[72] *Targeted charging review: decision and impact assessment* November 2019 Ofgem p.34.
[73] Ofgem merely stated "The modelling we have undertaken suggests that overall the combined impact of the TCR changes will reduce carbon emissions compared with no reforms." (*Targeted*

address this issue in consultations and impact assessments for the default tariff cap and was in contravention of its principal objective to protect the interests of existing and future consumers, including their interests in the reduction of greenhouse gas emissions and in security of supply (see Annex 1).

6. Ofgem did not correctly consider the alternative charging options in terms of a general framework of the optimal, economically efficient outcome, namely that of competition, in which prices reflect costs.[74]

   In a competitive outcome prices would equal the marginal (i.e. 'forward looking') costs but they wouldn't recover the fixed (i.e. 'residual') costs. The large fixed costs of the electricity network mean it 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. This minimises the distortion of consumption patterns relative to those that would occur under competition by adding mark-ups to cover the fixed costs that 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.

   Ofgem did refer to 'Ramsey pricing' as the guiding principle for the economically efficient recovery of the residual costs in an annex to its decision paper. However, it mistakenly took this to mean that residual charges should be recovered more from fixed charges than volume-related charges because the former were less price elastic than the latter.[75] (Price elasticity refers to the price sensitivity of consumers, not whether the charges could be avoided!)

   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 much greater distortion.

Incidentally, some of the costs Ofgem 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"[76] (whereas forward-looking charges reflect short-term circumstances). This means projected reductions in usage incentivised by higher usage charges *will* lead to lower residual costs as less investment in the network will be called for. Thus, for example,

---

charging review: decision and impact assessment November 2019 Ofgem p.15.) However, it provided no evidence in this document to support this and it did not compare the effects of increasing the standing charge relative to the effects of increasing the unit rate.

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

[75] *Targeted charging review: decision and impact assessment* November 2019 Ofgem Annex 3 – Academic research and international comparisons pp. 3-4.

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

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.[77] 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[78] 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 remains small in the domestic sector.

[77] *The Targeted Charging Review: minded to decision and draft impact assessment* November 2018 Ofgem paragraph 2.11.
[78] See data workbook at http://fes.nationalgrid.com/fes-document/ Table 3.6 'Community renewables' scenario.

Annex 5: The economic rationale for regulating the standing charge

The standing charge is the element of energy bills for which there is the strongest argument for price regulation on economic efficiency[79] 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.

It is clear that the standing charges suppliers levy are substantially greater than the costs of serving customers (see paragraph 1 and Annex 1).

As set out earlier (see paragraph 11), suppliers' default tariff prices reflect the exploitation of their market power[80] 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).

Price elasticity of demand for energy varies according to households' income and consumption (which are closely correlated, as described in paragraph 2). It is higher for lower income / consumption households, as evidence presented below 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.

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.

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

Price elasticity of demand for energy 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:

[79] 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.

[80] 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.

"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'."[81]

Similar results were found by the Institute for Fiscal Studies, which 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.[82]

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)

[81] *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)

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

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.