Appendix – specific comments on Ofgem's consultation

Contingency arrangements

1. Ofgem is consulting on how it proposes to update the non-pass-through SMNCC in the default tariff cap (DTC). The timing of this review is based on the premise that it is now possible to set a cap with a level of certainty that was not previously available. This premise is evidenced by Ofgem's intent to review the allowance when the "picture was clearer"[1] and, as such, that Ofgem will "place a very high bar on reviewing the allowances proposed in this consultation"[2] in future. However, this premise is flawed.

    a. BEIS is currently consulting on a number of proposals to help inform the policy framework for energy suppliers to continue installing smart meters after 31 December 2020, when the current rollout duty ends. Given BEIS's process is only at a consultation stage, there is no certainty about the future framework. Nor will there be until BEIS has made its decisions and the time for legal challenge to them has passed. These decisions that BEIS will make will have a significant impact on the SMNCC allowance. This impact will be both through the rollout profile that is applied and the future costs and benefits assumptions that are made. Therefore to describe this as a period where the picture is "clear" is entirely misplaced.

    b. There are a number of faults in the individual cost and benefit estimations. Ofgem often simply adopts assumptions that have been made by BEIS in its CBA, where these are not based on recognised evidence and have never been subject to proper consultation. We set out in our response a number of instances where the assumptions that have been adopted are not realistic and will not produce a fair basis for making the assessment of SMNCC.

    c. Ofgem has evidently rushed out its proposals to meet the deadline for consultation ahead of the next tariff cap price change. This can be seen from the number of errors that have been found from a basic quality assurance (QA) review of the SMNCC model. Ofgem needs to take the time to undertake a more rigorous review process in line with best practice.

    d. There is still no allowance in any of the price caps to cover non-pass-through SMNCC costs of prepayment customers. Ofgem, however, has stated that it is "important that suppliers demonstrate that all customers are able to access the benefits that a smart meter can bring and that no customer groups are being left behind"[3]. Even though we continue to install prepayment meters and incur costs, for this to be viable, we need the price cap to cover these costs. We note that Ofgem has chosen not to address this issue now and instead it proposes to review prepayment meter costs "next year"[4]. The important linkages between credit and prepayment meter costs provide another reason why it is more appropriate to adopt the contingency option for credit customers now, and consider them both in tandem next year. We therefore urge Ofgem to start the process of data collection for the prepayment meter cost review now.

[1] Ofgem (2019) 'Consultation: Reviewing smart metering costs in the default tariff cap' p6.
[2] Ofgem (2019) 'Consultation: Reviewing smart metering costs in the default tariff cap' para 2.5, p19.
[3] Ofgem (2019), 'Statutory Consultation on the Post-2020 Smart Meter Rollout Reporting Requirements', p. 4, para. 2.2.
[4] Ofgem (2019) 'Consultation: Reviewing smart metering costs in the default tariff cap', p. 33, para 3.21.

2. We believe that significant revisions are needed to Ofgem's proposals and these cannot be undertaken with an acceptable level of certainty until the policy framework has been settled, given the linkage between the two. We therefore consider that Ofgem will need to implement contingency arrangements.

Relationship between the DTC and the policy framework

3. It is not possible to consider the appropriate level of the DTC without understanding the policy framework that suppliers must meet. Any obligation will need to be interpreted in the light of the allowance made under the cap as it cannot possibly be reasonable for suppliers to incur costs greater than allowed under the DTC. Despite this, Ofgem doesn't appear to have given any consideration to the policy change that BEIS is consulting on that will see the "all reasonable steps" (ARS) qualified obligation replaced by one which will impose an absolute target on all suppliers. This is an important omission, particularly given that Ofgem's consultation is about fixing the level of the SMNCC out to 2023, assuming that the cap is not removed before then.

4. Ofgem sets out the challenge it faces in only setting a single cap for all suppliers. It also recognises that the level of efficient costs may differ between suppliers for reasons that are entirely outside of their control.[5] What Ofgem doesn't go on to do is recognise the impact that the change in policy will have on its methodology.

5. As long as there is an ARS framework, the implication would be that the rollout achieved by suppliers with higher than average efficient costs will be lower than for the suppliers with average or lower efficient costs. It is this flexibility that allows the two regimes to co-exist.

6. However, BEIS's current proposals are for an absolute target. If BEIS sets each supplier the same final target, a supplier will only be funded for that target if:

    a. Ofgem sets the profile to be consistent with the profile that supplier is adopting (including an allowance for tolerance); and

    b. The supplier faces average efficient costs or lower.

7. Neither of these two constraints are satisfied in this case.

8. The profile that Ofgem has chosen is the one adopted by BEIS as part of its CBA on the basis that it "remains the most reliable forward projection of the pace of the rollout for suppliers collectively".[6] In the event that BEIS did adopt the proposals it is consulting on, this assumed profile would not be compatible with it. This has important legal implications set out in paragraphs 41-54 of the Legal Annex.

9. BEIS's current proposals assume that suppliers will reach a rollout of 100% by 2024, while allowing a 15% "tolerance". What Ofgem is allowing is an 86% target for gas and an 87% target for electricity. On this basis, the "tolerance" Ofgem is setting is *de minimis*. This is an important difference as it means that Ofgem will only be funding a rollout to a maximum of 86/87%, which is not in line with BEIS's policy. This illustrates why, if Ofgem and BEIS both maintain their respective proposals, Ofgem will very shortly be required to fundamentally review the SMNCC: see paragraph 51 of the Legal Annex.

10. In addition, no allowance is made to enable a supplier with above average efficient costs to meet the target. Ofgem recognises that it has deliberately chosen not to cover above

[5] Ofgem (2019) 'Consultation: Reviewing smart metering costs in the default tariff cap', p. 18, para. 2.3.
[6] Ofgem (2019) 'Consultation: Reviewing smart metering costs in the default tariff cap', p. 72, para 3.180

average efficient costs. It provides some examples of what these might be in the consultation.[7] However, one additional cost that it still does not seem to accept is the additional cost associated with undertaking a rollout faster than average. In our previous response[8] we referred to this as the Net Cost Error. This was an incorrect assumption on Ofgem's part that there is no ongoing net cost to a smart meter (compared with a traditional meter).

11. In our experience, the ongoing net costs exceed the benefits. Under these circumstances, there is no expectation that the differences will simply "net out". Instead having more smart meters in operation for longer comes with a cost that will constrain the number of additional installs that can be made within any allowed budget.

12. Despite raising this issue, Ofgem is continuing to maintain that "the timing differences should net out over time." [9] The only reference that Ofgem makes to our previous submission is in a footnote that purports to explain why it has not made an assumption that there is no ongoing cost to a smart meter (compared with a traditional meter). It says:

    "The CBA, on which we base our review, is an assessment of the net and additional costs of the smart meter rollout. In this chapter we have gone through each cost and benefit category to consider the annual ongoing net cost to suppliers."[10,11]

13. We are unable to understand why this footnote provides an explanation of why Ofgem has not made an assumption that there is no ongoing cost to a smart meter (compared with a traditional meter) and so why there isn't an error in Ofgem's thinking. As part of this consultation we have been able to confirm that Ofgem's own SMNCC model demonstrates this Net Cost Error. We have illustrated this effect by changing the rollout profile in Ofgem's model and then comparing the total revenue recoverable under the cap from 2019 to 2023 inclusive. To isolate this effect using Ofgem's SMNCC model we use two roll out profiles, one front loaded and one back loaded, that start at the same point in 2017 and achieve the same meter penetration by the end of 2023. The results are shown in **Table 1**, which shows both the roll-out profiles we have adopted, and the resulting yearly average SMNCCs[12] (which we use as a proxy for suppliers' total smart costs).

[7] Ofgem (2019) 'Consultation: Reviewing smart metering costs in the default tariff cap', p. 19, para 2.3.
[8] Centrica (2019) 'Reviewing smart metering costs in the default tariff cap: Response Papers #1, #3 and #4', p. 1.
[9] Ofgem (2019) 'Consultation: Reviewing smart metering costs in the default tariff cap', p.73, para 3.183
[10] Ofgem (2019) 'Consultation: Reviewing smart metering costs in the default tariff cap', p.73, footnote 60.
[11] We note that Ofgem has inserted the footnote alongside a reference to the fact that costs will not net out over the life of the cap. We agree that this is true, and were not claiming that Ofgem considered it was, which we think that the footnote acknowledges.
[12] This calculation involves summing the SMNCC values from Cap 1 to Cap 11. Caps are weighted by 0.5 to account for their lasting half a year. The first and last caps are weighted by 0.25 to account for their lasting a quarter of a year.

Table 1 Illustrative rollout profiles and resulting SMNCC

	2017	2018	2019	2020	2021	2022	2023	Total SMNCC (£/meter)
Rollout profile for electricity meters								
Front loaded domestic rollout profile	20.0%	36.8%	53.6%	70.5%	76.1%	81.7%	87.3%	**24.35**
Front loaded non-domestic rollout profile	46.1%	58.1%	70.1%	82.1%	86.0%	90.0%	94.0%	
Back loaded domestic rollout profile	20.0%	25.6%	31.2%	36.8%	53.6%	70.5%	87.3%	**12.03**
Back loaded non-domestic profile	46.1%	50.1%	54.1%	58.1%	70.1%	82.1%	94.0%	
Rollout profile for gas meters								
Front loaded domestic rollout profile	17.8%	34.9%	52.0%	69.2%	74.9%	80.6%	86.3%	**35.82**
Front loaded non-domestic rollout profile	17.0%	34.4%	51.9%	69.3%	75.1%	80.9%	86.7%	
Back loaded domestic rollout profile	17.8%	23.5%	29.2%	34.9%	52.0%	69.2%	86.3%	**21.68**
Back loaded non-domestic profile	17.0%	22.8%	28.6%	34.4%	51.9%	69.3%	86.7%	

14. This shows that a supplier that rolls out smart meters at an initially faster rate will incur higher costs than an equivalent supplier with a back-loaded rollout profile, even though they meet the same end target. Indeed, the SMNCC for the front-loaded electricity profile is approximately double the SMNCC for the back-loaded profile. A similar error exists for gas.

15. Once the Net Cost Error assumption is relaxed, Ofgem will need to recognise that – depending on the assumed profile applied – the allowance will constrain the rollout of each supplier to a different level depending on its starting position. If Ofgem dictates a slower profile, any supplier that was going faster than it will need to slow down, given that there will be no long term "net out" of the costs associated with going faster. This is also a relevant point when we discuss our views on carry-forward.

16. We therefore request again that Ofgem adequately addresses this important issue and, if there is an error in our reasoning, makes clear what the error is.

Carry forward

17. We do not agree with the arrangements that Ofgem has proposed to retrospectively clawback allowances that have been made to date and spent efficiently as part of the rollout. We have set out our reasons for this previously.

    a. The suggestion that any difference between estimates made at different times can be interpreted as providing an "advance allowance" misunderstands how the allowance Ofgem has already determined impacts levels of efficiently incurred costs. Irrespective of how allowances have been derived, the allowances Ofgem has set feed through into current investment. Allowances that have already been invested efficiently in cap periods 1, 2 and 3 will therefore not be available to 'top up' below cost allowances in later cap periods.

    b. We also consider this proposal contradicts and undermines Ofgem's own annual milestone process. As part of this process, suppliers are required to submit 'duly justified' binding annual milestones, which are subsequently

accepted or rejected by Ofgem. Acceptance by Ofgem suggests that it agrees a supplier's milestones reflect an ambitious and efficient rollout profile (giving suppliers certainty and confidence that their approach has been accepted by Ofgem). Any 'clawback' attempt would severely undermine this process and bring to question the regulatory reporting framework of the smart mandate.

c. The implications of any "clawback" of allowances from previous price cap periods would be that future rollout plans will be underfunded. Below cost allowances would have damaging and negative effects on the smart programme, and we fail to see how this outcome would be compatible with Ofgem's statutory duties. Not only would this undermine the policy objective of the smart rollout, but it would also conflict with the Tariff Cap Act (TCA) which requires that, when Ofgem assesses the Conditions for Effective Competition, it must take smart meter rollout into account. A failure to adequately fund the smart rollout may therefore result in the cap becoming self-fulfilling. See paragraph 39(d) of the Legal Annex.

18. As we show in the previous section, it is also the case that any supplier that chose to install smart meters at a rate higher than the profile that Ofgem is now assuming will incur a cost that can no longer be recovered, given the additional costs associated with a front-loaded rollout profile.

19. This expectation of certainty is further confirmed by the fact Ofgem now implies that no *further* retrospective adjustments would be likely, given that "we would place a very high bar on reviewing the allowances proposed in this consultation, as further reviews may undermine incentives for suppliers to improve their efficiency."[13] By undermining the principle of no retrospective adjustments now, Ofgem makes it very difficult for such a statement to be credible.

20. In addition to Ofgem's proposal being unjustified and inappropriate, the Legal Annex (paragraphs 30-40) explains why the proposal also has serious legal flaws.

Review of efficient net costs

Overview

21. Given the complicated nature of the model, and incomplete access to the evidence it is based on, it is not possible for us to identify all sources of error in Ofgem's calculation of non-pass-through smart meter costs. However, we have identified many, as we set out in this Appendix. These are material and we do not believe they are taken into account "in the round" as Ofgem suggests. The result is a situation where Ofgem is setting SMNCC on the basis of a set of costs that are too low and a set of benefits that are too high for a supplier of average efficiency.

22. The recent judgement[14] shows the importance of assumptions being realistic, in order to produce a fair basis for making an assessment. Before discussing individual line items, we have some generic concerns about this process.

a. Ofgem considers individual line items to create a supplier of "average" efficiency, but there is no evidence that Ofgem has checked that the resulting SMNCC allowance meets the cost of any supplier in practice. We understand that it is not possible to undertake such analysis based on the data that has

[13] Ofgem (2019) 'Consultation: Reviewing smart metering costs in the default tariff cap', p.19, para 2.5.
[14] British Gas Trading Limited v Gas and Electricity Markets Authority [2019] EWHC 3048 (Admin).

been disclosed as part of this consultation and so our advisors have not been able to undertake this check.

b. When defining what type of "average" supplier is being covered, it is important that Ofgem is specific about the type of supplier it has in mind. In particular, it would be unreasonable that it is based on a supplier that was not in operation when the smart meter rollout was first announced, given that very different commercial decisions would be expected to be optimal once this information was known.

c. Provision of the data underlying particular assumptions has been patchy. There are important areas where Ofgem has made it hard to evaluate the basis of the assumptions used:

   i. Data is missing from the Disclosure process; and

   ii. Data has been anonymised where there was no need for anonymisation.

   Paragraphs 15-29 of the Legal Annex set out that this failure to candidly disclose relevant information precludes Ofgem's proposals from being properly scrutinised and amounts to a failure to properly consult.

23. This consultation has itself exposed a serious error in the way that Ofgem originally set the price cap. It has now been exposed that the choice of "lower quartile" efficient opex benchmark was incorrect, given differences in the treatment of IT costs that Ofgem failed to identify or account for. This error is serious and raises important questions about whether the opex allowance is itself robust. We wrote to Ofgem on a number of occasions[15] requesting that the data on which the opex benchmark was set be made available within the Disclosure Room process. It was to address errors such as the one that Ofgem now identifies that this request was made. This issue is addressed in paragraph 21 of the Legal Annex.

24. While the SMNCC consultation process has now exposed one error associated with the opex benchmark, we are concerned that further errors would be found if the data was opened up to proper scrutiny. We therefore request that Ofgem do this as soon as is practical.

25. We also do not believe that Ofgem has undertaken the adjustment to move from lower quartile to average efficiency properly. By making an adjustment for IT costs, Ofgem has adjusted for a factor that may have led its selection of the opex benchmark to have been biased by the in-year smart costs of different companies. However, it is unclear why Ofgem should control for smart IT costs in this way and yet not for other significant smart costs that may have distorted its opex benchmarking, in particular relating to PRC charges where there would be differences in:

   a. The age profile of meters that suppliers were replacing in 2017;

   b. The contractual arrangements of individual suppliers; and

[15] For example, letter from Tim Dewhurst to Anna Rossington 'Further information statutory consultation and notice of intent to open a Disclosure Room to allow review of data underlying the cap' (31 August 2018); letter from Tim Dewhurst to Anna Rossington 'Disclosure Room to allow review of data underlying the cap' (10 September 2018); letter from Tim Dewhurst to Anna Rossington 'Further information on statutory consultation and notice of intent to open a Disclosure Room to allow review of data underlying the cap' (14 September 2018).

c. Accounting approaches (indeed, Ofgem acknowledges this in the consultation[16]).

26. We would expect these differences in PRC charges to have a large impact and they must therefore be taken into account. We comment further on the inadequacies of Ofgem's approach to PRC charges below.

27. Ofgem also makes an adjustment to move from a lower quartile measure of costs to what it describes as an average efficiency standard. However, to make this adjustment Ofgem only accounts for the difference between average and lower quartile in a limited number of costs. It is not clear why Ofgem does not also adjust for the difference between lower quartile and average in other areas of net smart costs, such as legal and organisational costs and marketing costs, as these will also be reflected in the 2017 opex of suppliers. Based on the different rollout stages that suppliers were at in 2017, we would expect these differences to be material and to need adjustment.

28. In the rest of this Appendix, we discuss the errors that have been made in the individual cost and benefit assumptions. These errors add up to a material error in the overall calculation of net smart meter costs that (as set out in paragraph 54 of the Legal Annex) must be properly taken into account and addressed. We provide an estimate of the scale of some of these errors at the end of this Appendix.

29. To rectify these errors, Ofgem will need to undertake the following actions:

    a. Where there is evidence that supports an assumption that is made by Ofgem that has not been disclosed to date:
        i. Ofgem should collect that evidence from BEIS (if it has not already done so); and
        ii. enable adequate consultation on it, including through a Disclosure process if that evidence is confidential.
    b. Where there is evidence available that Ofgem has not yet collected, it must collect this data and consider it. We provided a summary of some of this evidence in our previous correspondence[17] and we also set out additional areas in this response that have come to light during this consultation process.

    c. If Ofgem believes that the effort of data collection and analysis is disproportionate to the value from improving the estimate of the cost or benefit then it must provide evidence to support this claim. We provide an example in this response of analysis that we have undertaken that Ofgem mistakenly deems to be too complex and where the impact is material.

    d. Ofgem has said it will consider the costs and benefits associated with prepayment meters next year. Given the overlaps between credit and prepayment costs and benefits, these are best considered together (rather than sequentially).

[16] "*Some suppliers are also traditional meter owners, and do not charge an internal PRC. This approach ignores the real economic cost to the different sections of the business, one of which is the supply company*" (see Ofgem (2019) 'Consultation: Reviewing smart metering costs in the default tariff cap', p.48, para. 3.77).

[17] Centrica (2018) 'Centrica's response to Ofgem's statutory consultation on the Default Tariff Cap: response on smart metering costs (and Appendix 7)'; Centrica (2019) 'Reviewing smart metering costs in the default tariff cap'; Centrica (2019) 'Additional smart meter data to collect to inform BEIS's impact assessment and why'; Centrica (2019) 'Reviewing smart metering costs in the default tariff cap: Response Paper #2 on data gathering'.

Costs

Single fuel gas installation cost

30. Ofgem understates the costs of single fuel gas installations by assuming that a single fuel gas installation and a single fuel electricity installation have the same cost. This is not correct. Single fuel gas installations cost more than equivalent electricity installations. This is because they take longer to complete for technical reasons. ✂. Ofgem needs to collect this information and then make an appropriate adjustment.

868MHz gas meters and dual band IHDs

31. Ofgem simply adopts BEIS's assumptions on the additional costs of 868MHz gas meters and dual band IHDs from the BEIS CBA which are in the model as a default. BEIS's assumptions are reproduced in the Table below.[18]

Table 2 868MHz gas meter and IHD assumptions

Component	Additional cost per device (2011 prices)
868MHz Gas meter	£2.00
868MHz IHD	£0.20

32. There is no source for where these costs assumptions have come from and they are not in line with our experience. Ofgem must collect this information and then consult on it. Our current estimate for the additional cost of an 868MHz gas meter compared to a standard smart gas meter is ✂.

SMETS1 amortisation rates

33. We are extremely surprised by Ofgem's claim that while ten-year rental agreements are most common for SMETS1 meters, the weighted average is 12 years for electricity and gas meters. ✂. We are also not aware of any agreements in excess of this period. This data was not included within the disclosure process so we have not been able to check it. Given the materiality of this assumption and our concern that Ofgem's assumption contains an error, this information must be disclosed by Ofgem.

SMETS1 enrolment profile

34. Ofgem's model assumes that 72% of SMETS1 meters will be enrolled into the DCC during 2020 (and 99% by 2021). Based on current progress and DCC programme plans, this is unlikely to be feasible. The vast majority of British Gas's meters will not begin enrolment until the end of July 2020, and it may take around a year to enrol all of them. We would therefore expect, on average over 2020, only around ✂ of our SMETS1 meters to be enrolled. Ofgem needs to reflect a more realistic profile of enrolment in its model. With the current over-optimistic enrolment profile, the model will understate the opex cost associated with operating non-DCC communications hubs.

[18] BEIS (2019) 'Smart meter roll-out: cost-benefit analysis', p. 24.

SMETS1 PRC and rental prices

35. Ofgem understates the full costs to suppliers associated with the early removal of SMETS1 meters. This is driven by an incorrect assumption about the number of SMETS1 meters that are replaced early. Ofgem assumes that 1.5% of the SMETS1 meter stock is removed in 2019 and generates a PRC. This falls to 0.2% in 2020. These estimates are far too low.

36. Until the time that SMETS1 meters are enrolled with the DCC we expect stranding of these meters to be much higher than Ofgem assumes since they are subject to PRC charges on change of supplier if the new supplier does not wish to retain the SMETS1 meter. This is often the case and is not something the losing supplier can control. DCC enrolment is spread over time depending on meter cohorts. Suppliers did not have a choice about when their meters would be enrolled. 98% of our SMETS1 meters will not commence DCC enrolment until July 2020 and British Gas is the supplier with the largest volume of SMETS1 meters in operation in the market.[19] It will still be unrealistic to assume only 0.2% of SMETS1 meters are replaced early in 2020 even if Ofgem is using a weighted average of all suppliers enrolment dates.

37. In addition, Ofgem needs to take account of the fact that the SMETS1 rental prices that are charged by MAPs on churn far exceed the rates Ofgem is assuming in its model. Indeed, the rental values that we face from MAPs on churn can be as much as three times the rental values that we would face on our own contracts. This is because MAPs are aware that they will face stranding costs should the SMETS1 meters be replaced, and therefore reflect these costs in the rental rates they charge. These higher 'deemed' rates effectively flow to the MAP and are an additional cost to suppliers. While they may not be relevant for the BEIS CBA where gains and losses made by individual market participants can be assumed to net out, they are relevant in this case where Ofgem has a duty to consider the actual costs and benefits faced by suppliers. Ofgem needs to collect data on this issue and then take the costs into account in its analysis.

SMETS1 comms hub PRC

38. Ofgem's model includes the costs of SMETS1 comms hubs. What it doesn't include is the associated PRC charge associated with these costs, even though when a SMETS1 meter is prematurely removed and replaced with a SMETS2 meter, the SMETS1 comms hub is also replaced prematurely and attracts a PRC in a similar manner to the meter asset. Instead Ofgem assumes that suppliers continue to pay rental on them, which under-estimates the charges faced within the price cap period.

Traditional meter PRC charge

39. Ofgem makes an allowance for the PRC costs that suppliers incur when removing traditional meters. To calculate this allowance, Ofgem calculates PRC charges for traditional gas and electricity meters of a given age. These are based on assumed asset and installation costs and a profile of what proportion of the initial costs have to be repaid given a meter's age. Ofgem then uses industry data on the distribution of meter ages to calculate an average stranding cost per meter replaced for each year.

40. Ofgem makes assumptions about the asset and installation costs of traditional meters. To do this it assumes that the asset and installation costs for a traditional meter are constant in real terms over time. It is not clear what the source of this assumption is, but it means that the value that Ofgem uses for the PRC calculation is significantly below the more recent

[19] Suppliers cannot control the cohort that their SMETS1 meters will enrol in. Therefore, any additional costs incurred as a result of SMETS1 meter enrolment being later must be considered efficient by Ofgem.

estimates of traditional meter asset and installation costs that Ofgem has from suppliers' ASR returns. Whilst it may be the case that older meters had costs closer to Ofgem's assumptions, more recent cohorts will be more likely to have costs that are reflective of those in suppliers' ASR returns.

41. Ofgem then cross checks its calculated PRC charges against industry data on stranding charges to confirm that the calculated PRC charges are reasonable. The calculated PRC charges are higher than the reported PRC charges for electricity and lower than the reported PRC charges for gas. However, it is not clear that the comparison that Ofgem makes between calculated charges and actual charges is appropriate.

42. When reporting the results of its cross check Ofgem notes that the actual PRC charges are higher for gas and lower for electricity than the calculated PRC charges and notes that the actual PRC charges may not be a reliable guide as a justification for using the calculated charges. However, the logic that Ofgem provides for why the actual PRC reported may not correspond with its calculated charges only explains why the actual PRC may be below the calculated PRC. Ofgem states that:

    "*Internal charges: Some suppliers are also traditional meter owners, and do not charge an internal PRC. This approach ignores the real economic cost to the different sections of the business, one of which is the supply company.*"

43. This explanation provides no explanation for why actual gas PRC charges are materially in excess of Ofgem's allowed PRC charges. To hold gas PRC charges at an artificially low level penalises those suppliers with higher gas customer penetration levels.

44. Further, suppliers that started operation or that have grown substantially after the smart meter mandate was in place will have chosen to structure their meter rental contracts differently, given their knowledge that traditional meters will be stranded by the rollout. This is a fundamentally different situation to suppliers that have been operating at scale prior to the smart meter mandate. It would be completely unfair to efficient incumbent suppliers if this was not taken into account. Further, for the same reasons that led Ofgem to base its assessment of lower quartile and average efficient operating cost estimates in 2017 on the costs of only the six largest suppliers, the same logic should apply to consideration of PRC charges.

O&M costs

45. Ofgem's assumption that the O&M costs equal 2.5% of smart meter capex is not a figure that we recognise. Ofgem has indicated that this assumption is taken from work BEIS did for its CBA and is based on the response of just three MAPs, representing only 20% of the market share for smart meters. By definition, this does not include a view from any of the largest MAPs. This unrepresentative survey is clearly not fit for purpose for the use to which Ofgem is putting this assumption. Ofgem needs to ask the MAPs itself to collect this data so that it is representative of the cost that suppliers face.

Benefits

46. We believe that the benefit assumptions are a major source of error and explain a large part of the reason why the allowance is inadequate.[20] This is because Ofgem has largely

[20] In this respect we note that the NAO also expressed concerns with the estimation of supplier benefits that have not been adequately addressed by BEIS in its CBA update (see NAO and BEIS (2018) 'Rolling out smart meters: report by the Comptroller and Auditor General', p.15).

adopted the BEIS CBA assumptions. Ofgem claims these are well evidenced and robust *because* they come from this CBA but:

a. they have never been subject to consultation; and

b. there is no access to the underlying information on which they are supposed to have been based.

47. We believe that there are issues with all the benefit estimates that Ofgem is proposing to use and they are one of the main reasons that the level of non-pass-through SMNCC will be insufficient, even for a supplier with average efficient net costs. Having the largest number of smart meters in the market, we believe that our evidence base for benefits must be considered by Ofgem. We have invited Ofgem to collect this data on a number of previous occasions.[21] Instead Ofgem continues to proceed to use a set of assumptions that are not based on experience. While we can understand the need for some "simplification, generalisation" and "approximation"[22] in analysis such as this, the benefit estimations are not fit for purpose and must be re-visited using supplier evidence. Although it may be appropriate for a CBA to be set on the basis of hypothecated benefits, it is not appropriate for a price cap to be determined in this way.

Avoided site visits

48. Ofgem adopts the BEIS assumption that meter reading frequency per year is 1.7, rather than using the actual estimate of 1.4 meter reads per year from the supplier data.[23] BEIS has adopted the higher figure of 1.7 because it believes that the traditional meter read frequency has been reduced as a result of the smart meter programme, in particular following a change to the SLC12 obligation to inspect customers' meters at least every two years. Since BEIS is trying to compare the costs and benefits generated from the smart meter programme this makes sense.

49. However, this upward adjustment from 1.4 to 1.7 is not appropriate for Ofgem's purposes as it is not trying to compare a world with and without the smart meter programme. Instead it is trying to estimate the change in net costs from a 2017 baseline. Since SLC12 was removed in February 2016, any change to the baseline would have happened prior to 2017. The reduction in meter reading costs for suppliers is therefore better estimated using the ASR data on meter reading frequency, without an adjustment for the SLC12 removal. To use a meter read frequency of 1.7 overstates the reduction in meter reading costs. Ofgem must put through this change.

Customer switching

50. Ofgem also adopts the BEIS assumption on the customer switching benefits even though it has not been subject to proper scrutiny and overstates this benefit to suppliers. The annual benefit of £0.75 per meter (in 2018 prices)[24,25] is supposedly driven by smart meters providing automated readings on change of supplier from 2017 onwards. This results in some extremely large cost savings that don't bear any relationship with the costs that suppliers expect to see.

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[21] See footnote 17.
[22] Ofgem (2019) 'Consultation: Reviewing smart metering costs in the default tariff cap', p. 19, para 2.4.
[23] BEIS (2019) 'Smart meter roll-out: cost-benefit analysis', p. 79.
[24] BEIS (2019) 'Smart meter roll-out: cost-benefit analysis', p. 43.
[25] In 2011 prices this was £0.67, using Ofgem's GDP deflator this is £0.75 in 2018 prices.

51. We do not believe it is appropriate to include any of this benefit in the SMNCC calculation. The net costs to suppliers of faster switching (as reported in Ofgem's IA[26]) already include the benefits to suppliers. Ofgem has therefore already factored in expected supplier benefits as part of the price cap through its assumption that the net costs of the faster switching programme are to be recovered via the headroom allowance.[27] To subtract them again in the SMNCC calculation would be double counting.

52. Even if this weren't the case, the industry change to utilise automated readings for electricity has not been delivered for gas. After obtaining a gas reading when its customers switch, a supplier still needs to follow industry processes to settle with the new gas supplier separately. As well as affecting any gas only switches, this also impacts *all* dual fuel switches. Since most sales are dual fuel, this largely reduces any benefit from current switching processes under the SMIP to zero.

Inbound customer calls

53. Ofgem adopts the BEIS assumption for the benefit to suppliers from reductions in inbound call contact as a result of smart meter installations. This assumption is an overstatement. Our analysis, which utilises more detailed data with more sophisticated techniques, shows that the overstatement is likely to be substantial. It is therefore unsafe for Ofgem to assume the size of benefit that it does.

54. Ofgem estimates the impact of smart meter installation on call contact volume through a simple comparison of the average call contact per customer for traditional meter customers and for smart meter customers. This approach is flawed because it is highly likely to suffer from sample selection bias.

55. The difference in call volume per customer that Ofgem observes is made up of two parts.

    a. the impact of smart meters on inbound contact; and

    b. the difference between the call propensity of the two groups of customers in the absence of smart meters.

56. Those customers that have taken a smart meter to date tend to be those that are likely to have lower contact costs even without a smart meter. By just taking the difference between the two groups, Ofgem is effectively assuming that (b) is zero.

57. We have undertaken analysis of the call volumes over time of customers that have received a smart meter. By observing the same population of customers over time we are able to eliminate this error. We have undertaken this analysis across two separate samples.[28] The analysis shows that long run call volumes fell by 18% in the first sample and only 7% in the second, following a smart meter installation. These estimates compare with Ofgem's assumption of a 60% reduction in call volumes, a significant overstatement.[29]

Debt handling

[26] Ofgem (2018) 'Delivering Faster and More Reliable Switching: decision on new switching arrangements: Impact Assessment Form'.
[27] Ofgem (2018) 'Default Tariff Cap: Decision Appendix', p. 24, para. 3.55.
[28] The first sample was of all customers that received a smart meter during calendar year 2016. The second sample was of all customers that received a smart meter in the 12 months up to and including September 2018.
[29] As a cross-check we applied Ofgem's methodology to our data and calculated the call volume drop to be 56%. This reinforces the likelihood that Ofgem's methodology is creating the overstatement.

58. BEIS identifies four debt handling benefits that can help suppliers reduce the size of their debt books. These result from:

    a. more frequent billing;

    b. earlier identification of debt build-up and faster follow-up action;

    c. reduced bad debt charges and final debt write-off; and

    d. the reduced administrative burdens of managing debt, which are enabled by the first three benefits.

59. To realise these benefits customers would need to agree to monthly billing (something that is not an expectation) and, if implemented, would require upgrades to suppliers' billing systems and increase contact costs for suppliers (particularly if customers are not signed up for paperless communications). These costs are not taken into account.

60. The ability to support these benefits also requires that remote switching of gas accounts between credit and prepayment tariffs is consistently possible. However, switching payment type remotely is not routinely possible for gas meters due to secondary meters which require a property visit to check.[30] The existence of these meters necessitates a requirement for a site visit in order to implement a payment method change due to the risk that there could be an uncontrolled gas flow in the property. This means that a significant number of payment method changes would require a site visit given the prevalence of dual fuel customers.

61. BEIS has never consulted on this benefit level and we have never been asked about the relevant associated costs for implementing the business changes required to realise these benefits. Ofgem has simply adopted the unevidenced BEIS assumptions. It needs to request and then examine supplier evidence before reviewing this benefit as the current values are not credible.

Reduced theft

62. Ofgem includes a benefit linked to smart meters reducing theft. This benefit is assumed to be generated by suppliers being able to reduce the costs of their revenue protection department due to the smart meter roll out. However, there is no evidence that any suppliers have reduced revenue protection costs linked to smart meter roll out or smart meter capability. Again, this is not something that Ofgem has attempted to evidence.

Remote change of tariff

63. Ofgem includes the cost savings associated with being able to remotely change meter tariff types. This benefit is assumed to apply to both gas and electricity meters.

64. In 2018 we only did ✂ tariff changes, none of which were remote. Even if they were undertaken remotely, the benefit estimated by Ofgem cannot be deemed to be credible. At £0.29 per smart meter (in 2018 prices)[31,32] and based on a stock of 5 million smart meters, this would generate a benefit of almost £1.5 million, translating to a supposed saving of over ✂ per remote change in tariff. This is simply nonsensical.

[30] We estimate that there are somewhere between 25,000 and 50,000 of these meters attached to normal meters.
[31] BEIS (2019) 'Smart meter roll-out: cost-benefit analysis', p. 49.
[32] In 2011 prices this was £0.26, using Ofgem's GDP deflator this is £0.29 in 2018 prices.

Reliability of the Disclosed Model as the SMNCC calculator

65. Ofgem uses the Disclosed Model to calculate the SMNCC allowance for each cap period. This makes the Disclosed Model a business critical model for the Default Tariff Cap. However, the Disclosed Model falls significantly short of best practice modelling. On reviewing the model we note the following points.

    a. A number of the check cells within the Disclosed Model show that the check is failed even when the model is producing the final results that Ofgem uses;

    b. The model has a number of very long formulae that should be split out to aid quality assurance and comprehension; and

    c. The model includes a number of mistakes which compromise the calculated results.

        i. Ofgem includes in its input assumptions consumption weights for summer and winter periods. However, for gas these weights sum to less than 100% compromising all the calculations that feed off this input assumption.

        ii. Ofgem attempts to calculate a 'carry forward' adjustment so that the difference between modelled costs for the first three cap periods and the allowed SMNCC is recovered from suppliers in subsequent cap periods. However, the total value that Ofgem's calculations recover (substantially) exceeds the amount calculated to be recovered. This seems to be driven by the formulae used to transform a total sum to be recovered into cap period adjustments being mathematically flawed.

        iii. Ofgem claims to have included PRC costs for SMETS1 meters that are replaced before the end of their life. Ofgem has made some adjustments to the underlying BEIS CBA model to detail what SMETS1 PRC costs it calculates suppliers will incur. However, not all of these adjustments actually feed into the final results. SMETS1 install costs are captured for PRCs but SMETS1 PRC relating to the cost of the assets are ignored.

        iv. To estimate SMETS1 PRC costs Ofgem uses an input asset cost assumption. This assumption changes for each year. However, Ofgem assumes that SMETS1 meter asset costs fall by 50-70% from 2019 to 2020 despite being relatively stable in previous periods

Reducing TDCV

66. Ofgem plans to reduce the TDCV to reflect falling electricity consumption values. If the TDCV used in the default tariff cap calculation is not also adjusted down, this will result in an under-recovery of efficiently incurred costs. This is because some fixed costs in the default tariff cap are recovered through the unit rate. Therefore, fixed costs in the price cap are only fully recovered if average consumption is equal to the TDCV.

67. This is an issue that applies to the SMNCC as well as the opex allowance of the price cap. For the SMNCC there are some assumed benefits that scale positively with volume such as debt management and theft reductions. However, in general, the net cost of smart meters does not scale positively with average consumption volumes. Therefore, if Ofgem does not adjust for revised TDCV, the SMNCC will on average not be fully recovered and suppliers will be further underfunded for the smart meter roll out.

Estimation of the materiality of errors

68. We have used the Disclosed Model to quantify some of the issues described above. This is a difficult exercise for a number of reasons:

    a. First, the Disclosed Model is complex. Changes made to one section of the model can have impacts elsewhere. As described above, the model falls significantly short of best practice in a number of regards, which has further affected our ability to fully audit it in the available time.

    b. Second, there are a number of areas where data is not available to us (or even to our advisors as part of the disclosed data) to substitute into the model. Where possible, we have made simple assumptions and used British Gas's own data. However, as described above, further industry-wide evidence is required in some areas. We have therefore not been able to quantify all of the errors that we have identified above.

69. The figures presented below are therefore not comprehensive. However they do clearly demonstrate the materiality of the errors identified above.

70. The table below sets out the modifications that we have made to the model. It shows the modelled SMNCC (for April – September 2020) after each adjustment has been made. The adjustments are applied cumulatively.

71. The final column shows the effect that each adjustment has on the overall dual fuel SMNCC. Note that some adjustments may interact with each other and so the size of each individual adjustment may depend on the order in which the assessment is carried out.

Table 3 Estimation of the materiality of errors

Adjustment	**2020 Apr – Sep SMNCC (following the specified adjustment and all above it)**			**Impact of adjustment on DF SMNCC**
	Elec	**Gas**	**Dual fuel**	
Original SMNCC	5.12	6.18	11.30	
Amending model mistakes	5.34	6.46	11.80	+ 0.50
Remove carry-forward	6.10	7.53	13.64	+ 1.84
Single fuel gas installation cost	6.78	8.31	15.09	+ 1.45
868Mhz gas meters	6.78	8.52	15.30	+ 0.21
SMETS1 amortisation rates	7.23	9.12	16.35	+ 1.05
SMETS1 enrolment profile	8.06	9.95	18.01	+ 1.66
SMETS1 PRC and rental prices	8.48	10.41	18.89	+ 0.88
SMETS1 comms hub PRC	8.53	10.45	18.98	+ 0.09
Traditional meter PRC charge	10.48	13.58	24.06	+ 5.08
Avoided site visits	10.78	13.88	24.66	+ 0.60
Customer switching	11.16	14.23	25.39	+ 0.73

Inbound customer calls	11.61	14.62	26.23	+ 0.84
Debt handling	12.83	15.54	28.37	+ 2.14
Reduced theft	13.10	15.74	28.84	+ 0.47
Remote change of tariff	13.25	15.87	29.12	+ 0.28

72. These are the adjustments that we have made to the model.

a. **Amending model mistakes.** We have attempted to fix the four errors described in the section "reliability of the disclosed model as the SMNCC calculator".

b. **Remove carry-forward**. We have set the carry-forward adjustment to zero.

c. **Single fuel gas installation cost**. We have increased the cost of a single-fuel gas installation to be ✂ higher than the cost of a single-fuel electricity install.

d. **868MHz gas meters**. ✂ We have not built in a similar uplift on 868MHz IHDs as it has not been clear where in the model this uplift is carried out.

e. **SMETS1 amortisation rates**. We have reduced the 12-year amortisation rate to ✂.

f. **SMETS1 enrolment profile**. We have replaced the enrolment profile used in the model with one based on British Gas's profile. The vast majority of British Gas's meters will not begin enrolment until the end of July 2020, and it may take around a year to enrol all of them. We have calculated the resulting proportion of meters enrolled, as an average, each year:

   i. 0% in 2019

   ii. 10% in 2020

   iii. 84% in 2021

   iv. 100% thereafter

g. **SMETS1 PRC and rental prices.** We have replaced the assumptions regarding the proportion of SMETS1 meters stranded each year. In the first 10 months of 2019, ✂% of British Gas's SMETS1 meters were replaced with SMETS2 meters. We have scaled this assumption down for subsequent years, based on the proportion of SMETS1 meters that are still unenrolled with the DCC (using the profiles described above). This produces the following proportion of SMETS1 meters being stranded:

   i. ✂ in 2019

   ii. ✂ in 2020

   iii. ✂ in 2021

   iv. ✂ thereafter

h. **SMETS1 comms hub PRC**. We have added in half of the (post uplift un-annuitized) cost of a SMETS1 comms hub to the cost of the meter used in the stranding calculations.

i. **Traditional meter PRC charge**. We have replaced the traditional meter asset and installation costs used in the PRC module of the model with British Gas's own costs from its 2018 ASR returns (deflated to 2011).

j. **Avoided site visits.** The site visit frequency has been reduced from 1.7 to 1.4, in line with the description above.

k. **Customer switching.** This benefit has been excluded from the calculations.

l. **Inbound customer calls.** The "subsequent year" smart cost reduction (which applies after the first year following installation) has been reduced from 60% to 18%.

m. **Debt handling.** This benefit has been excluded from the calculations.

n. **Reduced theft.** This benefit has been excluded from the calculations.

o. **Remote change of tariff.** This benefit has been excluded from the calculations.