



By email:

Anna Rossington
Deputy Director, Retail Price Regulation
Ofgem

19th November 2019

Dear Anna,

Reviewing smart metering costs in the default tariff cap

Thank you for the opportunity to respond to this important review.

Our objective remains to assist Ofgem with ensuring that the efficient costs of the smart programme are included within the cap, to underpin the sustainable delivery of the programme and related benefits to consumers. Suppliers are obliged by (Standard) Supply Licence Condition (SLC) 39 to take all reasonable steps to install smart meters to domestic premises by the end of 2020, with BEIS consulting on the post-2020 obligation. In addition it has an unqualified requirement in SLC44 to meet previously agreed milestones, irrespective of any delays caused centrally or by other factors beyond suppliers' control. It is therefore essential, as per the Electricity and Gas Acts, that the necessary investment and activities are financed, otherwise the programme is compromised. We continue to have significant concerns in this regard.

We read the Frontier report on the BEIS Cost Benefit Analysis (CBA) and noted in our response to the post 2020 obligation consultation that the model is unsafe to use without extreme caution. Since the issues such as inadequate documentation and clear bias seem unlikely to be resolvable without change to the model output, it is clearly unsafe for Ofgem to rely on it for the cap. In fact, the cap needs a much higher level of accuracy. One level of accuracy in timing is needed to know what time to close roads for a race and a higher level is required for the race results.

Fortunately, Ofgem has an inbuilt feature in its price cap planning in the form of contingency on rollout cost. It is then obvious that this contingency must be used here and the Smart Meter Net Cost Change (SMNCC) rolled forward based on the current model, to be corrected later if appropriate to do so. Ofgem has in effect proposed a Recovery mechanism. Therefore and after allowing for stranded fixed costs, if it turns out that smart costs are less than planned, or the corrected and bolstered BEIS CBA comes up with similar results, then Ofgem can make the correction in Recovery in a future price control period (subject to consultation). In fact, with Recovery introduced and clear issues with Ofgem's figures it has no proper choice other than to use the contingency for cap period four.

In summary:

- We supported the use of the Smart Meter Implementation Programme (SMIP) CBA as the starting point for updating the SMNCC and welcome that certain modifications have been made to correct previous errors.
- However, it is apparent that the CBA has not been sufficiently modified to reflect the subsequent reality in 2019 i.e. further industry delays (outside suppliers' control) and the significant increase in consumer resistance to smart metering, which increase an efficient supplier's costs.
- The evidence of increased consumer resistance is a notable omission and must be factored in.
- In particular, the assumed installation rate of 5 meters per day has inadequate substance and is otherwise flawed and should be reduced to 4 as a more realistic basis for deriving the installation costs of an efficient supplier.

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- As further work is required to ensure a robust basis for updating the SMNCC, a prudent approach would be to adopt the contingency allowance for cap period four. This would avoid compromising cost recovery and the smart programme to the detriment of consumers.
- We are concerned that Ofgem is looking to set the SMNCC for the next four years, based on an outdated CBA and when the post-2020 obligation is yet to be determined.
- We continue to strongly challenge Ofgem's assertion that there has been an advance payment. We explain below how this is fundamentally flawed, both conceptually and notwithstanding, as calculated. Consumers are not being charged twice – the reality is that central delays and insufficient consumer engagement are increasing the overall costs of the programme, which should be reflected in the SMNCC, and Ofgem has a role to play in increasing the efficiency of the SMIP

We expand on these issues in the appendices to this letter and would be happy to discuss further. Appendix 1 answers the consultation questions and Appendix 2 is a broader critique.

Yours sincerely,



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Appendix 1: npower's response to consultation questions

Chapter 2 – Methodological Considerations

Do you agree with our methodological considerations?

Whilst we agree with much of the methodological considerations in the consultation, we continue to have several fundamental concerns:

- We appreciate that Ofgem is legally bound to set a single cap under the terms of the Domestic Gas and Electricity (Tariff Cap) Act 2018 (“the Act”), but as a consequence companies with above average efficient costs will lose money and therefore have challenges financing the smart programme out of keeping with the Act.
- In addition, under the terms of the Act Ofgem is required to ensure that an efficient supplier can finance its activities. Whilst we welcome the use of the latest BEIS Cost Benefit Analysis (CBA) as a starting point for working up suppliers' costs, which is something we have supported in previous consultation responses, we believe that there has been insufficient modifications to the CBA to reflect the changes in the smart rollout programme in 2019. In particular, we believe there have been further central delays and a significant increase in consumer resistance to smart metering in 2019, and these issues will increase an efficient supplier's costs. The lack of any mention of increasing consumer resistance in the consultation is a notable omission which needs to be addressed. We comment further on this in specific sections below.
- We agree that estimation has to be an inherent feature of the analysis, and where we disagree with the estimates and assumptions we have commented under the specific cost / benefits items in our response to Chapter 3.
- We fundamentally disagree with the proposal to recover the so-called “over payment” for the first three cap periods, and in particular the argument repeated several times in Chapter 4, that funding is being provided twice for the same activity. The “over-payment” is seriously inadequate in substance and method. The twin issues of central delays and consumer resistance have resulted in extending the overall timescale of the smart rollout programme, increasing the overall costs. We comment further on this under our response to Chapter 4.
- Ofgem notes the best practice governance and assurance processes (albeit internal) followed by BEIS and the high integrity score awarded to the CBA model. However, the consultation is silent regarding any assurance activity undertaken in relation to the new SMNCC model. This appears to be a significant oversight for such a significant model. The onus is placed on stakeholders to check for weaknesses and errors, within an extremely short timescale. We would welcome clarification on the extent of any assurance activity undertaken by Ofgem, in accordance with best practice, or plans to address this. Our concern is compounded by the apparent lack of SMNCC model documentation.

Chapter 3 – Reviewing Efficient Net Costs

Do you agree with our review of efficient costs and its underlying methodology?

Overall, no. We assess the review of efficient costs and underlying methodology for each of the individual cost and benefit items below.

Cost Assumptions

In-Premise Costs – Installation Costs

We agree with much of the underlying methodology in the calculation of installation costs, and in particular welcome the change to amend the amortisation period of installed assets from 15 years to 12 years, which represents a reasonable weighted average of our SMETS 1 and SMETS 2 asset lives in our Meter Asset Provider (MAP) contracts. However, there are two interrelated areas where we disagree with the methodology and assumptions.

Firstly, the methodology assumes that there is a perfect match between an efficient supplier's installation costs and their ability to amortise them over the life of the meter asset. This is an incorrect assumption. An efficient supplier's ability to amortise the installation costs is based on the installation rate agreed in advance with their MAP where assets are externally provided. We have already identified the issue of "stranded" costs in previous consultation responses, and have argued that the combination of central delays and consumer resistance have meant that deployment in 2019 and 2020 will inevitably be lower than planned, and hence leave any supplier who resourced up to meet their All Reasonable Steps obligation with stranded costs.

We are particularly disappointed with the response to this issue in the consultation as expressed in paragraph 3.56. This references the "possibility" that suppliers' stranded costs could continue into 2019 as if this were an unlikely hypothesis. However, this consultation was published over three quarters of the way into 2019, by which time it was fully apparent that central delays relating to DCC delivery, and in particular the rollout of a SMETS 2 prepayment solution and a Dual Band Communications Hub solution were having a major impact on the smart rollout programme. We fail to understand how Ofgem can assert that an efficient supplier might be expected to anticipate those issues, as this ignores the fact that suppliers have continuously been told to base their plans on "formal" industry delivery dates, no matter how unrealistic they appeared.

Secondly, the other driver of stranded cost issue facing all suppliers, which is not mentioned at all in the consultation, is the growing consumer resistance to having a smart meter installed. In the absence of any mandatory obligation, and in the face of a continuously negative media environment, there is only so much that an efficient supplier can do to persuade a consumer to have a smart meter installed. This growing resistance was highlighted by the Smart Energy Outlook report produced for Smart Energy GB in March 2019. This indicated that only 39% of consumers who do not currently have a smart meter would either seek or accept one in the next six months. The subsequent Smart Energy Outlook report in September 2019, indicates that this figure has fallen to 32%. This research confirms our own experience with low customer yields for eligible consumers. The fact that this figure has dropped from 48% in 2018 is evidence of growing consumer resistance as the pool of enthusiastic consumers has run dry. Consequently, we believe that it is entirely plausible for an efficient supplier to have stranded fixed costs in both 2019 and 2020, and this should be reflected in the non-pass-through SMNCC calculations.

These twin issues of continuing central delays and growing consumer resistance leads to our second point, which is the installation rate, and hence installation cost, that has been assumed. It is possible that both the points above could be addressed through reducing the assumed

installation rate. We note that the proposed rate has not adjusted the CBA assumptions despite the strong evidence, outlined above, that events in 2019 have shown that 5 installations a day is not a realistic figure for an efficient supplier. It is based on historic costs and assumes limited, if any, central issues continuing into 2019 or 2020 (despite nearly a decade of missed milestones) and ignores the ever diminishing enthusiasm for smart meters by those consumers who currently do not have one. Therefore, we believe that the assumption of 5 meters per day should be reduced in the calculation, and that a figure of around 4 meters per day would be a far more realistic assumption on which to derive installation costs of an efficient supplier. This assumption of 4 meters per day is confirmed by BEIS as a realistic number in their benchmarking research in September 2019¹. We therefore believe that the SMNCC calculation should be modelled on the assumption of 4 installations per day, this being the latest view of what an efficient supplier should be able to achieve in the current circumstances.

In-Premise Costs – Asset Costs

The assumption of amortising asset costs over a period of 12 years seems reasonable.

✂

✂ Based on 12 year life and 6% interest this is about £0.60/year for each deployed meter. Also, Ofgem does not seem to make allowance for more expensive asset variants including dual band/868MHz gas meters which are likely to cost c.£3-£5 more to purchase and will be used in large volume in 2020 and beyond and also any complex meters such as 3-phase which are likely to be used in small volume but could cost double standard assets to purchase. Ofgem should confirm that these costs will be factored into the SMNCC.

In-Premise Costs- Premature Replacement Charges

For traditional meter PRCs the rates proposed are in line with our expected costs, so the overall assumptions used seem a reasonable view.

We appreciate that the model has recognised the practical stance on deployment not being targeted by PRC. Given the many variables involved assuming an 'average' PRC cost is correct.

However, we believe that the PRC allowance for SMETS 1 meters is inadequate, and does not reflect the costs incurred by an efficient supplier. We have had to extend the SMETS 1 rollout well beyond what was originally intended due to industry issues wholly outside our control, and the impact of this was compounded by the decision not to count "churned out" SMETS 1 meters as eligible. The inevitable consequences of this decision was that in many cases the incoming supplier removed the SMETS 1 meter, thus incurring PRC charges to the supplier who originally installed the SMETS 1 meter. This eligibility decision was only recently reversed, but the financial damage has been done. We have incurred substantial SMETS 1 PRC charges in 2019 in excess of ₤, much of which is down to the removal of perfectly good working SMETS 1 meters for "churned-out" customers. As the Act requires the Cap to ensure an efficient supplier can fund its activities the SMNCC should be adjusted to take this into account.

We also have a concern that the modelling of SMETS1 PRC cost is fundamentally wrong, with exposure running to many £millions. We will share the detail with Ofgem.

IT Systems Costs

¹ BEIS SMIP Consumer Engagement: Benchmarking Operational Fulfilment, September 2019

We agree with the observation in paragraph 3.84 that suppliers will expect to incur additional IT costs related to the smart meter rollout. We have made this observation in all our previous consultation responses. In addition, we support the proposal to amortise IT costs over five years as a realistic timescale and a significant improvement on the previous assumption of 15 years.

We are also encouraged that the additional data on IT costs which was requested from suppliers through an RFI in September has been utilised in the proposal. However, there is a some discussion in paragraphs 3.90 to 3.101 about whether the costs reported by suppliers represented genuine additional IT costs caused by the smart rollout, with the implication (although not explicitly stated) that some of the IT costs defined by suppliers as “smart related” would in fact have been incurred anyway. We would reiterate that we completed the RFI based on our actual IT investment since 2011, and that the costs relating to the smart rollout have been ring fenced with the basis for the allocation clearly stated in our submission. If there were doubts about whether some of the investment was genuinely “smart related” then we would have expected those concerns to have been raised at the time the RFI was submitted.

That said, the proposal in paragraph 3.102 is to use the data on IT costs that suppliers have allocated to the smart rollout, and we support this. However, we do not agree with the comment in the last sentence of this paragraph that the allowance may be £3 to £4 higher than it should be as it is based on very recent supplier data. In addition, we do not agree that this proposal is in any way conservative. It does not seem logical to use recent supplier submitted data and then to describe the outcome as being conservative and potentially over-stated. The only implication from this is a lack of confidence in the data submitted in the RFI. As mentioned above, we would strongly refute this.

For modelling IT operational expenditure, Ofgem includes 15% of capital investment consistent with the “industry standard figure” used by the BEIS CBA. It is unclear whether this figure is based on supplier RFI responses or some other industry assumption. It appears too low and whilst capitalisation policies may be a factor, it would be helpful if Ofgem could clarify the basis of this figure.

Other costs

Operations and Maintenance - we note that Ofgem has used MAP information to come to the 2.5% assumption, however it is not clear this is correct as MAPs will not see all visits to a meter, just those leading to a removal. Based on our costs, and observed volumes for SMETS2 we have seen \approx . This also excludes visits to sites to investigate comms and Prepayment Meter Interface Device / In Home Display (PPMID/IHD) issues. If we include these we are currently observing a total equating to \approx of meter purchase cost. While we can reasonably expect SMETS2 stability and reliability to improve as the solution matures, we believe this assumption under-represents costs we are currently seeing. It is worth noting however that there is an ongoing roadmap of new technology delivery and also requirements to visit sites to manage firmware upgrade failures, particularly where security driven.

We agree with the proposal to freeze legal and organisational costs at the 2017 level.

We agree with the proposal to freeze marketing costs beyond 2018 at 2018 real cost terms, and the proposal to include no spill-over benefits from smart meter marketing, although we do not believe that this may overstate true costs as stated at the start of paragraph 3.123. We also note that the cost of consumer engagement to accept a smart meter will get progressively higher as we move through to the latter stages of the rollout programme, and that these costs are likely to be

higher than allowed for in either the CBA or this proposal (we would again refer back to the 2019 Smart Outlook report as evidence). However, we accept that these costs should form part of the overall assessment of installation costs.

Supplier Benefits

Avoided Site Visits

The assumptions relating to supplier benefits for Avoided Site Visits, including the proposal not to modify the CBA assumptions, look reasonable and we support them.

Customer Switching

We have concerns about Ofgem's assessment of switching benefits which are based on the BEIS model. Purported cost savings in the BEIS CBA are seemingly linked to the development of the Central Switching Service (CRS) and suppliers' systems to support Faster Switching. There is a lack of transparency around the inclusion of the related IT costs. This should be clarified. In reviewing the prospective benefits of Ofgem programmes, the prior history of Ofgem programmes should be taken into account in terms of cost, scope consistency, and extent and notice timeliness of changes to programme schedules.

Further, our understanding is that Ofgem's £179.8m estimate of supplier costs for the switching programme is net of benefits/savings i.e. supplier costs exceed the benefits.

Inbound Customer Calls

We agree with the assumption that costs per call are higher in the first year after installation of a smart meter, as calls last longer. In subsequent years, the CBA assumes that costs per call are the same for consumers with smart meters and consumers with traditional meters. This may or may not prove to be the case, as smart meter consumers will be more informed and discussions more in depth. This area should be kept under review.

A Single National Rollout Profile

We note the proposal in paragraph 3.170 to use the rollout profile in the CBA, unmodified. The CBA profile for 2019 and 2020 was based on supplier submissions at the start of 2019, and these may differ from the actual rollout in 2019 and the latest view of projected rollout for 2020 due to the two issues mentioned earlier of continued central delays and increasing consumer resistance to accepting a smart meter. Taking this into account, we do not believe that the proposed unconditional acceptance for the BEIS rollout profile is appropriate.

We challenge the implied assertion in paragraph 3.169 that costs and benefits to a supplier move in direct correlation to the number of meters installed. We have already commented above on the nature of fixed costs within the smart meter programme, and this does not seem to be taken account of in this paragraph. It appears to suggest (without explicitly saying so) that the costs and benefits are fully variable, whereas in practice that is not the case, and is definitely not the case in the short to medium term (i.e. up to 12 months). Movements in the rollout profile, in particular delays to it, add costs to an efficient supplier over the course of the rollout programme with very little, if any, offsetting benefit. Overall, if the rollout profile is extended beyond that which was originally intended, then the overall cost to an efficient supplier increases. This does not appear to be taken account of in the proposal, and we believe this to be a major omission. We will comment further in the section on Consideration of Carry Forward Balances.

We understand the constraints upon Ofgem in setting a single cap for all suppliers in line with the requirements of the Act, and therefore accept that the inevitable result will be a single and notional profile. As mentioned above, we do not believe that the profile adopted by the CBA is the latest view of the industry, and there will be additional costs that will be imposed on an efficient supplier as smart installation costs and benefits are not always variable.

Setting an “efficient” benchmark

Paragraph 2.8 refers to a proposal to use ‘average’ costs, rather than lower quartile or frontier costs, with Tables 1 and 2 detailing an adjustment for definitions of efficiency at c£3 per fuel. From previous statements in Ofgem’s 2018 price cap documents, it’s our understanding that such an adjustment is already included in the SMNCC, rather than being a new increment. It would be helpful if Ofgem could clarify this. As we have noted before, use of average instead of quartile for cost factors corrects a methodological error that causes clear bias.

Chapter 4 –Setting the Allowance

Do you agree with how we propose to set the SMNCC and its underlying methodology?

There are three steps in the proposed approach to setting the SMNCC outlined in paragraph 4.2. We agree with the first two steps which involved calculating the annual SMNCC (subject to our previous comments on the BEIS CBA and costs / benefits) and the conversion of an annual SMNCC into six monthly cap periods. We do not agree with the third step which considers the carry forward balances, and comment in more detail below.

Consideration of Carry Forward Balances

We do not agree with the proposal on carry forward balances for the following reasons:

- The proposal is based on what we believe is a fundamentally flawed assumption. At least five times during this section there is reference to customers paying twice (paragraphs 4.43; 4.52; 4.54; 4.70; 4.77). This assumes, once again, that all the costs related to the smart rollout are variable, and that lower volumes of installations result in a proportionately lower cost. As we explain above, this assumption is incorrect. An efficient supplier will have set up their business (and committed to the associated costs) in advance based on the projected rollout profile, which would include agreed industry dates and levels of consumer engagement at that time. Both of these have moved during 2019, and therefore left an efficient supplier with stranded fixed costs. The result, as we have already mentioned, is that central delays to the overall rollout programme will mean higher costs over the entirety of the programme. Consumers are not being charged twice – the reality is that central delays and lack of consumer engagement are increasing overall costs, and this principle, together with the financial consequences, should be reflected in the SMNCC.
- The actual costs for the first three cap periods are not known, but are an estimate based on the new SMNCC model and its associated assumptions. As stated in the consultation (paragraph 4.56) Ofgem are opposed to mechanisms that correct for forecast errors. It is manifestly inappropriate to take a tactical approach by choosing one cost element of perceived but unproven over-recovery in one cap period. All cost elements in all cap periods should be taken into account if such a recovery mechanism is to be considered.
- The proposal claims that the current SMNCC has over-recovered £86m in the first three cap periods compared to the new proposal. This is an unproved assumption that we do not believe to be correct for the following reasons:
 - It is based on an installation rate of 5 smart meters per day for the first three cap periods. We have outlined above why we believe this is inappropriate, and that a rate of 4 should be used to calculate SMNCC in this period, a rate supported by recent BEIS research.
 - It takes no account of stranded fixed costs that have been incurred in 2019 as a result of scaling up to ARS requirements that were dependent upon industry timescales and a higher level of consumer engagement.
 - It takes no account of the additional financing costs incurred as a result of the fall in interest rates and suppliers requiring less funding from their MAPs in 2019. If the £86m that we incurred on behalf of our SVT customers is representative of the industry as

a whole then the total costs to all suppliers would be over £50m, or 60% of the alleged over-recovery.

- It takes inadequate account of the SMETS 1 PRC charges incurred by the installing supplier as a result of SMETS 1 meters being removed by a new supplier.
- Given the uncertainties in the assumptions for efficient costs in 2019 then the very least we would have expected, if Ofgem were determined (despite its own policy) to adjust for so-called advance payments, would be to recognise only a proportion to account for mitigating circumstances (i.e. the third option in paragraph 4.53).

The only aspect of this section that we would support (notwithstanding our comments above) is the proposal to recover any alleged “over recovery” over the maximum potential life of the Cap.

Chapter 5 –Contingency Allowance

Do you agree with our proposals for setting a contingency allowance?

We have explained in our covering letter why Ofgem should apply the contingency allowance for cap period 4. The only practical option for a contingency is using the current SMNCC model/methodology and consequently we support the proposals for setting a contingency allowance.

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General

We recognise the amount of effort that has gone into the report for the Smart Meter Net Cost (SMNC), and its change (SMNCC), for the purposes of setting the cap level under the Domestic Gas and Electricity (Tariff Cap) Act 2018, henceforth Tariff Cap Act or TCA.

We have several concerns but these all appear to relate to the intentions to which the core analysis is put and the output. These concerns are distinct to any views on the quality of the underpinning analysis.

The limited correction of previous methodological errors that downward bias the SMNCC benchmark is a concern given the overall length of the report. The impression is left that the analysis has not been framed or used with an open mind. We note that in conceding points on the SMNCC before, and thereby raising this factor cost in the cap, Ofgem then coincidentally cited the resolution of unrelated errors with a more or less perfect offset. This has left the impression that the situation may repeat and has had a deterrent effect on scrutinising Ofgem analysis.

Transparency

We believe that under Ofgem’s *legal requirement* to be transparent it is our right to see the populated cost model that underpins the SMNC/SMNCC, without any impediment or restricted

access to a dataroom. Ofgem's insistence that this right is signed away is highly questionable, which leaves the question on whether the non-disclosure agreement that we signed is fully legally binding. Nevertheless we will observe them in full. Therefore no part of this response refers to or reveals what is, and is not, in the dataroom. It is then necessarily incomplete.

It is wholly inappropriate for the model, and its framing, coefficients and assumptions to be subject to secrecy. The secrecy is a very significant impediment to proper consultation because public consultation responses, such as this one, are necessarily informed by the model. We will comment confidentially on the model but we and all stakeholders are denied the necessary transparency of seeing other stakeholders' responses and thence understanding common themes.

Ofgem, under the Energy Act 2004 s178, has a "duty to have regard to best regulatory practice transparent, accountable, proportionate, consistent". We have elsewhere in this response rejected Ofgem's softening of the duty to "have regard". Duties to which Ofgem must have regard to may not be cast away lightly.

Under regulatory governance, for example the Nolan principles, it is further clear that Ofgem is *required* to do more than "have regard" as it has chosen to interpret, it "must" and "should" or "should not", as in "Holders of public office *must* act and take decisions impartially, fairly and on merit, using the best evidence and without discrimination or bias....Holders of public office are accountable to the public for their decisions and actions and *must* submit themselves to the scrutiny necessary to ensure this....Holders of public office *should* act and take decisions in an open and transparent manner....Information *should not* be withheld from the public unless there are clear and lawful reasons for so doing" (emphases added).

No valid reason has been provided, clear, lawful or otherwise, for withholding from the public the smart CBA model in, i) the core method, ii) the execution of the method in terms of model and model documentation, iii) the data where they do not contain without permission commercially sensitive information about any named or identifiable company.

Ofgem as an organisation is not bound *directly* in legislation to adhere to the seven principles of public life, but if it chooses not to adhere to one or more than it *does* have a legal responsibility to be *transparent* about which they are.

Further if Ofgem does not intend to adhere to its *own* Statement of Policy on transparency of Ofgem data, then should clearly be stated. The Statement says "To help deliver that credibility and assurance we should be open in what we do. Open to discussion, open to challenge and open about how we reach our decisions." and "Transparency is not always easy or comfortable and nor should it be. I am confident [stated in 2014] that we can meet the challenge of transparency".

We believe that Ofgem should make public everything in the dataroom, that there is no good reason for not doing so and it is not too late to do so.

Modelling standards - documentation

The Macpherson "Review of quality assurance of Government analytical models²" had as recommendation 6: "All departments and their Arm's Length Bodies should havemodel documentation"

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/206946/review_of_qa_of_govt_analytical_models_final_report_040313.pdf

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It is for Ofgem to explain in public what documentation there is in all of its analysis. Any shortcoming in documentation creates exposure for error and (more importantly) evades scrutiny of core analytic method and associated biases.

Modelling standards - Bias

We do recognise that it is standard in government analysis to correct for optimism bias. Ofgem cites that the BEIS CBA follows the standard de-biasing as per Her Majesty's Treasury (HMT) Green Book. This has not been made transparent. We have no complaint about BEIS or its reviewers but note that we may not rely on full de-biasing. There is clear circumstantial evidence of optimism bias, for example: i) a series of upward revision to costs, including on matters that suppliers had flagged and been over-ruled, ii) the National Audit Office November 2018 review "Rolling out smart meters"³. National Audit Office and BEIS apparently had different opinions – we do not know what compromises were eventually made.

Regardless of any corrections for optimism bias, it does not follow scientific standard to make the definitive assumption of no bias since the analysis was not independent.

It is therefore unsafe to assume, or rely on the assumption, that there is no optimism bias.

Recovery

We understand Ofgem's desire (but not the purported basis) to implement a Recovery mechanism in the cap in the next period for the SMNCC. In reality it was only a matter of time before Ofgem changed its position on this, as the mechanism is standard in regulatory price controls, including retail prices, and it was not sustainable to continue not to conform to this standard which is there for a reason. Recovery is efficient because it reduces the deadweight cost of risk capital.

It goes without saying that it would be wholly irrational and unreasonable to apply the Recovery mechanism for this instance alone. The regulatory standard is adopted completely or it is rejected completely.

Ofgem previously, and out of keeping with the usual purpose of Headroom, assigned under-recoveries to be absorbed within it. The headroom was in fact overwhelmed by these amounts.

It is manifestly inappropriate of Ofgem to take a tactical approach by ignoring all previous under-recoveries, including those *directly calculable* and *unrelated to a supplier's efficiency* such as Unidentified Gas or forced mutualisation and insurance of suppliers' defaults, and then choosing one cost element of perceived (but unproven) over-recovery of smart costs in one cap period.

The Competition and Markets Authority (CMA) in the Energy Market Investigation (EMI) in fact used retail margin benchmarks in which there is a Recovery mechanism in the price control. The benchmark was therefore downward biased in the absence of Recovery (for example in the CMA Prepayment Price Cap).

³ <https://www.nao.org.uk/report/rolling-out-smart-meters/>

Having finally arrived at the inevitable conclusion of needing a Recovery mechanism, it now behoves Ofgem to go back over the previous caps (as it is required to do in relation to Q1 2019 wholesale costs)⁴ and make the corrections.

We note the growing suppliers' concern about the under-recovery correction disproportionately affecting growing suppliers. We do believe that it behoves Ofgem to ensure a level playing field for all suppliers but Ofgem has repeatedly stated its position that protection of *companies* is not a primary concern. Indeed, the CMA now appears to have the same view⁵. The growing suppliers' concern is actually somewhat misplaced because they gain primarily onto Fixed Term Contracts, which: i) are not directly affected by the level of the cap and ii) are disproportionately represented by more affluent consumers (this being the principal reason for having the cap), iii) most of these are exempt from having to have SLC44 rollout programmes. The objection therefore falls away and should be set aside. Conversely, the fixed costs stranding approach explained below affects consumers directly (or should do so if the cap is set in keeping with the legislation) and should be taken into account.

Programme variable cost changes due to slower rollout than planned

We do support the use of a Recovery mechanism, in principle. However the citation of over recovery of costs in the prior cap periods is misplaced. This is the most fundamental error in the SMNCC. It is not an error inside the model but in the assumptions apparently intentionally built into the framework outside the model. The confusion or intention is the relationship between cause and effect.

Ofgem's assumption of cause and effect is that suppliers slowed rollout and thereby incurred less cost (assumed fully variable).

There are two separate points here. Firstly, Ofgem misses entirely the point that some programme costs are fixed. Secondly, and partly independently, the variable costs per meter went up.

The reality overall of cause and effect then is the opposite of Ofgem's assertion that costs may become over-recovered in the absence of a Recovery correction. Suppliers encountered a plethora of factors outside their control. These drove rollout rates down and variable costs *up*. We refer Ofgem to the 2018 NAO report previously mentioned.

Ofgem is correct to assert that there were *some* cost reduction effects as a result of slower rollout. There are however very limited. For example, it would appear obvious at first glance that meter procurement costs are fully variable. A closer examination reveals the Original Equipment Manufacturer OEM research and capacity costs make these cost partly fixed.

We explain below the fixed cost effects of the two key factors of reduced number of assets and reduced number of install jobs.

⁴ High Court Judgement 13th November 2019: *British Gas Trading Limited & GEMA*

⁵ Letter from Rt. Hon. Lord Andrew Tyrie to Rt. Hon. Greg Clark. "In summary, the proposals consist of a new statutory duty on the CMA, and the courts, to treat the interests of consumers, and their protection from detriment, as paramount"

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/781151/Letter_from_Andrew_Tyrie_to_the_Secretary_of_State_BEIS.pdf

Firstly regarding assets. Ofgem has taken the view that All Reasonable Steps requires energy suppliers to attain and to exercise detailed technical knowledge deep into the Original Equipment Manufacturer (OEM) supply chain and to commission research for technological development. npower incurred this as a *fixed* cost, which therefore does not scale with volume. Secondly, due to repeated late notified delays to DCC, npower had to minimise stranding of operational resource and inability to fulfil customer appointments by maintaining a buffer stock of SMETS1 meters. This incurred asset stranding.

Secondly regarding install “jobs”. Suppliers tend to have a combination of internal and external resource for Meter Operators (for simplicity we here call this MOPs for both electricity and gas). The situation is easiest to explain in terms of external contracts. Without revealing any commercial secrets we can say that MOPs work out their economics broadly in terms of Full Time Equivalent (FTE) employee costs per day and install jobs per day per FTE (this being part of what is called “yield”). The key here is that FTE costs are fixed for this calculation (competition for labour resource in a compressed timeframe is actually driving these rates up). Hence if yield falls, the aggregation of which is seen in slower pace of national rollout, then the costs remain the same in total but rise per job. There is a further effect. Since yield falls (largely as a result of effects beyond supplier control), and suppliers have fixed targets under SLC44, suppliers spend *more* money in their (partly successful) attempts to recover the yield.

The phase of the accounting of the cost is partly dependent on accounting method, the percentage of MOP work that is outsourced, the core structure of Meter Asset Provision (MAP) contracts, and the structure of Premature Replacement Charges (PRCs) where the supplier stops paying the MAP (e.g. loss of supply contract, exchange of meter, etc.). We recognise that Ofgem must choose a single consistent method. It has chosen MAP amortisation (as distinct for example to depreciation), and we have no complaint with that.

The cost of capital is discussed below.

Programme fixed cost stranding due to shrinking supply base

A supplier’s smart programme must be sized so that the level of confidence it has in adequate resource is high. We expect Ofgem to agree with this point.

Although in the EC Electricity and Gas and Energy Efficiency Directives, from which UK laws and regulations are transposed, and currently remain binding in interpretation as per European Communities Act 1972, it is clear that cost should be minimised, Ofgem has to date, and in this document, taken a different position on All Reasonable Steps in relation to cost.

Without any prejudice to our maintained position that the Directives must be observed, the Ofgem position is a practical reality with practical cost consequences. Clearly it would be irrational, unreasonable and disproportionate of the regulator with one hand to “set the bar high” on not recognising cost efficiency as a constraint in rollout (i.e. enforcing rollout with unconstrained costs) and with the other hand to carve out this extra cost from the cap.

Supplier size is partly endogenously determined, for example by pricing and service, but is also subject to substantial and uncertain external forces, such as varying effects by the regulator on supplier size (the intention to achieve regime change by reducing the size of incumbent suppliers being manifest) and the competitive landscape. So, the suppliers must size their smart programmes for a reasonable high case of customer numbers.

The cap revenue is however only recovered from the average size over the cap period. Suppose for example that a supplier has size N and must size the fixed costs in its smart programme at $N+n$ but in practice has average size $N-m$ over the ensuring cap period. The amount required is $c^*(N+n)$ and it must be recovered over $(N-m)$ accounts.

In practice, Ofgem (to the extent that it recognises fixed costs at all) sizes the cost at c^*N . There is therefore a cost of $c^*(N+n)$ and a recovery of $c^*(N-m)$. The total shortfall is $c^*(m+n)$ and per account it is $c^*(m+n)/(N-m)$. This must be recognised either in the cap or in any constraint to rollout.

The same applies in the next period.

Although not a fixed cost effect, a good example of the stranding cost from uncertainty is to be found in discarded SMETS1 meter stock. Extra stock had to be carried because suppliers correctly second guessed that the DCC would not fulfil its commitments on deadlines. When eventually the deadline was hit it was inevitable and proper that suppliers had SMETS1 stock (either in situ or committed in pipeline) and yet the stock was stranded by the early onset of the SMETS1 prohibition. An external uncertainty beyond supplier control had a stranded cost effect.

Meter Asset Provision costs and Premature Replacement Charges

There is a deadweight cost to consumers as a result of an inefficient MAP market. This is in part a deadweight cost to consumers and in additional part a movement of money from consumers (via suppliers) to financiers (the MAPs) through a stream of PRC windfalls. We have many times in the past pressed Ofgem to oversee the MAP market and do so again now. The principal issue is the lack of contract interoperability. This drives up the cost to MAPs, which passes back to suppliers and thence consumers. The largest element is the PRC that is either explicit or embedded (for example in deemed rates). This is an inefficiency of which Ofgem, by omission, is the direct cause, and the inefficiency penalty may not be passed to suppliers.

A meter asset in situ “on the wall” at a customer premise is worth considerably more than the equivalent asset in the warehouse, because the install has been executed. For this reason, the Meter Operator (MOP) cost, and some related cost are capitalised (if the depreciation method is used) or included (if the amortisation method is used) – these are broadly equivalent in terms of the cap.

The situation is what it is. The asset cost (whether depreciated or amortised) is what it is. If Ofgem believes this to be inefficiently incurred (over and above the inefficiency incurred by the problems due to lack of regulatory oversight), then these must expressly be cited and explained. Otherwise they must be assumed as efficiently incurred by the suppliers.

Supplier efficiency

We welcome Ofgem’s recognition that it has no efficiency metric over and above the BEIS CBA (which we discuss separately here) and suppliers’ actual costs. We note that neither Ofgem, nor previously the CMA, has done any work at any depth to analyse supplier efficiency or inefficiency beyond the dispersions in the actual cost numbers provided by the suppliers. We have many times noted that dispersion of individual cost factors is a highly biased and additionally unreliable basis for the calculation of efficiency benchmarks. Noting that in forming a benchmark Ofgem must ask itself the right questions and take reasonable steps to acquaint itself with the relevant information to enable it to do so, Ofgem should exercise great caution and in the absence of evidence to the

contrary, accept the suppliers' assertions that their own actions are efficient, including in the mitigations of inefficiencies caused by factors external to themselves.

Further, we welcome Ofgem's recognition at para 2.3 that suppliers can have different costs (this is over and above the selection bias effect) and both be efficient. i.e. the supplier with higher cost is not determinable as prima facie inefficient. It follows then that a supplier not on the Efficient Frontier is not necessarily inefficient. We are pleased that Ofgem has now recognised that the presence of cost dispersion, at factor or total level, is not prima facie evidence of inefficiency. Suppliers can all have different costs and all be efficient. This does of course leave open the question of the validity of any qualitative, let alone quantitative, assertion by Ofgem of supplier inefficiency. There appears to be no basis of these assertions.

We do recognise of course that inefficiency is very possible and there is very possibly a level of overall inefficiency that does not merit financing under the Electricity and Gas Acts. This however must be cited and explained and otherwise assumed absent for the purposes of price control.

There is however some inconsistency in the consultation, where the thought creeps in that the presence of a cost (factor cost, aggregate cost in a particular year, or total cost over a period of years) at one supplier is prima facie evidence that another supplier with higher cost must be inefficient and does not warrant the ability to finance.

In the main consultation document it says at 2.3 "some suppliers *may* have efficient costs below the allowance" (emphasis added). This means that Ofgem considers it appropriate (but did not necessarily do) to set a benchmark at *lower than the cost of the cheapest of all suppliers' costs* for this cost element.

Ofgem has gone further than its previous cap consultations in which it cited the efficient frontier, i.e. recognising actual costs. We have previously stated to Ofgem that the Electricity and Gas Acts require Ofgem to ensure that licensed activities are financeable (otherwise clearly they cannot be sustained). We recognise that a degree of efficiency is implicit in the Acts and that it may be appropriate to state that the supplier who has the most expensive costs for a particular element *may* be inefficient. The supplier with the second most expensive costs overall has both the incentive to reduce costs (since savings flow straight to the bottom line) and the urgency to do so. The *inefficient* frontier is therefore the proper cost proxy unless specific inefficiencies are credibly cited.

Given the effect on suppliers' earnings, simplifications, generalisation, approximations and assumptions must be transparent.

In the main consultation at 2.8 we note that Ofgem uses average costs not lower quartile or frontier costs. This correction, made previously for smart, remains a basic cap modelling error made by Ofgem with a knock on effect to financeability of smart. We explained to Ofgem, using different metaphors such as Olympic decathlon, that taking the highest performing quartile in each cost element gives a biased estimate of the highest performing quartile. The same applies to different costs in each year where suppliers may have the same total over a period. If there are four factor costs and four years, that is sixteen different costs. The problem goes away when using median or otherwise average. We recognise the symmetrical argument, that upper bound factor costs add up to more than the total upper bound supplier cost.

Regarding supplier inefficiency, we have previously explained why suppliers have a range of costs for any cost *item* in any year. The range over *time* is now recognised by Ofgem, in the form of

different rollout paces. However, through the combination of cost factors and rollout years, and the rhetoric on efficiency, the bias effect remains implicit in the analysis.

As in all industries, suppliers have a range of costs. Ofgem effectively assumes that the presence of the lowest cost supplier is prima facie evidence of possibility and therefore that all other suppliers have varying degrees of inefficiency. Even if Ofgem can correct for selection biases of time and cost element (which it cannot), the citation of the presence of cost dispersion as inefficiency is such an extreme interpretation of efficiency as to be unsafe. This is the equivalent of saying that Trayvon Bromell, who came last in the 100m in the Rio Olympics final in a time of 10.06 seconds is slow and did not train hard enough. Indeed, Ofgem's logic implies that Justin Gatlin, who lost by only coming second in a time of 9.89 seconds, was also slow. To cite a supplier as inefficient, in a cost element or overall, Ofgem must be specific, base the statement on detailed examination of the facts, have its analysis open to scrutiny, and recognise its own role in the formation of any inefficiency.

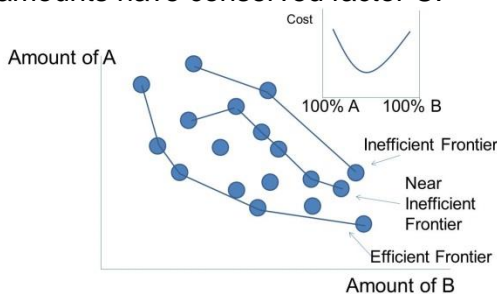
The efficient frontier

We pointed out in the previous consultation that the choice of lowest quartile in factor costs gives a biased estimate in lowest quartile of total costs. The same applies across a period, so if suppliers have the same total factor costs over a period but different phases for them, the selection bias from the lowest quartile is compounded.

The methodological error in the SMNCC has been reduced but not eliminated.

Ofgem cites a frontier in one dimension, i.e. a range of costs. If the frontier is used in standard form – in two dimensions as the word “frontier” confirms – the selection bias found from the factor cost frontier. This is explained below.

Suppose that good G can be made completely from factor A, completely from factor B, or anything in between. If the factors are imperfect substitutes or complements, then The Near Inefficient Frontier (not a standard term) is shown below. Note that in reality the efficient cost envelope is an n dimensional surface. It may be for example that those with high A and B amounts have conserved factor C.



Ofgem's calculation of the efficient frontier is incorrect, but even if not incorrect it is not safe to use the efficient frontier over a limited number of factor costs, since the frontier may be a surface. We do recognise that the inefficient frontier may be too high since markets do not sustain inefficient players and so nor should regulation. Given that market forces already drive out inefficiency the near inefficient frontier is probably the best benchmark.

Central inefficiency

The joint government-Ofgem Smart Meter Prospectus⁶ stated that the government procured Data Communications Company (DCC) would be ready to start offering supplier services in 2013. At the end of 2019, the DCC is still not ready, for example the Prepayment solution is not fully end-to-end tested. Amongst other impacts, the pressure by government and Ofgem for suppliers to make up for government delays by holding the same target dates⁷. The two primary drivers of inefficiencies have been; i) the lateness of the recognitions of the DCC reschedules and ii) the transition challenges to make the first set of meters (SMETS1) interoperable since the second set (SMETS2) required DCC readiness. There have been several other central issues that have driven up the programme cost, which flows fully to suppliers. The original Impact Assessment⁸ cost for the domestic sector was £9.1bn, the 2016 update was £11.0bn (both money of the day) and the NAO in 2018 noted an expectation of further rises on basis of current evidence.

Ofgem has been and continues to be a driver of inefficiency, for example on pressing the pace too fast (see the NAO report), a focus on enforcement which forces suppliers to explain that they are mitigating central issues and what follows is negative public discourse, not engaging effectively enough other regulators to support this programme of critical national infrastructure. The cap is not the place to occlude this.

In making this cost criticism we should note that we remain, as we always have been, fully behind the smart programme, without which the net zero society cannot be achieved and with it net zero society can be achieved. The benefits analysis has had to be evidenced based and is necessarily conservative.

The overall effect of SMNCC on the cap

Ofgem has a duty of care in public office not to be recklessly indifferent to the effect of its deliberate actions and inactions. To drive a sector to loss by such a combination invites questions. The cap is not made in isolation. Ofgem is responsible for the construction of the market. In particular the deliberate inaction in not policing regulatory payments by suppliers (for example by issuing a Provisional Order only on the final day of the Late Payment Window of the Renewables Obligation rather than months before the due date, and then not revoking licence on non-payment despite there being no provision in the RO Order for licensed activity to continue) and then requiring consumers, via suppliers, to pay some of the debts of the failed companies (for example the Ofgem “safety net” which we say is not constructed lawfully). In 2019, Universal Service has become non financeable. Through a combination of actions and deliberate inactions, Ofgem is sailing very close to the wind in its duty of care to companies (employees and shareholders) and to consumers (by making the market unsustainable).

By driving a sector to loss, Ofgem executes the classic government error of treating the situation as a one shot game in which money can be expropriated from the private sector as a one off with no ongoing consequences. In fact it is a repeated game in which the private sector observes this conduct and raises the hurdle for entering the supply market. The increased cost of capital flows to

⁶ <https://www.ofgem.gov.uk/ofgem-publications/63541/smart-metering-prospectuspdf>

⁷ See the NAO report on this point

⁸ <https://www.ofgem.gov.uk/ofgem-publications/63551/decc-impact-assessment-domesticpdf>

consumers as a deadweight cost. In this way, Ofgem directly detriments consumers. The approach is therefore not rational.

Duty to have regard – the case law citation

Ofgem's citation of case law is misleading

First, it is important to note, as is also made clear in the case law, that case law even in key cases, is not the first port of call for a public body. This should be the statute and the debate, consultation leading to the statute, and debate in Parliament. There is case law to support this assertion. Under the separation of powers in the UK constitution, the judiciary does not usurp the role of the legislature or executive. Case law binds in *court* and should be used cautiously in *policy*. In a policy environment, in matters not before the court, it is helpful context but not binding in generality, particularly if (as here) the context is very different.

Ofgem in its most recent case in court⁹ relied on its interpretation of “have regard”, which is essentially the same as cited here. It lost the case, albeit that the case did not turn on this point. We must take from the recent case, at the very least, that Ofgem cannot necessarily rely on its interpretation of have regard.

Second, in fact the cited case law acts in the *opposite* direction to Ofgem's intent. In essence it is probably not hyperbolic to say that finding of the court upheld that financial cost to citizens is a factor when balancing a particular objective. For example the cost of keeping Post Offices open, at the recognised detriment to vulnerable citizens, or the cost of housing at the recognised detriment of some physical challenge in getting to the accommodation. Our point is the same, and consistent with Directives that Ofgem is bound to observe in interpretation (not just have regard).

Third, Ofgem omits some of the key elements that came from the case law. For example what subsequently became known as the Brown principles. For example the third principle that the duty must be exercised in substance, with rigour and an open mind, and the sixth that it is good practice to have adequate documentation *ex ante* to the decision. “Have regard” does not mean prioritise the objectives and then base the final analysis on a subset of objectives, it means that all must be balanced *at all times*.

Fourth, the case law on the Equality Act is in a very different context to here. In particular, the duty in the Equality Act is highly devolved. Officials have to make judgements on the ground, with absolute constraints (for example available vacant premises), in complex situations in which there are varying degrees of several of the protected characteristics. Clearly, equality cannot be achieved and it makes no sense to mandate this as an absolute. Further, the state has only limited capability fully to address societal factors such as poor conduct of individuals in the population in relation to discrimination. The situation is different here. Ofgem is fully in control of the key and single variable – the cap price. This clearly implies a *much* stronger requirement in terms of “have regard”.

The factors that Ofgem must have regard to

According to the Tariff Cap Act, Ofgem must have regard to four factors;

- i) the need to create incentives for holders of supply licences to improve their efficiency;
- ii) the need to set the cap at a level that enables holders of supply licences to compete effectively for domestic supply contracts;

⁹ High Court Judgement 13th November 2019: *British Gas Trading Limited & GEMA*

- iii) the need to maintain incentives for domestic consumers to switch to different domestic supply contracts, and
- iv) the need to ensure that holders of supply licences who operate efficiently are able to finance activities authorised by the licence.

We noted in passing that all prior legislation not amended or repealed has equal status to the Tariff Cap Act, with exception of the European Communities Act 1972 which currently has a higher constitutional status and requires Ofgem to *observe the interpretation* of the EC Directives (not just have regard).

Taking the items in turn:

- i) the incentive for efficiency. Whilst in general, all companies are fully motivated to be efficient, we recognise that the presence of an existential crisis sharpens this incentive. Amongst other clear signs that there is very sharp incentive to be efficient, in order to get costs closer down to the cap, we have engaged in significant staff redundancy programmes. The efficiency incentive is no excuse to set the SMNC below cost.
- ii) the incentive to compete requires there to be something to compete for, in particular an available net margin that is positive after the inclusion of all costs including capital. Suppliers are exiting the market and this evidences the reduced incentive to invest in the supply market. The competition incentive is no excuse to set the SMNC below cost.
- iii) the incentive to switch requires the cap to be set high, not low.
- iv) see elsewhere in this document for the need to have regard for suppliers to be financeable.

The first item falls away and the last three items all require a high cap. There is then no tension between them.

There is then the *single* tension, being reducing the cost to consumers, especially vulnerable consumers and especially those on default tariffs, by lowering the cap, in tension to the “have regard to” factors, which drive up the cap.

Setting the cap below cost drives the sector to loss because, as things turned out, the SVT-FTC differential, being the main driver for the cap in the first place, has sustained. i.e. it appears that Fixed Term Contracts (FTCs) have been driven down and the combination of *both* tariffs being low has driven the sector to loss. This was either accident or intent. It does appear that Ofgem has used the vehicle of the cap to achieve *regime change* in the sector. Achieving regime change *is* within vires but Ofgem is *not* within vires to use the cap to do so as this would not follow the will of Parliament in this Act. With the collapse of the financeability of the sector has arrived: i) significant regressive effects, such as a series of avoidable defaults which have a combination of driving up Standard Variable Tariff (SVT) recognised mutualisations or otherwise exhaustion of headroom and (arguably) increasing the SVT-FTC differential and impending collapse of Universal Service, ii) delivery deficiencies on government programmes (e.g. ECO, Renewables Obligation, Feed-In Tariff, Capacity Mechanism, etc.), and threat of deficiency in other programmes (e.g. smart, Warm Homes Discount).

Noting that “have regard” means making a balanced decision, and that it is not reasonable, rational or proportionate to consider driving a sector to loss as a balanced decision, the remaining crutch that Ofgem has to lean on is the inefficiency argument, which we show above to be flawed. “Have regard” then takes us back to the Electricity and Gas Acts original requirement to secure that

licensed activities can be financed. This is not softened by the Utilities Act introduction of “have regard”. The smart meter programme must therefore be financeable by an adequate SMNCC.

Smart rollout constraint

We note Ofgem’s comment that inadequate revenue in the cap may not be cited by suppliers in their rollout plans.

The consultation is about the cap. Our response is about the cap. This is therefore not our full response about the effect that the cap may have on the rollout.

Ofgem’s position is both out of keeping with the proper interpretation of the legislation and internally inconsistent in the smart consultation. We believe that the Directives are clear that smart programmes must be financeable and their costs recovered in tariffs.

The use of the BEIS Cost Benefit Analysis

The principal use of the Cost Benefit Analysis is to inform future government and regulator decisions on smart meters. A secondary use is in maintaining the principle of holding government to account but checking the ex post outcome to the ex ante rationale and analysis.

The costs and benefits of the smart programme have changed over time, as is evidenced in the series of CBAs. This does not mean prima facie that the CBAs were wrong, but all differences should be reviewed. The National Audit Office reviewed the previous CBA.

The CBA was not made, implicitly or explicitly, to set the SMNCC factor cost in the cap. Clearly it is a useful source but it may not be transposed directly without careful consideration and modification. To fulfil its primary and secondary purpose, the CBA very properly was highly investigative in some areas and less in others. Different levels of accuracy are needed for different purposes. To take an example, for example an egg timer is accurate enough for cooking but not for timing races.

The CBA rightly considers the expectation of actual costs, not an idealised view of what costs might be. However, it is perfectly possible within a CBA to cite how the net benefit can be improved by increases in efficiency. Ofgem may draw from this any comments about supplier inefficiency.

Cost recovery over some or all customers

Ofgem errs in its prognosis of cost recovery across different customer cohorts. The situation is readily explainable with reference to the Energy Companies Obligation and thence to smart. Some suppliers have ECO and some do not. In different market conditions, exempt suppliers may either not price in ECO and gain market share or price in ECO and gain gross margin. In the current market it is clear that ECO is not priced in. ECO is either then not recovered (at variance to its principle) or is priced in to Standard Variable Tariff. This is levered, for example if 50% of a supplier’s customers are on SVT, to recover costs it must double the ECO cost recovery in SVT.

Large suppliers are required to have smart meter programmes and are bound directly by Supply Licence Condition 44 (effectively a Special not Standard licence condition). Those not bound by SLC44 are in practical terms also exempt from SLC39 (the requirement to take All Reasonable Steps to install smart meters). There the cost of smart is at least partly levered into SVT.

This leaves the question of how Ofgem should price the cap. In fact this is clear: i) the Electricity and Gas Act requirement of the regulator to have regard to the need to finance licensed activities such as smart rollout; ii) the Directive requirement for the cost to be proportionate and hence disallowing National Regulatory Authorities from regarding rollout cost as unconstrained; iii) the structure of the prevailing market, the aggregate profit of the supply sector being minimal, and suppliers exiting in deficiency of SLC39 amongst other deficiencies. The cap must then recognise the leverage of costs on smart.

Ofgem expresses an *apparently* normative view that it does not wish suppliers to pass through the smart costs, that they *actually incur*, through to customers. However it must obey the statute in the Electricity, Gas and Tariff Cap Acts as well as the Directives.

Cost of capital

The BEIS CBA properly uses Her Majesty's Treasury (HMT) Green Book standards. In particular, it uses real rather than nominal money and uses a (real) interest curve that is determined by HMT rather than the market. For present purposes we take as read that that approach is best for the smart CBA. This does not necessarily make it the best method for the cap, which has a different purpose.

Suppliers, and the price cap, must work in the actual circumstance, which does not necessarily conform to the Green Book. In particular, suppliers and the price cap necessarily work with money of the day "nominal" money. Ofgem recognises that the actual cost of capital does not follow the Green Book. Ofgem should also note the inflation factors in the cap have much greater importance than the Green Book (since its framework is in real money and ignores actual inflation effects) and that this drive actual modelled costs and their trajectories to differ to the CBA. There is a debate as to whether governments should work with real money and at non market rates for Cost Benefit Analyses here. We have no comment on Green Book or the BEIS CBA in this regard, but it is *clearly* inappropriate to use non market rates in applying price control. Suppliers, as per the Electricity and Gas Acts, must work in real markets. Whilst at first sight it might seem the case that real Green Book rates are higher than market rates adjusted to be real, the picture is more complicated than this and any basic analysis is unsafe.

We recognise that Ofgem has a very difficult job to do here. This is further much compounded by a live debate on cost of capital, especially in regulatory price control. Finally, there is the issue of pre and post tax, equity return (the normal benchmark) or debt return (more suited to MAP rental), and average and marginal costs. Further, a critical cost in the SMNCC being the implied interest rate in the MAP amortisation schedules is extremely sensitive to the actual PRC cost, the PRC cost to the MAPs and the PRC clauses in MAP contracts.

This matter is live and complex. Whilst recognising that Ofgem had to land on one figure or other, we reserve judgement on this in the short time available in this consultation. As an initial view we can say that: i) 6% real rate implied in amortisation does not look an unreasonable starting point; ii) the tax adjustment is a sensible starting point; we recognise that gearing reduces the tax effect adjustment and it will be important in any subsequent change to maintain sight of market benchmarks rather than make an adjustment in isolation; iii) the CMA analysis was somewhat confused as they used 10% nominal pre-tax Weighted Average Cost of Capital.

The term "high bar"

In the main consultation at 2.5 Ofgem notes a "very high bar" for further reviews. It is not in Ofgem's gift to place a high bar and Ofgem must comply with the Act and have regard to all

relevant factors. With aggregate earnings in domestic supply likely to be very small and possibly negative in 2019, and substantial job losses, any statement by Ofgem that suppliers lack incentives to be efficient, is divorced from reality and further undermines any rationality for placing a high bar. Further, by placing a high bar, with the effect of pressing programme pace to the detriment of efficiency, Ofgem acts in violation of its primary duty to protect the interests of consumers, including ensuring that important licensed programmes such as smart can be financed.

Ofgem's previous use of the term "high bar" in a metering context was discredited and over-ruled and we are surprised to see it re-appear. The term has no statutory meaning and should not be in any further consultations or responses.