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Default Tariff Cap: Policy Consultation Appendix 10 - Smart metering costs

Consultation - supplementary appendix

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Overview:

The energy market works well for consumers who shop around. Suppliers compete for these engaged consumers, offering low prices to gain or retain their custom.

But the retail energy market is not working for consumers who remain on their supplier's default tariff. Our work, and the Competition and Markets Authority's investigation, has shown there is little competitive constraint on the prices suppliers charge these consumers. As a result, they are paying more than they should be.

To address this problem, Government has introduced legislation into Parliament which would require Ofgem to design and put in place a temporary cap on all standard variable tariffs and fixed-term default tariffs. We anticipate that Parliament will approve the Domestic Gas and Electricity (Tariff Cap) Bill in the summer, and the default tariff cap will come into force at the end of 2018.

We are now consulting on how we might design and implement the default tariff cap. This supplementary appendix to the main consultation document sets out our proposals in relation to smart metering costs. This document is aimed at those who want an in-depth understanding of our proposals. Stakeholders wanting a more accessible overview should refer to the main consultation document.

Associated documents

Policy consultation for Default Tariff Cap – Overview
https://ofgem.gov.uk/system/files/docs/2018/05/default_tariff_cap_-_policy_consultation_-_overview.pdf

Links to supplementary appendices

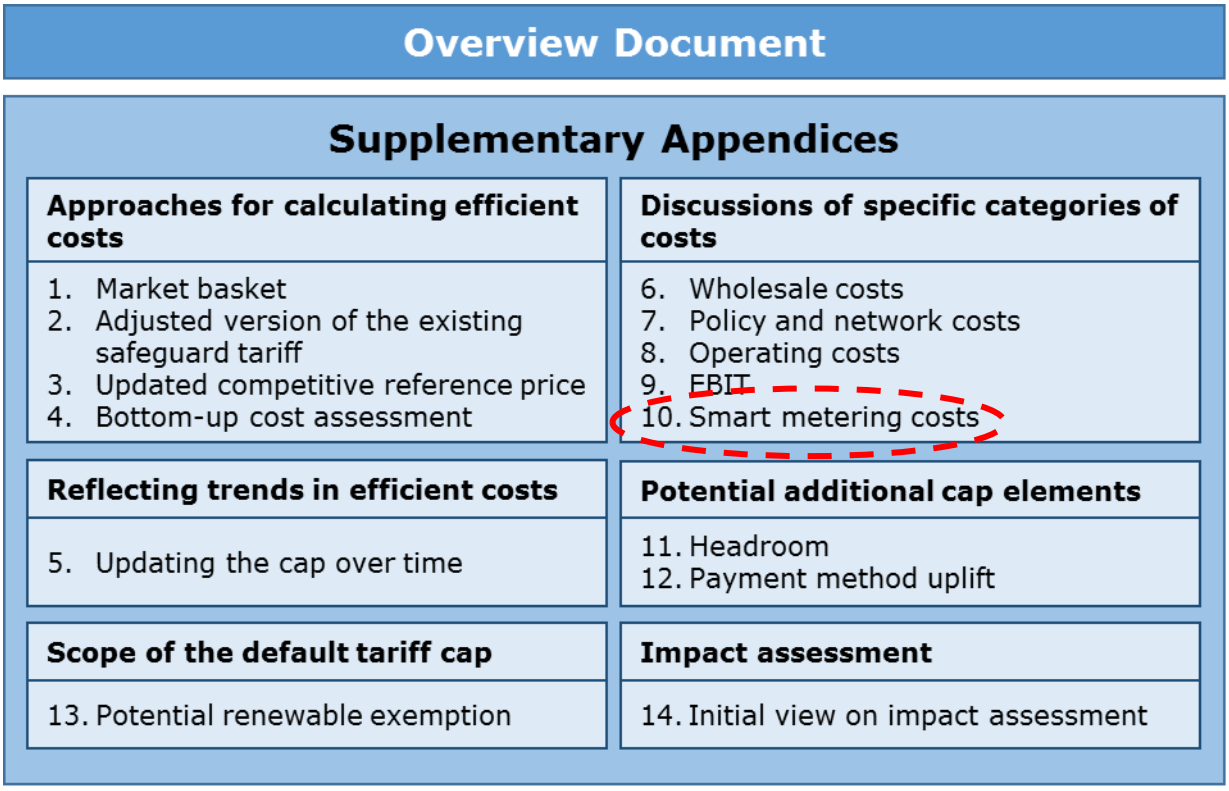
- Appendix 1 - Market basket: https://ofgem.gov.uk/system/files/docs/2018/05/appendix_1_-_market_basket.pdf
- Appendix 2 - Adjusted version of the existing safeguard tariff https://ofgem.gov.uk/system/files/docs/2018/05/appendix_2_-_adjusted_version_of_the_existing_safeguard_tariff.pdf
- Appendix 3 – Updated competitive reference price https://ofgem.gov.uk/system/files/docs/2018/05/appendix_3_-_updated_competitive_reference_price.pdf
- Appendix 4 – Bottom-up cost assessment https://ofgem.gov.uk/system/files/docs/2018/05/appendix_4_-_bottom-up_cost_assessment.pdf
- Appendix 5 – Updating the cap over time https://ofgem.gov.uk/system/files/docs/2018/05/appendix_5_-_updating_the_cap_over_time.pdf
- Appendix 6 – Wholesale costs https://ofgem.gov.uk/system/files/docs/2018/05/appendix_6_-_wholesale_costs.pdf
- Appendix 7 – Policy and network costs https://ofgem.gov.uk/system/files/docs/2018/05/appendix_7_-_policy_and_network_costs.pdf
- Appendix 8 – Operating costs https://ofgem.gov.uk/system/files/docs/2018/05/appendix_8_-_operating_costs.pdf
- Appendix 9 – EBIT https://ofgem.gov.uk/system/files/docs/2018/05/appendix_9_-_EBIT.pdf
- Appendix 10 – Smart metering costs https://ofgem.gov.uk/system/files/docs/2018/05/appendix_10_-_smart_metering_costs.pdf
- Appendix 11 – Headroom https://ofgem.gov.uk/system/files/docs/2018/05/appendix_11_-_headroom.pdf
- Appendix 12 – Payment method uplift https://ofgem.gov.uk/system/files/docs/2018/05/appendix_12_-_payment_method_uplift.pdf
- Appendix 13 – Renewable tariff exemption https://ofgem.gov.uk/system/files/docs/2018/05/appendix_13_-_renewable_tariff_exemption.pdf
- Appendix 14 – Initial view on impact assessment https://ofgem.gov.uk/system/files/docs/2018/05/appendix_14_-_initial_view_on_impact_assessment.pdf

Document map

This supplementary appendix to the main overview document sets out our proposals for smart metering costs.

Figure 1 below provides a map of the default tariff cap documents published as part of this consultation.

Figure 1: Default tariff cap – policy consultation document map



Links to these documents can be found in the 'Associated documents' section of this document

Contents

1. Our proposed approach for setting the cap

This chapter summarises our proposed approach to setting the Smart Metering Net Cost Change (SMNCC) and the Smart Metering Reference Price Adjustment (SMRPA), for the starting level of the default tariff cap, to apply from December 2018.

Overview

1.1. Energy suppliers are required to take all reasonable steps to roll out smart meters to all their domestic and small business customers by the end of 2020. Smart metering brings immediate benefits to consumers, helping them to take control of their energy usage. It is a key enabler for the transition to a more flexible energy market and the move to a low carbon economy, with suppliers seeing net savings over the longer term that, in a competitive market, should be passed on to customers. Metering costs are in an inherent part of a supplier's operations and as such, we consider they should be considered as part of the operating cost element of the cap.

1.2. The Competition and Markets Authority (CMA) did not explicitly consider smart metering as a separate cost component in the prepayment meter (PPM) tariff cap. A number of suppliers noted they disagreed that the CMA PPM cap did not consider smart metering as a distinct cost and have already stated in Working Paper responses and separate submissions that smart metering costs should be considered separately in the default tariff cap.

1.3. Given stakeholder feedback on the CMA PPM cap and responses to our working papers, we have considered how we might treat smart metering in the default tariff cap. We propose:

- to include a smart metering index which enables us, when initially setting and subsequently updating the cap, to vary smart metering costs (including changes to Data Communication Company (DCC), Alternative Home Area Network Company (Alt HAN Co), Smart Energy Code Administrator and Secretariat (SECAS), Smart Energy Great Britain (SEGB) and Smart Metering Installation Code of Practice (SMICoP) charges) in a different manner to the other elements of the operating cost part of the cap; and

- within the smart metering index, to consider DCC, Alt HAN Co, SECAS, SEGB and SMICoP charges as "pass-through" costs for the purposes of the cap, and to be set with reference to published charging statements. The remainder of the index will be set in advance, based on our view of the expected impact of the rollout on the operating costs of an efficient supplier.

1.4. This is likely to apply in either a bottom-up cost assessment or either of the two reference price approaches.

1.5. In this appendix we explain our proposed methodology for the treatment of smart metering under the default tariff cap. We consider how the net cost of smart metering could be included within the bottom-up and reference price approaches. We also consider how the future net costs of the smart metering rollout could be included in updates to the level of the default tariff cap. Where our thinking and analysis has progressed sufficiently, we include our minded-to positions. It is worth noting that where explicit values have been used in this report in terms of the smart metering net costs, these are indicative only. They have been included to aid readers in reaching a reasonable understanding of the level and implications of this.

1.6. It is also important to note that this analysis does not show the comprehensive impact of smart metering on consumer bills because we have sought to model only the costs and benefits directly related to suppliers. This excludes the energy bill savings that consumers make by interacting with the energy consumption data provided through the in-home display linked to the smart meter. The analysis also excludes network-related benefits and reduced electricity generation costs from enabling a smart system.

Modelling the impact of smart metering on the default tariff cap

1.7. In order to accurately reflect suppliers' net cost of smart metering into the default tariff cap, we have sought to model the changes in smart metering costs over the initial period of the cap.

1.8. We have reviewed the options for modelling (fully described in Judgement 2 in Chapter 2) and consider that using the existing body of expertise and experience on the BEIS Smart Metering Implementation Programme (SMIP) to be the optimum approach.

1.9. Working with BEIS we have used the current BEIS SMIP Cost Benefit Analysis (CBA) model as the starting point and made the following updates:

- Used updated input data from the recently submitted Annual Supplier Report (ASR) for 2017 – this is intended to capture recent changes in supplier costs.

- Applied an up to date industry average rollout profile derived from supplier reporting to Ofgem – intended to ensure the rollout profile is as up to date as possible.

- Adjusted the reporting outputs to focus on the costs and benefits which are relevant to suppliers and the default tariff cap – to calculate a net cost change for the default tariff cap.

- Removed items specific to any prepayment meters which are subject to an existing cap.

1.10. Hereafter, this is referred to as "the model".

1.11. Ofgem has received stakeholder feedback in responses to working papers, concerning the method for calculating smart metering costs, benefits and the data used. The feedback has suggested:

- we should collect our own information on the costs and benefits of smart metering from all suppliers, rather than relying on the BEIS data
- not all costs and benefits are captured in the BEIS SMIP CBA model with some respondents providing particular areas of concern; and
- DCC and SEGB costs have changed since the last BEIS SMIP CBA was issued in 2016 and updated charges should be used in the default tariff cap.

1.12. At this stage we do not consider a full smart metering RFI to be required, given we are using the most recent ASR data and Ofgem's own supplier-submitted rollout volumes. However, we will consider whether the model input assumptions would benefit from any updated data to reflect recent developments. For example:

- rental agreement termination costs for dumb meters
- increased customer enquiries in the period immediately after smart meter installation.

1.13. A number of other cost and benefit items have been highlighted through stakeholder feedback which we believe may be accounted for in the model and underlying data, either explicitly or implicitly. In addition, we will be reviewing the latest basis of evidence for supplier smart metering benefits in the period before the statutory consultation.

1.14. Most prepayment customers are covered by the PPM cap , and will not be subject to the default tariff cap. At this stage, factors specific to prepayment tariffs have not been included in the model. Prepayment customers with fully interoperable (SMETS2) smart meters are not covered by the PPM cap however, and may be subject to the default tariff cap, depending on their tariff. We will be reviewing the impact of prepayment in the period before the statutory consultation.

1.15. A number of comments received referred to costs for central industry bodies, such as the DCC and SEGB. We propose the charges for DCC, Alt HAN Co, SECAS, SEGB and SMICoP be considered as pass-through – ie the level of the cap should be updated in order to reflect the suppliers' per customer costs of these charges - and estimated using the relevant available published charging statement and budgets.

1.16. If stakeholders have evidence that there are smart metering costs or benefits that are not recognised, or not recognised correctly under the proposed approach, we invite them to supply this as part of their response to this consultation.

Separately identifying smart metering costs

1.17. To date, over 10m[1] smart meters have been rolled out, with large suppliers already having established major installation programmes, with plans to ramp up the rates of smart meter installation even further in 2018-2020. In addition, the benefits of smart metering are likely to be realised over a longer period of time. As a result, we have assumed that a disproportionate amount of the overall smart metering costs will be incurred by suppliers in the initial period of the default tariff cap., As such, whilst the rollout is ongoing, there may be an overall net cost on suppliers from smart metering.

1.18. In addition, we recognise that the smart metering rollout has been ongoing for several years, and that, for many suppliers, smart metering has been incorporated into their business-as-usual activities. This makes it more challenging to separate smart metering net costs from the business-as-usual activities of metering, billing and customer service.

1.19. We also consider that the net costs of smart metering (ie costs after supplier benefits) may change in a manner which is different from the exogenous indexation approach we describe in Appendix 5.

1.20. As a result, we have developed a methodology that recognises:

- smart metering is an intrinsic part of suppliers' business-as-usual operations – as a result we do not seek to separate out smart metering from operating costs more generally when setting the initial baseline; and

- the smart metering rollout is likely to drive a different supplier cost profile from other activities. This is reflected in a separate smart metering index which is applied from the baseline period to the initial level of the cap (2018), and to update the cap in subsequent years.

1.21. As a result, we have focused our methodology and analysis on the way that smart metering net costs are likely to change from the baseline period over the remaining period of the rollout. Rather than assessing the absolute net cost of smart metering for suppliers in 2018 and beyond, we are looking at the change in net cost between years, ie the change between net costs in 2017 compared to 2018, 2019 and 2020.

[1] https://www.gov.uk/government/collections/smart-meters-statistics

QA10.1: Do you agree with our minded-to position to include a separate smart metering index to reflect the changes in costs from the baseline (2017) to the initial year of the cap (2018)?

Approach for the bottom-up cost assessment option

1.22. We have considered two possible approaches to reflect the expected costs of the smart metering programme were we to set the cap using a bottom-up cost assessment:

1. Treating smart metering costs the same as other operating costs.

2. Using a smart specific indexation for net smart metering costs based on the change of smart metering net cost from the baseline (2017) to the first year of the cap (2018).

1.23. We are minded to select option 2 – a smart metering specific indexation based on modelling the year-on-year change of smart metering net costs. Having completed our initial analysis, we consider that there will likely be material changes to the net cost of smart metering for efficient suppliers and that these changes will be driven by other factors than the generic operating costs of suppliers. As a result, we consider that option 1 would not appropriately reflect the changing year-on-year costs of efficient suppliers.

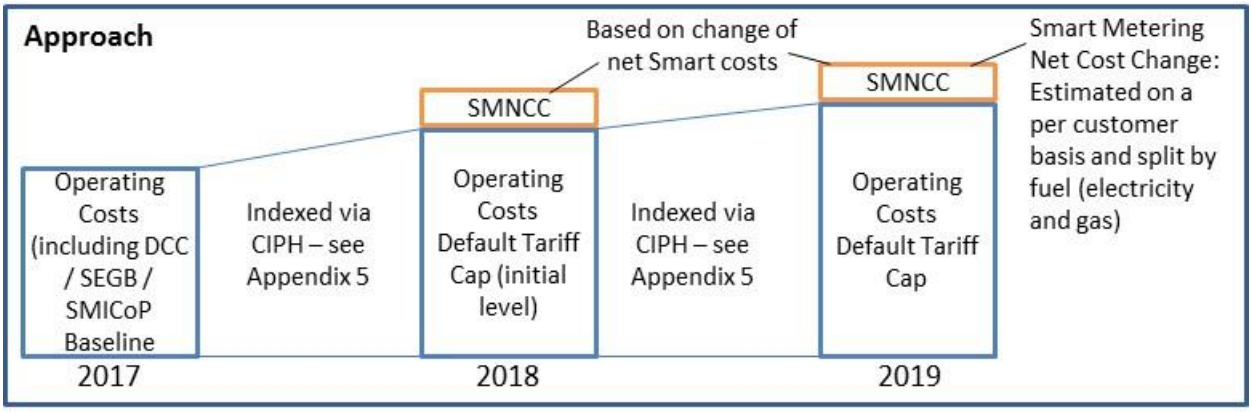
1.24. As described in Appendix 8, under a bottom-up approach, we would estimate an efficient allowance for operational costs using the information on historic costs collected from suppliers. This allows us to estimate a baseline, which will then be indexed to get the level of operating costs in the default tariff cap in the first period of the cap.

1.25. The costs that suppliers have incurred in relation to smart metering will have been included within the broader operating costs reported by each company. To this, we will add our estimate of DCC and other smart pass-through charges for gas and electricity customers (see below for a discussion of these charges). As such, the baseline will already include an allowance for the historic efficient cost of smart metering. Therefore, our proposed approach would be to:

- use a modelling approach to estimate the change in smart metering net costs (**Smart Metering Net Cost Change (SMNCC)**) between the baseline year and following years – this would be expressed as a £X value per customer per fuel (electricity and gas); and

- add the SMNCC to the allowance for efficient operating costs included within the default tariff cap. This is illustrated in Figure A10.2 below.

Figure A10.2: Minded-to approach for smart metering



Source: Ofgem analysis

1.26. To estimate the SMNCC we propose to take the following approach:

- Select the most appropriate approach to **modelling the relative changes to smart metering net costs** (explained in Chapter 2, Judgement 1).
- Identify the **costs and benefits categories in the model and any additional categories which are directly relevant** to the default tariff cap (Judgement 2).
- Review whether **non-efficiency costs variations**, such as supplier size, accounting approach and rollout maturity need to be allowed for. Where these are material and not controllable by an efficiently operating supplier we would consider including a specific adjustment in the SMNCC (Judgement 3).
- Considering the rollout costs of a range of suppliers, **estimate the efficient cost of rolling out a smart meter** (Judgement 4).

1.27. Each of the four judgements listed above is discussed in detail in the next section of this document.

1.28. This proposal is based on the assumption that the bottom-up approach uses a baseline based on our view of efficient operating costs in 2017. Another option for setting the efficient baseline (see Appendix 4) is to set this basedon operating costs over a longer period – eg from 2015 to 2017. We are aware that smart metering net costs may have risen over this period so, were a longer period used, we would consider whether there is a case for including an additional adjustment (e.g. to reflect the SMNCC from 2015 to 2017).

Minded-to position

1.29. In the event that we select the bottom-up cost assessment approach for the default tariff cap, we propose using the model to estimate the smart metering net cost difference from 2017 (baseline) to 2018 (including smart metering pass-through charges such as DCC, SEGB and SMICoP) and then for subsequent years. We would also consider whether any material non-efficiency variations exist that should be adjusted for in the SMNCC.

Approach for the reference price cost assessment options

1.30. In the event that we choose one of the two reference price options to set the initial level of the default tariff cap, we would consider whether the tariffs (reference tariffs) that are used to build the benchmark are representative of an efficient supplier rolling out smart meters.

1.31. In order to make this comparison, we would seek to understand the specific smart metering costs and benefits reported by the suppliers of the reference tariffs at the point of baseline (2017 under the updated reference price approach and 2015 for the adjusted version of the existing safeguard tariff).

1.32. Where available, we would use existing data, for example the ASR for 2017 along with the suppliers' current roll out profile. In the event this data was not available we would issue a targeted RFI to the suppliers in question.

1.33. Once we had the smart metering cost and benefit information from the reference tariff suppliers, we would compare each supplier's smart metering costs and benefits against the model. Where a significant difference is identified between the smart metering costs of reference tariff suppliers and the model, we would apply an adjustment to the default tariff cap – **Smart Metering Reference Price Adjustment (SMRPA)**. The SMRPA would also include any changes to smart metering pass-through costs (DCC, SEGB, SMICoP, Alt HAN Co and SECAS) from the baseline to the first year of the cap.

1.34. In the event we select the adjusted version of the existing safeguard tariff as the option for the default tariff cap, we would seek to use supplier specific historic smart metering costs and benefits data to index from 2015 to the initial level of the cap. We would then compare the resulting smart metering net costs against the model to assess whether any further adjustment would be required to reflect the net cost of smart metering.

Minded-to position

1.35. In the event we select one of the reference price methodologies to calculate the default tariff cap, we would compare the model against the smart metering costs and benefits of the suppliers making up the reference price benchmark. Where a

material difference is identified we would seek to adjust the reference price, this adjustment would be the Smart Metering Reference Price Adjustment (SMRPA).

QA10.2: Do you agree with our minded to position-to include an adjustment to the Reference Price (SMRPA) in the event a material difference is identified between the smart metering net costs of the suppliers making up the reference price and the model?

Approach for DCC, SEGB and SMICoP charges

1.36. A number of industry bodies have been established to facilitate the smart metering roll out:

- SEGB – the central delivery body for smart metering consumer engagement.
- Smart metering installation code of practice governing body (SMICoP).
- DCC – the centralised smart metering data and communications company.
- Alt HAN Co – the body established by suppliers to develop and roll out the Alt HAN solution.
- SECAS – the Smart Energy Code (SEC) code administrator and secretariat.

1.37. In all cases these industry bodies are paid for via charges to suppliers. DCC, Alt HAN Co and SECAS charges are recovered via DCC charges. SEGB and SMICoP charges are recovered separately.

1.38. For the purposes of the default tariff cap, we consider the charges for SEGB, SMICoP, DCC, Alt HAN Co and SECAS should be passed through.[2]

Smart metering pass-through costs methodology – bottom-up costs assessment

1.39. In the event the bottom-up cost assessment approach is selected, we would include the changes to the costs of the above organisations from baseline to the first year of the cap (2018) as follows:

- Using the charging statement/budget from the industry organisations for the baseline period, we would establish the total charges to suppliers for the

[2] When we refer to "pass through" we mean adjustments made to reflect the average cost across suppliers for industry bodies (DCC, SEGB and SMICoP)

baseline period per industry organisation on a per electricity customer and per gas customer basis (using the approach described below).

- The individual pass through charges would be aggregated to a total cost for electricity per customer, and for gas per customer, for the baseline period.

- We would then repeat the above approach for the first year of the cap (2018) using the most recent charging statements/budgets.

- This difference would allow us to estimate the change between the baseline period and the first year of the cap. This would be included in the SMNCC.

Smart metering pass-through costs methodology – reference price approach

1.40. In the event one of the reference price approaches is selected we would include the changes to the costs of the above organisations from baseline to the first year of the cap (2018) as follows:

- Using the charging statement/budget from the industry organisations for the baseline period (2017 for the updated reference price and 2015 for the adjusted version of the existing safeguard tariff) we would establish the total charges to suppliers for the baseline period per industry organisation on a cost per electricity customer and per gas customer basis (using the approach described below).

- The individual pass through charges would be aggregated to a total cost for electricity per customer, and for gas per customer, for the baseline period.

- We would then repeat the above approach for the first year of the cap (2018) using the most recent charging statements/budgets.

- This would allow us to estimate the change between the baseline period and the first year of the cap. The total of the changes in pass-through charges for the above organisations would be included in the SMRPA.

SEGB pass-through charges

1.41. SEGB charges are set out in its annual Consumer Engagement Plan and Budget.[3] Charges are split into two broad categories:

[3] https://www.smartenergygb.org/en/-/media/SmartEnergy/essential-documents/essential-documents/english/Consumer-engagement-plan-and-budget-2018.ashx

- Fixed Operating Costs – paid for by all suppliers split by domestic market share

- Capital Costs – paid for by suppliers with more than 250k customers, split by domestic market share

1.42. In order to ensure that all SEGB charges can be recovered, we propose including a pass-through allowance for all costs (both Fixed Operating Costs and Capital Costs) regardless of size of supplier.

SMICoP pass-through charges

1.43. SMICoP governance has an annual industry charge. We propose to split this by electricity and gas metering points to establish a per electricity customer and per gas customer annual charge.

DCC pass-through charges

1.44. DCC charges as set out in the most recent DCC Charging Statement[4] are split into four categories:

- Fixed Charges

- Fixed Alt HAN Charges

- Fixed Communications Hub Charges

- Explicit Charges

1.45. We are minded to pass through DCC charges for electricity and gas as part of the default tariff cap according to the following methodology.

Fixed Charges

1.46. We have taken the total number of electricity and gas metering points and respectively estimated the annual Fixed Charges per electricity meter and per gas meter (DCC references the monthly cost for Import Suppliers and Gas Suppliers).

[4] https://www.smartdcc.co.uk/media/454705/charging_statement_ry1819_-_issue_1.0__final_.pdf

Fixed Alt HAN Charges

1.47. We have taken the total number of electricity and gas metering points and respectively estimated the annual Alt HAN Co Charges per electricity meter and per gas meter (DCC references the monthly cost for Import Suppliers and Gas Suppliers).

Fixed Communications Hub Charges

1.48. We have used the DCC charging statement assumption of SMETS2 annual rollout profile, split by electricity and gas and respectively estimated the annual Fixed Communications Hub Charges per SMETS2 Communications Hub (DCC references the monthly cost for Import Suppliers and Gas Suppliers).

Explicit Charges

1.49. We have used the DCC charging statement assumption of Explicit Charges and have divided by the total number of electricity and gas metering points to establish a per customer per fuel value for Explicit Charges

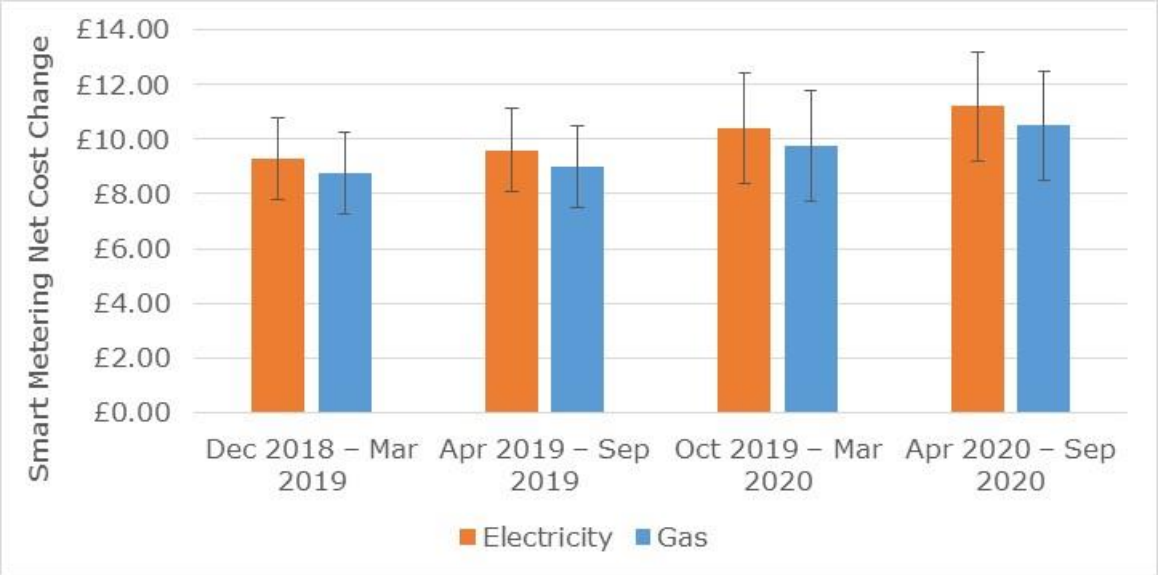
Provisional estimates for the Smart Metering Net Cost Change

1.50. Based on our analysis to date we have provisionally estimated the SMNCC per customer as set out in the table below. We intend to update the values in later years to reflect the latest available charging statements. To estimate the DCC, SEGB and SMICoP costs changes for years beyond the first year of the cap we have used available forecasts.

Table A10.1: Provisional estimates for SMNCC against 2017 baseline

Year (SMNCC against 2017 baseline)	Electricity	Gas
December 2018 – March 2019	£9.30 ±£1.50	£8.75 ±£1.50
April 2019 – September 2019	£9.60 ±£1.50	£9.00 ±£1.50
October 2019 – March 2020	£10.40 ±£2.00	£9.75 ±£2.00
April 2020 – September 2020	£11.20 ±£2.00	£10.50 ±£2.00

Figure A10.3: Graph of provisional estimates for the SMNCC up to 2020 against 2017 baseline



Source: Ofgem analysis

1.51. As previously noted, these estimates are broadly indicative. They have been included to aid readers in reaching a reasonable understanding of the level and implications of the SMNCC. We intend to complete further analysis in a number of areas (including smart metering benefits and pre-payment) in advance of the statutory consultation.

1.52. The net cost estimates of the model are estimated on a calendar year basis. We propose to rely on the calendar year charges where they are appropriate for the cap period from April to September. For the cap periods from October to March, we propose a weighted average adjustment of our smart metering net cost allowance based on the estimates for the current year and next year (eg for the cap that runs from October 2019 to March 2020 we would use a weighted average of 2019 and 2020 net costs from the model. The relative weighting will be based on the number of days in which the price cap will be applied in the current year and next year.

QA10.3: Do you agree with our initial assessment for the Smart Metering Net Cost Change, including our inclusion and assessment of the costs of SEGB, SMICoP and DCC charges?

2. Key judgements

This chapter sets out the key judgements for setting the Smart Metering Net Cost Change.

Judgement 1: Modelling the Smart Metering Net Cost Change

2.1. We intend to model the net cost of smart metering per customer for each year, so that we can estimate the change in net costs from the baseline year (where we have supplier operating cost data from the recent RFI) to the first year of the cap. This would allow us to reflect any smart metering net cost changes into the cap where they do not align with the overall indexation approach. This is consistent with the operating cost approach (Appendix 8).

2.2. The first judgement is how to best model the net cost of smart metering to an efficient supplier on a per customer basis. In this section we explain our rationale and methodology for working with the BEIS Smart Metering Implementation Programme (SMIP) to develop a model (the model) to accurately reflect the net cost of smart metering on suppliers, using the BEIS SMIP CBA5 model as the starting point.

2.3. We have considered two options:

1. Working with the BEIS SMIP to develop a model to accurately reflect the net cost of smart metering on suppliers, using the current BEIS SMIP CBA model as the starting point.

2. Building a new Ofgem smart metering model.

Options considered

Working with BEIS to develop a model using BEIS SMIP CBA as starting point

2.4. When considering existing smart metering models there is one obvious solution. The BEIS SMIP CBA model has been in existence for 10 years. It has been reviewed and updated on multiple occasions. Whilst full CBAs are generally conducted every few years, BEIS receives updated data from the Annual Supplier Report, most recently with the ASR submission for 2017.

[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/567167/OFFSEN_2016_smart_meters_cost-benefit-update_Part_I_FINAL_VERSION.PDF

2.5. We consider the advantages of using the model are:

- **robustness** – the BEIS SMIP CBA model has been in existence for several years and has been reviewed and updated on multiple occasions

- **policy alignment** - the BEIS SMIP CBA model has been used to justify the government's policy on smart meters.

2.6. We consider the disadvantages of using the model are that it:

- **would need adjusting** – the BEIS SMIP CBA assesses the total economic impact of smart metering against a counterfactual of no smart metering across all areas (retail, customer, generation, networks, environmental). As such, for use in estimating the SMNCC it would need to be adapted to focus purely on the net costs for suppliers

- **is based on 2016 data** – the last CBA which was issued was in 2016. Since then a number of key inputs will have changed. For example, DCC costs have risen and the rollout profile has changed. We would need to use updated data where possible. We note that updated supplier data from 2017 is available through the ASR.

Ofgem smart metering model

2.7. Ofgem does not currently have a model that covers the net costs and benefits of smart metering. In the event that we did not use an existing model we would need to build our own from scratch, develop a set of input assumptions and then issue a smart metering RFI to all suppliers in order to populate the model with data and estimate the SMNCC.

2.8. We consider the advantages of an Ofgem smart metering model are that it would be:

- **bespoke** – a new model would be built for the purpose of calculating the smart metering net cost adjustment whereas the existing BEIS SMIP CBA model would need some adjustment and updated data.

2.9. We consider the disadvantages of an Ofgem smart metering model are:

- **additional reporting (suppliers)** – given that suppliers already provide significant smart metering reporting to BEIS and Ofgem, we consider issuing a smart metering full cost and benefit RFI at this time is not required
- **not proportionate (Ofgem)** – the BEIS SMIP CBA model supports all the analysis that we are seeking to develop. It is not clear that developing a new model would be more effective at modelling net supplier smart meter costs than amending an existing and proven model. As such, it does not appear to

be proportionate to build a new model when an existing one can be leveraged.

2.10. Considering the above options, building a new smart metering model does not appear to be a better approach. Suppliers already provide a significant volume of up to date smart metering data to both BEIS and Ofgem. In addition, the BEIS SMIP CBA model has the capacity to be updated with more recent data than was used for the 2016 CBA data. It has also been developed over 10 years to model the overall impact of smart metering on the economy, and is a robust and available modelling solution. As such, it provides the best option for modelling the change in net costs over the period of the default tariff cap.

Minded-to position

2.11. We are minded to work with the BEIS SMIP to develop a model to accurately reflect the incremental net cost of smart metering on suppliers, using the BEIS SMIP CBA as the starting point. We are minded to:

- **adjust to focus on relevant supplier costs and benefits** – as detailed below we would only be using the costs and benefits that are directly relevant to the Default Tariff Cap

- **update with 2017 ASR** – As part of adjusting the BEIS SMIP CBA we would update the model with data from the most recent ASR submission (in February 2018) of 2017 data

- **update DCC, SEGB and SMICoP costs** – we would use updated DCC costs from the most recent relevant charging statement.

Judgement 2: What are relevant smart metering costs?

2.12. Once we have determined the most appropriate base for modelling the smart metering net costs for the default tariff cap, we have to then determine which costs and benefits are relevant for the calculation of the SMNCC.

2.13. This breaks down into the following steps:

- **Relevance** - which costs and benefits are relevant to the cap.
- **Categorisation** - of the relevant costs and benefits, which are efficiency related and which are pass-through.

Relevance

2.14. The model covers the full range of economic impacts (costs and benefits) that arise from the implementation of smart metering. As a result, it models the impact of a number of costs and benefits which may not be directly relevant to suppliers.

2.15. For the default tariff cap, we should only consider the costs and benefits that are directly relevant to the suppliers..

2.16. We have reviewed the full range of costs and benefits as set out in the most recent BEIS SMIP CBA. In Table A10.2 we set out our initial view of the relevant costs and benefits. Costs and benefits that we consider to be relevant for the SMNCC are underlined. We would appreciate stakeholder feedback on whether there are any changes we should consider to the relevant costs and benefits.

Table A10.2: Full list of cost and benefits showing relevant costs and benefits

Cost Categories	Benefits Categories
In premise costs Meters and IHDs Installation of meters Operation and maintenance of meters Communications equipment in premise **DCC related costs** DCC license Data services Communications services Other service providers **Suppliers' and other participants' system costs** Supplier capex Supplier opex Industry capex Industry opex **Other costs** Energy Disposal Pavement reading inefficiency Organisational Marketing	**Consumer benefit** Energy saving Microgeneration **Business benefits** *Supplier benefits* Avoided site visits Inbound enquiries Debt handling Avoided PPM COS premium Remote (dis)connection Reduced theft Customer switching *Network related benefits* Earlier fault notification/detection Faster restoration of supply Operational savings from fault fixing Reduced calls to emergency and fault lines Better informed enforcement investment decisions Reduced cost to serve new connections Avoided investigation of voltage complaints Reduced losses Avoided investment from ToU (distribution/ transmission) *Generation benefits* Short run marginal cost savings from ToU Avoided investment from ToU (generation) **Carbon and air quality benefits** Global CO2 reduction EU ETS from energy reduction EU ETS from ToU Air Quality

2.18. For a detailed description of each cost and benefit please see the BEIS SMIP CBA 2016.[6]

Included costs

2.19. In summary we consider that only costs directly related to the smart metering rollout should be considered as relevant to setting the smart metering cost allowance in the default tariff cap. As a result, we consider the following costs are relevant:

- all In-Premise costs
- all DCC, SEGB, SMICoP, Alt HAN Co and SECAS charges
- supplier capex (capital expenditure) and opex (operational expenditure) system costs
- all costs which are defined in the BEIS SMIP CBA model as "Other Costs".

Excluded costs

2.20. We do not consider that industry capex and industry opex system costs are relevant for the calculation of a smart metering costs allowance as neither is directly incurred by suppliers.

Included benefits

2.21. We consider that only benefits which are directly related to suppliers are relevant to the calculation of the smart metering cost allowance. These include:

- Avoided site visits
- Inbound enquiries
- Debt handling
- Remote (dis)connection
- Reduced theft

[6] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/567167/OFFSEN_2016_smart_meters_cost-benefit-update_Part_I_FINAL_VERSION.PDF

- Customer switching
- Microgeneration – specifically the reduction in suppliers' costs from not having to install a separate export meter where a customer with microgeneration has a smart meter.

Excluded benefits

2.22. Benefits which are not directly related to supplier rollout are not considered to be relevant. These include:

- supplier benefits - avoided PPM COS premium - as it relates specifically to prepayment accounts, which are subject to the PPM cap
- all consumer benefits apart from Microgeneration
- all network related benefits
- all generation benefits
- all carbon and air quality benefits.

2.23. On network benefits we have assumed that any reduction in network / transportation costs that may result from the introduction of smart meters would result in reductions in network / transportation charges and these reductions would be passed through to suppliers (see Appendix 7). As a result, we consider these should not be included in the calculation of the SMNCC.

2.24. We also consider that generation benefits would flow through into wholesale costs savings and therefore should not be included when assessing the smart metering cost allowance.

2.25. We do not consider that carbon and air quality benefits are relevant to the calculation of the SMNCC.

Minded-to position

2.26. We are minded to include the following cost and benefit categories as being directly relevant to the smart metering Net Cost Change:

TABLE A10.3: Relevant costs and benefits

Cost Categories	Benefits Categories
In premise costs Meters and IHDs Installation of meters Operation and maintenance of meters Communications equipment in premise **DCC related costs** DCC license Data services Communications services Other service providers **Suppliers' and other participants' system costs** Supplier capex Supplier opex **Other costs** Disposal Pavement reading inefficiency Organisational Marketing	**Consumer benefit** Microgeneration **Business benefits** *Supplier benefits* Avoided site visits Inbound enquiries Debt handling Remote (dis)connection Reduced theft Customer switching

Judgement 3: Controlling for non-efficiency costs variations

2.27. There may be a number of areas where efficient suppliers have costs that are not fully within their direct control. It might be possible to envisage a scenario where two suppliers may be equally efficient at rolling out smart meters but one, due to a factor beyond its control, has higher costs.

2.28. As part of our assessment of the SMNCC we have reviewed the potential areas of non-efficiency variation to assess whether any would require an adjustment to the SMNCC under a bottom-up cost assessment approach.

Areas for investigation

2.29. Based on our initial assessment, we consider there to be two areas where a non-efficiency variation warrants a detailed assessment.

<u>Scale</u>

2.30. One of the areas we have investigated is whether there are any significant differences between the six largest suppliers and other large suppliers which would require a non-efficiency variation to be included in the SMNCC. We have not assessed small suppliers as we have access to limited information on small supplier smart metering costs and benefits through the model and ASR.

2.31. We considered that there may be variations between the six largest suppliers and other large suppliers in the following areas:

- **asset cost** – are large suppliers able to access cheaper deals with Meter Asset Providers (MAPs) due to their greater scale and larger order volumes?

- **installation costs** – does the greater customer density of the six largest suppliers drive additional installation efficiencies. Can larger suppliers access lower cost deals from third party installers?

Rollout maturity

2.32. Suppliers are all at different stages of their smart metering roll out. We considered whether the level of maturity (percentage of customers with a smart meter) has an impact on suppliers' cost base over the lifetime of the default tariff cap.

Methodology

2.33. For each potential non-efficiency variation, we have reviewed the ASR data to identify differences between suppliers. These differences could be considered to be related to non-efficiency variations (ie factors a supplier cannot control for). We have then segmented the market, grouping suppliers with similar efficiencies together (the six largest suppliers and other large suppliers). We then ranked each supplier within the segment by efficiency and compared suppliers to assess whether there is material variation.

2.34. Where the analysed non-efficiency variation is considered material, a treatment would be added into the SMNCC (ie the net cost change would either be increased or decreased, depending on the variation).

Initial analysis

2.35. We have conducted some initial analysis of the non-efficiency variations and present our findings below.

Hypothesis

2.36. The first stage is the assessment of whether there is clear evidence that non-efficiency drivers of variation show a clear impact on smart meter rollout costs.

Do smart meter asset and installation costs vary across suppliers based on level of rollout?

2.37. When considering the relationship between smart costs and status of rollout, it is envisaged that there are two competing impacts on supplier costs:

- Cost erosion over time – as installers and meter providers become more efficient, supplier costs should decrease as suppliers progress their rollout

- Harder to reach customers concentrated at end of rollout – suppliers may target installations at households with the lowest cost to serve before installing meters for difficult-to-reach customers, which suggests that supplier costs could increase as their rollout status progresses.

2.38. Given the two offsetting effects of rollout status on smart meter and installation costs, it is unknown whether the net effect will result in a positive or negative relationship between rollout status and costs. Subject to any evidence in the available data suggesting a non-zero relationship, our null hypothesis is that there is no effect of rollout status on supplier costs which needs to be accounted for in the cost allowance.

2.39. We have developed the following hypotheses.

TABLE A10.4: Non-efficiency analysis hypotheses

	Null Hypothesis	**Alternative hypothesis**
1a	Smart meter costs (asset costs) do not vary systematically by supplier level of rollout.	Smart meter costs (asset costs) do vary systematically by supplier level of rollout.
1b	Smart meter installation costs do not vary systematically by supplier level of rollout.	Smart meter installation costs do vary systematically by supplier level of rollout.

Initial results

2.40. We assessed two areas across the six largest suppliers and other large suppliers with more than 250,000 customers:

- whether there was any difference in the cost of the asset depending on rollout progress

- whether there was a difference in installation costs depending of rollout progress

2.41. The initial analysis results indicate:

- the sample size is relatively low, with 11 suppliers submitting ASR responses, this makes it more difficult to determine a relationship between the parameters we assessed
- the available evidence is insufficient to conclude the variation in asset and installation costs is systematically different between the six largest suppliers vs. other large suppliers
- as a result, the available evidence does not demonstrate a significant relationship between:
    - costs of asset depending on rollout progress
    - cost of installations depending on rollout progress.

Minded-to position

2.42. Based on the available data, it is not possible to reject any of the null hypotheses. Therefore, there is currently no strong evidence to suggest that non-efficiency adjustments need to be made in how we assess the efficient costs of the smart meter rollout.

QA10.4: Do you agree with the judgements we have set out regarding smart costs; in particular our choice of data and model, identification of relevant costs and benefits, and approach to variation?

Judgement 4: Estimate the efficient cost of rolling out a smart meter

2.43. Once we have identified the relevant costs and benefits to include in the smart metering net cost adjustment and the level of non-efficiency variations, the next stage is to estimate the efficient annual net cost of rolling out a smart meter on a per customer basis. In this section we set out our methodology and some of the key considerations.

Methodology

2.44. We are minded to use the following approach to set the efficient cost of rolling out a smart meter:

1. where data is available, input updated data into the model from the most recent ASR so that costs and benefits are up to date

2. in each cost and benefit category assess the spread of costs across the supplier base

3. estimate the cost of rolling out a smart meter for the frontier efficiency, the lower quartile and the average of the six largest energy suppliers (described later)

4. estimate the counterfactual of what it would cost to not roll out smart meters and instead operate the existing non-smart meters (in an efficient manner)

5. net the total smart metering costs against the counterfactual costs then subtract the benefits from the net costs to obtain the efficient cost of rolling out a smart meter.

Use of actuals

2.45. We are currently minded to use actual numbers in calculating the baseline level of the smart metering net cost and then to update using forecast costs and benefit numbers. We consider using a baseline based upon actual costs, projected forward based on the model outputs, will provide a more accurate assessment of cost than purely using forecasts.

2.46. We note that 2018 is a crucial point in the rollout, with the transition from SMETS1 to SMETS2, along with the development of Dual Band Communication Hubs and the first cohort of SMETS1 meters enrolled and adopted into DCC. As a result, we are assessing whether any of the assumptions that input into the model will significant change from 2017 onwards.

QA10.5: Do you consider that there will be any significant change in the costs or benefits of smart metering from 2017 onwards? For example, installation costs or asset costs. Please provide evidence to support your view.

Establishing the efficient net cost of rolling out smart metering

2.47. There are three approaches to identifying an efficient cost which we have considered.

TABLE A10.5: Approaches to considering efficient cost for smart metering

	Description	Benefits	Limitations
Average cost approach	Cost allowance is based on a calculation of the average of the six largest suppliers	This approach accounts for the distribution of costs suppliers face, in the event that the frontier cost is significantly lower than a cluster of costs faced by other suppliers	This approach produces the highest cost allowance and reduces incentives for suppliers to seek efficiency gains. Given no conclusive evidence that there is a difference in cost variation due to non-efficiency reasons, it is unclear what may be driving some suppliers to face higher-than-frontier costs
Pure frontier cost approach	Cost allowance based on the lowest cost amongst the six largest suppliers.	The approach creates the strongest incentives for customers to not pay for smart metering rollout inefficiency	The approach does not account for the distribution of costs that suppliers face. The frontier cost may be significantly lower than the costs faced by the next most efficient supplier.
Lower Quartile	Cost allowance based on the cost of the supplier representing the lowest quartile. Out of the six largest suppliers, this would be the second most efficient supplier	As a compromise approach between the average and the frontier, this approach blends some of the benefits and limitations of both of the approaches above.	

2.48. In practice, there was variation in cost reporting across suppliers, particularly large suppliers outside of the six largest suppliers; our current view is that the

supplier pool in question for the efficient cost calculation should be restricted to the six largest suppliers. This is for several reasons:

- **completeness of data** – ASR responses tend to be more complete for the six largest suppliers

- **vulnerability to small variations in cost base** – smaller suppliers' responses on per household costs will tend to be more sensitive to smaller variations in the cost base, as these are distributed over a smaller number of households

Minded-to position

2.49. We are minded-to determine the SMNCC based on the net costs of the six largest suppliers. At this stage we are yet to reached a minded-to position on the smart metering efficiency approach (frontier, lower quartile or average). We intend to conduct further analysis in advance of the statuatory consultation to inform our view.

QA10.6: Please comment on the proposed methodology for calculating the efficient cost of rolling out a smart meter, indicating a preference with supporting rationale, on the efficiency option (average cost approach, pure frontier cost approach, lower quartile approach).

3. Updating the cap

This chapter sets out our proposed approach to updating the smart metering element of the default tariff cap. We also consider whether there are any impacts on the smart metering rollout from our proposals for the default tariff cap

Updating the cap

3.1. One of the key reasons for considering the smart metering costs separately is the potential need to use a different updating approach. Unlike other supplier costs a portion of the smart metering costs and benefits may be dependent on the rollout profile that the supplier has chosen to adopt (ie the number/proportion of smart meters forecast to be installed each year up to the end of 2020).

Options we have considered for updating the cap for smart metering costs

3.2. From the perspective of smart metering we have considered three potential updating approaches:

1. No specific updating approach required.

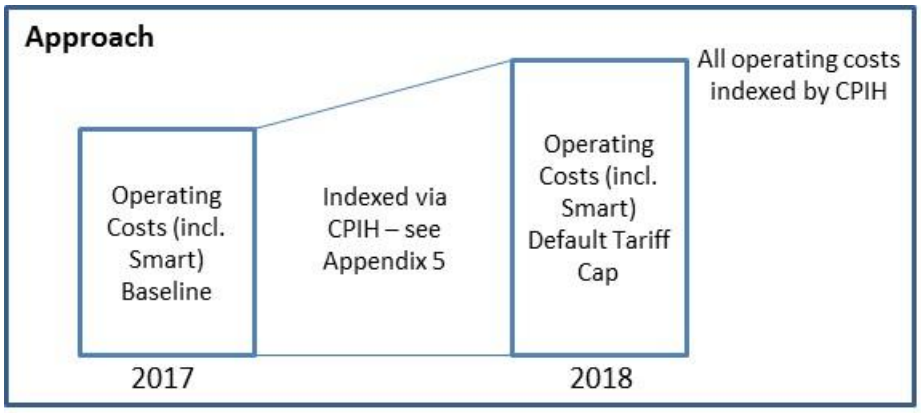
2. Periodic cost assessments.

3. Specific smart indexation based on net cost analysis.

1 - No specific updating approach required

3.3. In the event the analysis shows no specific smart metering net cost change from the baseline to subsequent year, then no updating approach would be required.

Figure A10.4: Updating approach under a scenario where there is no smart metering net cost allowance required



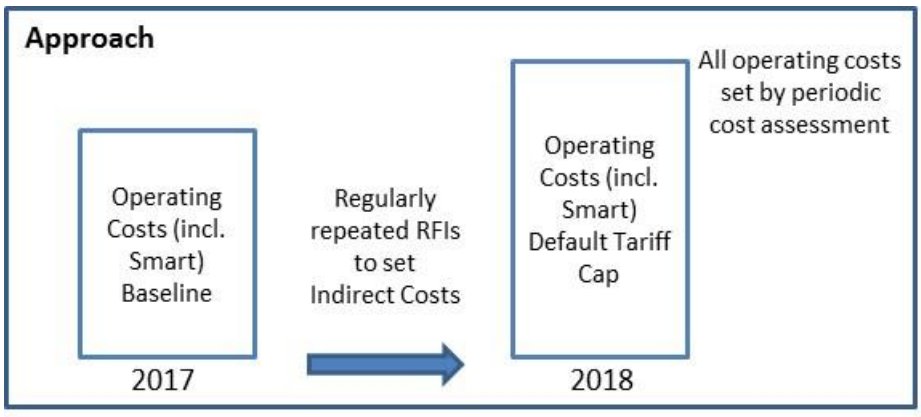
Source: Ofgem analysis

3.4. Our initial analysis suggests the supplier smart metering net costs are likely to change in a way that is different to other elements of the operating costs, so we are currently not minded to progress this option.

2 - Periodic cost assessment

3.5. As described in Appendix 5, the level of the cap could be updated based on a periodic review of suppliers' realised costs. This would involve periodically collecting historic cost information from different groups of companies, making any efficiency adjustments that were required, and then using this to set the revised level of the cap.

Figure A10.5: Updating approach for all operating costs set via a periodic cost assessment



Source: Ofgem analysis

3.6. We do not propose to update the cap using periodic reviews of costs. Using periodic reviews of suppliers' realised costs would have the advantage of ensuring

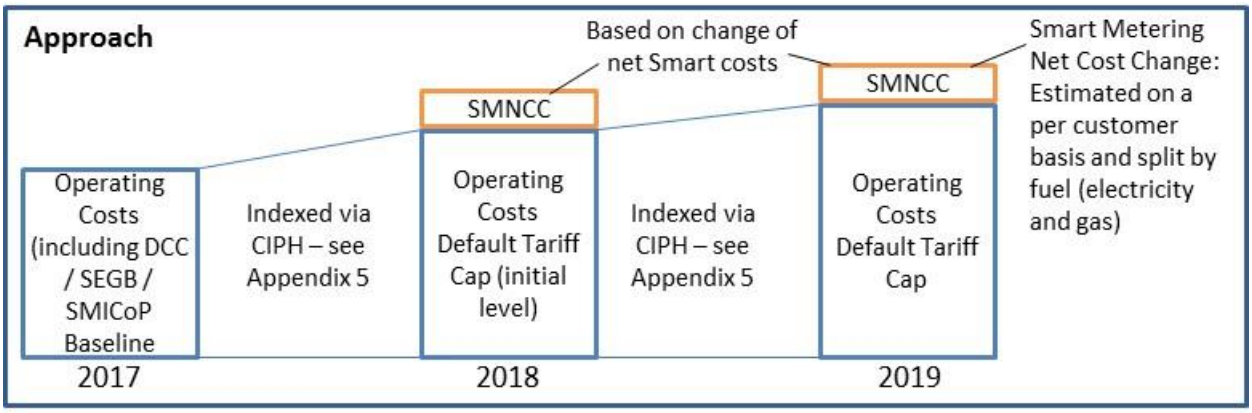
that all relevant trends in costs are taken into account in the level of the cap – particularly if these are unexpected. However, the information on costs would necessarily be backwards-looking, meaning that the level of the cap would move in line with historic rather than current trends, distorting competition in the market. In addition, we consider it would be difficult to separate the different categories of cost (including smart metering), meaning a full recalculation would be required for all operating costs which could reduce the efficiency incentives of the default tariff cap.

3 - Specific smart updating approach based on net cost analysis

3.7. The final option we have considered is to have a specific updating approach for the smart metering element of the indirect cost. We have assumed that as part of the suppliers' RFI responses, smart metering costs will have been implicitly included within indirect costs and, as such, the baseline will include the historic efficient cost of smart metering. Therefore, our proposed approach would be to:

- use a modelling approach to estimate the change in smart metering net costs between the baseline year and following years
- convert this smart metering net cost difference between years into a £X value per customer per fuel type (electricity and gas) (SMNCC) which is then included in the cap.

Figure A10.6: Specific smart updating approach based on net cost analysis



Source: Ofgem analysis

3.8. We consider the advantages of this approach would be that it:

- provides a more mechanistic approach and provide greater predictability than the periodic cost assessment option
- may provide a stronger incentive to drive efficiency in the smart metering roll out

- would have a lower administrative burden for suppliers than the periodic cost assessment.

3.9. We consider the disadvantages of this approach would be:

- to provide no immediate opportunity to ensure that allowances reflect un-forecasted developments in rollout profile and unit costs beyond summer 2018.

Minded-to position

3.10. We currently consider option 3 - specific smart updating approach based on net cost analysis – to provide the best balance of efficiency, proportionality, predictability and accuracy.

QA10.7: Do you agree with our approach to updating smart costs? In particular, our intention to specifically index smart cost changes, based on net cost analysis (option 3), and whether any other approaches would be preferable to option 3.

Smart metering updating approach – bottom-up cost assessment

3.11. We have developed an indicative approach setting out how we would update the smart metering net cost for the default tariff cap in the event of a cap based on the bottom-up costs assessment.

3.12. We would first estimate the smart metering net cost for 2017 (baseline) and subsequent years based on the model. This would be split by fuel (electricity and gas) and include pass-through charges such as DCC, SEGB and SMICoP.

3.13. Once we have estimated the respective smart metering net costs for electricity and gas we would compare the net cost of the baseline and subsequent years in order to understand the net cost change for each fuel per year from the baseline. This smart metering net cost change would be converted to a £X uplift/reduction for each fuel against the baseline. To provide an indicative view of how the SMNCC may change of time we have estimated the indicative SMNCC for 2018, 2019 and 2020.

Smart metering updating approach – reference price

3.14. The smart metering approach for updating the cap under a reference price would operate in a similar manner to the bottom-up cost assessment updating approach.

3.15. In advance of each default tariff price cap period, the change in smart metering net costs would be estimated using the model. Changes to net costs which are not already accounted for in the exogenous indexation approach used for operating costs

would be included in the SMRPA. The SMRPA would then be applied to the total operating costs allowance.

4. Responses to stakeholder feedback

This chapter details our response to stakeholder feedback on smart metering which has been received through the working paper process and additional submissions.

Overview

4.1. We have received a number of responses as part of the working paper process and additional responses which are directly related to smart metering. Below we summarise the responses and provide an Ofgem view.

Smart metering should be considered separately

4.2. A number of stakeholders recommended we adopt a different approach from the CMA PPM Tariff Cap and consider smart metering costs as a separate component of the default tariff cap.

4.3. We agree with stakeholders' view that we should, at the least, assess whether smart metering should, reasonably, be considered separately as part of our analysis. We note that, having completed the analysis, we may subsequently consider that smart metering is not sufficiently material to separately reference in the cap or to index.

4.4. We are currently minded to include a separate allowance for the SMNCC for the years of the cap.

Feedback related to modelling the smart metering costs and benefits

4.5. We have received stakeholder feedback in responses to working papers, that concern the method for calculating smart metering costs, benefits and the data used. The feedback has suggested:

- we should issue a full smart metering RFI to all suppliers to gather data on costs and benefits
- not all costs and benefits are captured in the BEIS SMIP CBA model with some respondents providing particular areas of concern
- DCC and SEGB costs have changed since the last BEIS SMIP CBA was issued in 2016 and updated charges should be used in the default tariff cap.

4.6. On the first point, we consider at this stage that issuing a full smart metering RFI is not required, given we are using the most recent ASR data and Ofgem's own supplier submitted data on rollout.

4.7. On the second point, we believe the approach of using a baseline for operating costs based on data provided by suppliers will mean that most costs are implicitly captured, and explicit treatment would only be required where newly identified costs are expected to vary in the future. Additionally, costs that scale with rollout would need to have been specifically excluded from ASR submissions in order for them not to be captured implicitly by the proposed approach. A number of other cost and benefit items have been highlighted which we believe are accounted for in the model, either explicitly or implicitly. However, we are considering whether the model input assumptions would benefit from updated data to reflect current rollout developments, or where the treatment of costs needs to be adapted for the purposes of determining the SMNCC. For example:

- Rental agreement termination costs for dumb meters: these costs are unlikely to be captured for traditional meters installed prior to the start of the smart meter roll out programme.

- Increased customer enquiries in the period immediately after smart meter installation: these costs have not been explicitly allowed for to date.

- Meter testing: whilst this is likely to be captured to some extent in the baseline, there may be reasons why these costs will increase in the future, for example the enrolment and adoption of SMETS1 meters by the DCC.

4.8. We will be reviewing the available evidence in these areas in the period before the statutory consultation. In addition, we will be reviewing the latest evidence on benefits.

4.9. On the third point, a number of comments received referred to costs for central industry bodies such as the DCC and SEGB. We propose the charges for DCC and SEGB be passed through, based on the latest available published charging statement and budgets, as has been described elsewhere in this document.

4.10. A number of comments received referred to costs for central industry bodies such as the DCC and SEGB. We propose the charges for DCC and SEGB be passed through – ie the level of the cap should be updated in order to reflect the suppliers' per customer costs of these charges - and estimated using the relevant available published charging statement and budgets.

Considering the impact of supplier differences – size, rollout maturity – on rollout

4.11. A number of stakeholders recommended that we should consider adjusting the Smart Metering Net Cost Change to take account of non-efficiency costs such as supplier size and the rollout maturity.

4.12. We have considered these areas in Judgement 3. The available evidence is insufficient to conclude the variation in asset and installation costs is systematically different between the six largest suppliers vs. other large suppliers.

4.13. In addition, the available evidence does not demonstrate a significant a relationship between the costs of asset depending on rollout progress and the cost of installations depending on rollout progress.

4.14. In the event that suppliers are aware of non-efficiency costs or benefits that they consider are different to other types of suppliers and that they cannot control, we request they provide additional evidence as part of their consultation response.

Accounting treatments

4.15. A number of stakeholders recommended we should consider the impact of different accounting treatments on the smart metering allowance in the default tariff cap.

4.16. At this stage we have not identified a material impact on the smart metering Net Cost Change that would arise from differing accounting approaches. We would welcome feedback, including supporting evidence, setting out the specific impact on stakeholders and how their particular accounting approach differs from other stakeholders and has a material impact on their smart metering Net Cost Change.

5. Consultation responses and questions

We want to hear from anyone interested in this document. Send your response to the person or team named at the top of the front page.

We've asked for your feedback in each of the questions throughout it. Please respond to each one as fully as you can. The full list of consultation questions is available in Chapter 7 of the main consultation document.

Unless you mark your response confidential, we'll publish it on our website, www.ofgem.gov.uk, and put it in our library. You can ask us to keep your response confidential, and we'll respect this, subject to obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004. If you want us to keep your response confidential, you should clearly mark your response to that effect and include reasons.

If the information you give in your response contains personal data under the Data Protection Act 1998, the Gas and Electricity Markets Authority will be the data controller. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. If you are including any confidential material in your response, please put it in the appendices.

Chapter 1 – Our proposed approach for setting the cap
Question A10.1: Do you agree with our minded-to position to include a separate smart metering index to reflect the changes in costs from the baseline (2017) to the initial year of the cap (2018)?
Question A10.2: Do you agree with our minded-to position to include an adjustment to the Reference Price (SMRPA) in the event a material difference is identified between the smart metering net costs of the suppliers making up the Reference Price and the model?
Question A10.3: Do you agree with our initial assessment for the Smart Metering Net Cost Change, including our inclusion and assessment of the costs of SEGB, SMICoP and DCC charges?

Chapter 2 – Key judgements
Question A10.4: Do you agree with the judgements we have set out regarding smart costs, in particular our choice of data and model, identification of relevant costs and benefits, and approach to variation?
Question A10.5: Do you consider that there will be any significant change in the costs or benefits of smart metering from 2017 onwards? For example, installation costs or asset costs. Please provide evidence to support your view.
Question A10.6: Please comment on the proposed methodology for calculating the efficient cost of rolling out a smart meter, indicating a preference with supporting rationale, on the efficiency option (average cost approach, pure frontier cost approach, lower quartile approach)

Chapter 3 – Updating the cap
Question A10.7: Do you agree with our approach to updating smart costs? In particular, our intention to specifically index smart cost changes, based on net cost

analysis (option 3), and whether any other approaches would be preferable to option 3.